BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION, NEW DELHI

PETITION NO. /TL/2025

IN THE MATTER OF:

Anantapur II REZ Transmission Limited ...**PETITIONER**

VERSUS

Central Transmission Utility of India Limited & Ors. ...**RESPONDENTS**

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THROUGH

MATRUGUPTA MISHRA/ SWAGATIKA SAHOO
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PLACE: NEW DELHI
DATE: 07.04.2025

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION, NEW DELHI

PETITION NO. /TL/2025

IN THE MATTER OF:

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MEMO OF PARTIES

Anantapur II REZ Transmission Limited
First Floor, Urjanidhi, 1 Barakhamba Lane,
Connaught Place, New Delhi-110001

...**PETITIONER**

VERSUS

1. Central Transmission Utility of India Limited,
Ministry of Power Govt. of India,
Shram Shakti Bhawan,
Rafi Marg, New Delhi-110001.

2. PFC Consulting Limited
Corporate Office,
Ninth Floor ('A' Wing)
Statesman House Building,
Barakhamba Road, Connaught Place,
New Delhi - 110 001

3. Kerala State Electricity Board Limited
Tariff Regulatory and Affairs Cell,
Vydyuthi Bhavan, KSEB Ltd.,
Thiruvananthapuram– 695004 (Kerala).

4. Tamil Nadu Generation & Distribution Corporation
NPKRR Maaligai, 144 Anna Salal,
Chennai– 600002 (Tamil Nadu).

5. Karnataka Power Transmission Corporation Limited
Corporate Office, KPTCL,
Kaveri Bhavan, K.G Road,
Bengaluru- 560009 (Karnataka).

6. Southern Power Distribution Company of Andhra Pradesh Limited
APPCC, Vidyut Soudha, Gunadala,
Vijayawada- 520004 (Andhra Pradesh).

7. Transmission Corporation of Andhra Pradesh Limited
Power Systems & Commercial, APTRANSCO,
Vidyut Soudha-520004 (Vijayawada).

8. Gulbarga Electricity Supply Company Limited
PTC Section, Station Main Road,
Opp. Parivar Hotel, GESCOM,
Kalaburagi, Gulbarga- 585102, Karnataka.

9. Transmission Corporation of Telangana Limited
6-3-572 Vidyut Sauda, Khairatabad,
Hyderabad– 500082 (Telangana).

10. Bangalore Electricity Supply Company
Corporate Office
BESCOM, K.R. Circle, Bengaluru– 560001 (Karnataka).

11. Renew Solar Power Private Limited
138, Ansal Chamber,Bika Ji Cama,
Chamber, New Delhi-110029.

12. Chamundeshwari Electricity Supply Corporation Limited
No.29, Corporate Office,
CESC Mysore, Vijayanagar 2nd Stage,
Hinkal, Mysuru-570 017 (Karnataka).

13. Mangalore Electricity Supply Company Limited
Corporate Office, Mescom,
Mescom Bhavana,
Kavoor Cross Road, Bejai,
Mangalore– 575004 (Karnataka).

14. JSW Renew Energy Limited
JSW Centre, BKC, Bandra East,
Mumbai- 400051 (Maharashtra).

15. Renew Surya Ojas Private Limited
138, Ansal Chamber - II,
Bikaji Cama Place,
New Delhi-110066.

16. Ayana Renewable Power Six Private Limited
S 2904, 29th floor, World Trade Center,
Brigade Gateway Campus, 26/1,
Dr. Rajkumar Road, Rajajinagar-560055 (Bangalore).

17. Eastern Power Distribution Company of Andhra Pradesh Limited
Chief General Manager, RA&PP,
Corporate Office, Seethammadhara, P&T Colony,
Visakhapatnam-530013 (Andhra Pradesh).

18. Hubli Electricity Supply Company Limited
Corporate Office PB Road,
Navanagar Hubballi, Hubli– 580025 (Karnataka).

...RESPONDENTS

THROUGH

MATRUGUPTA MISHRA/ SWAGATIKA SAHOO
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BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION, NEW DELHI

PETITION NO. /TL/2025

IN THE MATTER OF:

Petition under Section 14, 15 and 79(1)(e) of the Electricity Act, 2003 read with the Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 for grant of transmission license to Anantapur II REZ Transmission Limited

AND IN THE MATTER OF:

Anantapur II REZ Transmission Limited **...PETITIONER**

VERSUS

Central Transmission Utility of India Limited & Ors. **...RESPONDENTS**

PETITION UNDER SECTION 14, 15 AND 79(1)(e) OF THE ELECTRICITY ACT, 2003 READ WITH THE CENTRAL ELECTRICITY REGULATORY COMMISSION (PROCEDURE, TERMS AND CONDITIONS FOR GRANT OF TRANSMISSION LICENSE AND OTHER RELATED MATTERS) REGULATIONS, 2024 FOR GRANT OF TRANSMISSION LICENSE TO ANANTAPUR II REZ TRANSMISSION LIMITED, THE PETITIONER HEREIN

MOST RESPECTFULLY SHEWETH:

1. The present Petition is being filed by the Petitioner, Anantapur II REZ Transmission Limited (**"ARTL"**), under Section 14, 15 and 79(1)(e) of the Electricity Act, 2003

(**"the Act"**) read with the Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 (**"Transmission License Regulations, 2024"**) for grant of transmission license for the establishment of *"Transmission System for Evacuation for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"* (**"Project"**) on Build, Own, Operate and Transfer ("BOOT") basis and to provide transmission services as per the terms of the Transmission Service Agreement (**"TSA"**) dated 31.03.2025. The details of the Project as provided under Schedule 1 of the TSA are as follows:

"...

Transmission System for Integration of Anantapur-II REZ – Phase-I (for 4.5 GW)		
S. No.	***Name of Transmission Element***	***Scheduled COD in months from Effective Date***
1.	*Establishment of 4x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level.* • *765/400 kV, 1500 MVA, ICTs – 4 Nos. (13x500 MVA incl. 1 spare unit)* • *765 kV ICT bays – 4 Nos.* • *400 kV ICT bays – 4 Nos.* • *400/220 kV, 500 MVA, ICTs – 6 Nos.* • *400 kV ICT bays – 6 Nos.* • *220 kV ICT bays – 6 Nos.* • *765 kV line bays – 4 Nos. (at Ananthapuram-II PS for termination of Ananthapuram-II – Davanagere and*	*24 months (31.03.2027)*

	Ananthapuram-II – Cuddapah 765kV D/C lines) • *765 kV, 330 MVAr Bus Reactor – 2 Nos.* • *765 kV Bus Reactor bays – 2 Nos.* • *220 kV line bays – 6 Nos.* • *220 kV Bus Sectionalizer : 1 set* • *220 kV Bus Coupler (BC) Bay – 2 Nos.* • *220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos.* ***Future Space Provisions:*** • *765/400 kV, 1500 MVA, ICTs – 2 Nos.* • *765 kV ICT bays – 2 Nos.* • *400 kV ICT bays – 2 Nos.* • *400/220 kV, 500 MVA, ICTs – 12 Nos.* • *400 kV ICT bays – 12 Nos.* • *220 kV ICT bays – 12 Nos.* • *765 kV line bays – 8 Nos. (with provision for SLR)* • *400 kV line bays – 12 Nos. (with provision for SLR)* • *220 kV line bays – 20 Nos.* • *220 kV Bus Sectionalizer : 2 sets* • *220 kV Bus Coupler (BC) Bay – 2 Nos.* • *220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos.* • *400 kV Bus Sectionalizer : 1 set*	
2.	*Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits* • *765 kV line bays – 2 Nos. (at Davanagere PS)* • *765 kV, 240 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x80 MVAr including 1 switchable spare unit)*	
3.	*Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits* • *765 kV line bays – 2 Nos. (at Cuddapah)* • *765 kV, 330 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x110 MVAr including 1 switchable spare unit for both bus reactor and line reactor)*	
4.	*+300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR*	

	• *400 kV bay – 1 No.*	

Note:

i. POWERGRID shall provide space for 2 Nos. of 765 kV GIS line bays (only 765 kV line terminal equipments) at Cuddapah for termination of Ananthapuram-II PS – Cuddapah 765 kV D/C line.

ii. Developer of Davanagere PS shall provide space for 2 Nos. of 765 kV line bays at Davanagere PS for termination of Ananthapuram-II PS – Davanagere 765 kV D/C line.

I. DESCRIPTION OF PARTIES

2. It is submitted that the Anantapur II REZ Transmission Limited (**"ARTL"**) i.e., the Petitioner is a Special Purpose Vehicle established to implement the project under Section 63 of the Act.

3. The Respondent No. 1 is the Central Transmission Utility of India Limited (**"CTUIL"**) established under Section 38 of the Act for planning and co-ordination of transmission systems.

4. The Respondent No. 2 is PFC Consulting Limited (**"PFC"**) which has been appointed as the Bid Process Co-ordinator for the tariff based competitive bidding process.

5. The Respondent No. 3 to Respondent No. 18 are the beneficiary of the Southern Region.

II. FACTUAL BACKGROUND

6. Government of India (**"GoI"**) has set a target of 500 GW generation capacity from non-fossil fuel resources by 2030. Pursuant thereto, Ministry of New and Renewable Energy

("**MNRE**") has identified around 86 GW RE potential in the State of Andhra Pradesh, Telangana, Karnataka and Tamil Nadu (Offshore) in Southern Region. Out of the identified (86 GW) RE potential in Southern Region, 51 GW has been identified in the State of Andhra Pradesh (Ananthapur– 20 GW, Kurnool – 23 GW & Kadapa – 8 GW). A comprehensive transmission system for integration of 51 GW RE potential in Andhra Pradesh have been identified by Central Electricity Authority ("**CEA**") and a report on Transmission System for Integration of over 500 GW RE Capacity has been published by CEA on 07.12.2022. The details of district wise potential are as below:

District	Pooling Station	Wind (GW)	Solar (GW)	Total Potential (GW)	Maximum Dispatch (GW)	BESS (GW)	Evacuation System (GW)
Anantapur	Anantapur, Anantapur-II	10	10	20	15	5	10
Kurnool	Kurnool-IV, Kurnool-V	8	15	23	18	6	12
Kadapa	Kadapa-II	0	8	8	8	3	5
Total		**18**	**33**	**51**	**41**	**14**	**27**

7. The need for implementation of the Project was approved by the National Committee for Transmission ("**NCT**") during its 22nd meeting held on 23.08.2024. The relevant portion is reproduced hereinbelow for ready reference:

> *"4.5.3 Keeping above in view, it is prudent to take up the implementation of Kurnool-IV PS and Anantapur-II PS for integration of RE generation projects in Kurnool and Anantapur areas. The scheme is bifurcated in two parts:*

a. Transmission System for Integration of Kurnool-IV REZ - Phase-I (for 4.5 GW)

b. Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4 GW)

4.5.4 Accordingly, transmission scheme "Transmission System for Integration of Kurnool- IV REZ - Phase-I (for 4.5 GW)" with following scope is proposed (detailed agenda is enclosed at (Annexure 4.5 A):

i. The scheme was discussed in the 52nd SRPC meeting held on 03.08.2024. SRPC views on the scheme are attached at Annex-I.

ii. Estimated Cost of the scheme is INR 5550 Crore with implementation timeframe of 24 months."

[Underline Supplied]

A copy of the 22nd meeting of the National Committee on Transmission held on 23.08.2024 are annexed herewith and marked as **ANNEXURE P– 1**.

8. Accordingly, the Ministry of Power (**MOP**) *vide* its Gazette Notification No. No. F. No. 15/3/2018- Trans-Part (1) dated 12.09.2024 (**"MOP Notification"**), in exercise of the powers conferred by paragraph 3.2 of the said TBCB Guidelines, the MOP appointed PFC as the Bid Process Co-ordinator (**"BPC"**) for conducting the bid process for selection of the Transmission Service Provider (**"TSP"**) for establishment of the Project.

A copy of the MOP Notification dated 12.09.2024 is annexed herewith and marked as **ANNEXURE P – 2**.

9. PFC initiated the TBCB process in terms of the TBCB Guidelines through a single stage two envelope process of

Request for Proposal ("**RFP**"). The RFP was issued on 15.10.2024. The successful bidder was required to acquire one hundred percent (100%) of the equity shares of the Petitioner company along with all its related assets and liabilities.

A copy of the Request For Proposal dated 15.10.2024 issued by BPC along with all the clarifications and amendments issued thereto along with the amendment for extension of bid submission are annexed herewith and marked as **ANNEXURE P – 3 (Colly).**

10. The said RFP notification was duly published in four (4) national newspapers *viz.* Hindustan Times (English), Mint (English), Hindustan Times (Hindi) and Financial Times (Worldwide). The same have also been made available on the website of (https://www.pfcclindia.com). As per the requirements under the TBCB guidelines, the BPC had intimated this Hon'ble Commission, on 24.10.2024, regarding the initiation of the bid process and shared all the notices so published.

A copy of the letter dated 24.10.2024 issued by the BPC intimating this Hon'ble Commission along with the enclosures therein are annexed herewith and marked as **ANNEXURE P – 4 (Colly).**

11. In compliance with the TBCB Guidelines, the entire bidding process was conducted on electronic platform created by MSTC Limited wherein all the bidders had

submitted their bids online through the electronic bidding platform. Resonia Limited (**"Resonia"**), erstwhile Sterlite Grid 32 Limited, was one of the bidders who had submitted their bid for the Project. Resonia submitted its Technical and Financial Bid-Initial Offer on 31.01.2025, and after the conclusion of e-reverse auction process, on 14.02.2025, Resonia emerged as the successful bidder having quoted the lowest levelized transmission charges of INR 4,486.42 Million per annum as per Clause 3.6.1 of the RFP.

12. On 06.01.2025, the BPC incorporated the Petitioner company under the Companies Act, 2013, as its wholly owned subsidiary, to initiate various activities for execution of the Project and to subsequently act as the TSP.

Further, *vide* letter dated 21.02.2025, the BPC informed Resonia that in terms of the Clause 1.6.2.1(5) of the RFP, a cost of INR 19,23,35,520/- (Rupees Nineteen Crore Twenty Three lakh Thirty Five Thousand Five Hundred Twenty Only) is payable as the "Acquisition Price" for 100% ownership of the Special Purpose Vehicle (**"SPV"**) being ANANTAPUR II REZ TRANSMISSION LIMITED.

A copy of the Certificate of Incorporation of the Petitioner company is annexed herewith and marked as **ANNEXURE P – 5**

A copy of the Memorandum of Association along with the Articles of Association of the Petitioner company is

annexed herewith and marked as **ANNEXURE P – 6 (Colly).**

A copy of the letter dated 21.02.2025 issued by BPC to Resonia is annexed herewith and market as **ANNEXURE P – 7.**

13. The BPC also requested for issuance of a Contract Performance Guarantee ("**CPG**") in favour of the Nodal Agency, i.e., the Central Transmission Utility of India Ltd. ("**CTUIL**"), the Respondent No. 1. Thereafter, Resonia was issued a Letter of Intent (LoI) on 19.02.2025 by the BPC which was unconditionally accepted by the Petitioner.

A copy of the Letter of Intent dated 19.02.2025 issued by BPC to Resonia is annexed herewith and marked as **ANNEXURE P – 8.**

14. It is also highlighted that the Bid Evaluation Committee (**"BEC"**) issued a certificate on 17.02.2025 (**"BEC Certificate"**), *inter alia*, declaring that the entire bidding process had been carried out in accordance with the TBCB Guidelines.

A copy of the BEC Certificate dated 17.02.2025 is annexed herewith and marked as **ANNEXURE P – 9.**

15. Thereafter, by letter dated 31.03.2025, Resonia furnished a Contract Performance Guarantee (**"CGP"**) dated 28.03.2025 for an amount up to and not exceeding to INR 128,75,00,000/-, with the expiry date of the CPG being

30.06.2027, further extendable upto 30.06.2028 by the Nodal Agency, i.e., CTUIL / the Respondent No. 1. Subsequently, an amount of INR 17,58,11,968/- (after deduction of TDS @ 10% amounting to INR 1,65,23,552/- from the acquisition price of INR 19,23,35,520/- was paid by Resonia to the BPC on 28.03.2025 vide transaction ID no. M3569246.

A copy of the letter dated 31.03.2025 along with the CPG issued by Resonia to BPC is annexed herewith and marked as **ANNEXURE P – 10 (Colly)**.

16. It is submitted that Clause 2.7.2. and Clause 2.15.2 of the RFP provide for a timeline after issuance of the LOI, which require signing of the project documents under the RFP and acquisition of the SPV within 10 days of the issuance of the LOI. However, the same was extended by the BPC from 28.02.2025 to 31.03.2025 vide its letter dated 31.03.2025.

A copy of letter dated 31.03.2025 issued by BPC is annexed herewith and marked as **ANNEXURE P – 11.**

17. That by virtue of Clause 2.15.2 of the RFP, the Selected Bidder is obligated to provide the requisite CPG, execute Share Purchase Agreement and acquire 100% equity shareholding of the SPV floated by BPC. The relevant clause is reproduced as under:

> *"2.15.2 Within ten (10) days of the issue of the Letter of Intent, the Selected Bidder shall:*

1. Provide the Contract Performance Guarantee in favour of the Nodal Agency as per the provisions of Clause 2.12;

2. Execute the Share Purchase Agreement and the Transmission Service Agreement;

3. acquire, for the Acquisition Price, one hundred percent (100%) equity shareholding of SPV [which is under incorporation] from PFC Consulting Limited, who shall sell to the Selected Bidder, the equity shareholding of SPV [which is under incorporation], along with all its related assets and liabilities; Stamp duties payable on purchase of one hundred percent (100%) of the equity shareholding of SPV [which is under incorporation], along with all its related assets and liabilities, shall also be borne by the Selected Bidder.

Provided further that, if for any reason attributable to the BPC, the above activities are not completed by the Selected Bidder within the above period of ten (10) days as mentioned in this Clause, such period of ten (10) days shall be extended, on a day for day basis till the end of the Bid validity period."

Thus, after completing all procedural requirements as specified in the bid documents, the acquisition of the SPV was done and Resonia acquired 100% equity shareholding in the Petitioner Company on 31.03.2025 upon execution of the Share Purchase Agreement (**"SPA"**). On the same day, the Petitioner also executed the TSA with Respondent No. 1/CTUIL.

A copy of the Share Purchase Agreement dated 31.03.2025 executed between the BPC, the Petitioner and Resonia is annexed herewith and marked as **ANNEXURE P – 12**

A copy of the Transmission Service Agreement dated 31.03.2025 executed between CTUIL and Petitioner is annexed herewith and marked as **ANNEXURE P – 13.**

18. It is submitted that in terms of Clause 2.15.4 of the RFP, the Petitioner is obligated to approach this Hon'ble Commission within five (5) working days from the execution of the SPV by the successful bidder, by way of filing appropriate Petition seeking grant of transmission license as well as adoption of transmission tariff so discovered during the bidding process qua the Project.

Therefore, simultaneously with the present Petition, the Petitioner is also filing a petition for adoption of transmission tariff discovered during the bidding process under Section 63 of the Act, *inter alia*, in accordance with the provisions of Article 2.15.4 of the RFP.

19. It is most respectfully submitted that the bidding was done on the basis of the existing Standard Bidding Documents (**"SBD"**). However, the transmission charges will be shared and recovered as per the mechanism devised by this Hon'ble Commission which is the Point of Connection (**"PoC"**) mechanism. The transmission scheme would be included in National Transmission Pool for recovering transmission charges through PoC mechanism. The charges will be recovered from the designated Inter-State Transmission Service customers and disbursed to the Petitioner as per the Revenue Sharing Agreement.

20. Further, as stated above, the BEC Meeting, *inter alia*, recognized that the TBCB process carried out for selection of the successful bidder for implementing the Project was conducted in terms of the TBCB guidelines, and the tariff

quoted by Resonia was the lowest tariff discovered during the e-reverse auction process.

21. It is humbly submitted that Section 14 of the Act provides that the Appropriate Commission may, on an application made under Section 15 of the Act, grant licence to any person to transmit electricity as a transmission licensee, in any area as may be specified in the licence. The word 'person' has been defined in Section 2(49) of the Act to include any company or body corporate or association or body of individuals, whether incorporated or not, or an artificial juridical person. Therefore, the Petitioner in accordance with the TSA and under Section 14 of the Act, is filing the present Petition, *inter-alia* seeking grant of a Transmission Licence for the Project explained above.

22. Further, it is most respectfully submitted that Section 15(1) of the Act provides that every application under Section 14 shall be made in such manner and in such form as may be specified by the Commission and shall be accompanied with such fees as may be prescribed under CERC (Procedure, Terms and Conditions for grant of Transmission Licence and other related matters) Regulations, 2024 ("**Transmission Licence Regulations, 2024**"). As per Regulation 4, a person selected through the process under the guidelines for competitive bidding is eligible for grant of licence. It is further submitted that the Petitioner company, incorporated under the Companies Act, 2013 is a wholly owned subsidiary of Resonia who has

been selected through the TBCB process, in accordance with the TBCB Guidelines and thus, eligible for the issuance of a Transmission Licence.

23. It is submitted that the grant of transmission license is a condition under the TSA and is also a requirement in law, without which, the Petitioner cannot proceed with the establishment of the Project.

24. It is submitted that this Hon'ble Commission, in the Transmission Licence Regulations, has prescribed Form-I and the fee for making filing application, seeking grant of a Transmission Licence. It is submitted the requisite fee for filing the present petition has been paid by the Petitioner and the prescribed Form-I along with the resolution passed by the Board of Directors of the Petitioner company.

25. Pursuant to the above, the Petitioner, in accordance with Regulation 5(3) of the Transmission Licence Regulation, 2024 has uploaded the complete copy of the Petition accompanying with annexures and enclosures on the e-filing portal of this Hon'ble Commission, so that the same is served electronically to all the beneficiaries of the Project, registered on the e-filing portal. Further, the Petitioner has served the copy of the present application through email, on the beneficiaries, not registered on the e-filing portal of this Hon'ble Commission.

26. It is submitted that as per Regulation 5(4) of the Transmission Licence Regulation, 2024, the copy of the

complete Petition along with annexures has been posted on the website of the Petitioner's parent company (www.sterlitepower.com), in English and in vernacular language and the application shall remain on the Petitioner's website, till the time the licence is issued to the Petitioner or the application is rejected by this Hon'ble Commission.

27. It is submitted that the Petitioner shall, in future, comply with all the other requirements from time to time, as stipulated under the Act and the Transmission Licence Regulations, passed by this Hon'ble Commission, and place a report of compliance of the same before this Hon'ble Commission.

28. The Petitioner declares that the present Petition has been filed without any delay and within the period of limitation.

29. It is submitted that simultaneously with the present Petition, the Petitioner has also filed another Petition before this Hon'ble Commission for adoption of the transmission charges.

30. In view of the above, it is submitted that the Petitioner satisfies all the conditions for the grant of an inter-State Transmission Licence under the Act and the Transmission Licence Regulations for the establishment of the Project. Therefore, the Petitioner humbly prays that the aforementioned be taken on record and its prayers be allowed.

PRAYERS

In view of the facts and circumstances stated above, the Petitioner respectfully prays that the Hon'ble Commission may be pleased to:

a. Issue the Transmission Licence to the Petitioner for establishing, operating and maintaining the Transmission System of "*Transmission System for Evacuation for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)*", comprising of assets/ elements as detailed in the present petition, in terms of the provisions of RFP dated 15.10.2024 and Transmission Service Agreement dated 31.03.2025 read with Sections 14, 15 and 79 (1) (e) of the Electricity Act;

b. Allow the Transmission Project, as detailed in the present Petition, to be part of the Inter-State Transmission System and direct that the recovery of transmission charges shall be in accordance with the terms of the Central Electricity Regulatory Commission (Sharing of Inter-state Transmission Charges and losses) Regulations, 2020 and subsequent amendments/ enactments, thereto;

c. Condone any inadvertent errors omissions/ errors/ shortcomings and permit the Petitioner to add/change/modify/alter these pleadings and make further submissions as may be required at a future date; and

d. Pass such other order(s) as this Hon'ble Commission may deem fit and proper in the facts and circumstances of this case.

Khanapur II REZ Transmission Limited

PETITIONER

THROUGH

MATRUGUPTA MISHRA/ SWAGATIKA SAHOO
NIPUN DAVE/ SONAKSHI/ AKANSHA V. INGOLE
ADVOCATES FOR THE PETITIONER

M/S. RITAM LEGAL,
ADVOCATES AND ADVISORY,
M-15, FIRST FLOOR,
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NEW DELHI-110049.
PHONE: +91-11-43552390-91
E-MAIL: desk@ritamlegal.com

PLACE: NEW DELHI

DATE: 05.04.2025

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION, AT NEW DELHI

PETITION NO. _____/TL/2025

IN THE MATTER OF:

Anantapur II REZ Transmission Limited ...**PETITIONER**

VERSUS

Central Transmission Utility of India Limited and Ors.

.... **RESPONDENTS**

AFFIDAVIT

I, T. Amarendranath Reddy, son of Late Shri T. Sambasiva Reddy, authorised representative of the Petitioner company, office at: DLF Cyber Park, Tower-B, 9th Floor, Udyog Vihar, Phase-III, Sector 20, Gurugram – 122008, presently at New Delhi do hereby solemnly affirm and state as under:

1. That I am the authorized representative on behalf of the Petitioner Company in the abovementioned matter, I have been dealing with the matters relating to the abovementioned case and I am authorized to sign and verify the present affidavit. I conversant with the facts of the case.

NOTARY PUBLIC ★ MINATI RANI MOHAPATRA ★
App By Govt. of India
Regd. No. 16971
Area Delhi / NCR
Juris Extn Whole India
Expiry Date 1 Feb 2030

Anantapur II REZ Transmission Limited

2. That I have read the accompanying Petition and I say that its contents are true to my knowledge and belief and based on the records which are believed to be true and correct.

3. The Annexures filed along with the accompanying Petition are true copies of their respective originals.

Anantapur II REZ Transmission Limited

DEPONENT

VERIFICATION

I, T. Amarendranath Reddy, the deponent above named do hereby verify that all facts stated in the affidavits are true to my knowledge, no part of it is false and nothing material has been concealed therefrom.

05 APR 2025

Verified at New Delhi on the ____ day of April, 2025.

D/4863/2020
NIPUN DAVE
9717277898
IDENTIFIED

05 APR 2025

Anantapur II REZ Transmission Limited

DEPONENT

NOTARY PUBLIC
App By
Govt. of India
Regd. No. 16971
Area Delhi NCR
Juris Extd. Whole India
Expiry Date
1 Feb 2030
MINATI RANI MOHAPATRA

ATTESTED
MINATI RANI MOHAPATRA
NOTARY DELHI-R-16971
GOVERNMENT OF INDIA
SUPREME COURT OF INDIA
COMPOUND NEW DELHI
REGISTER Pg./Sl. No. ____

MINATI RANI MOHAPATRA
ADVOCATE (NOTARY)
Mob. No.: 8130128457

ANNEXURE P-1

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग- II
Power System Planning & Appraisal Division-II

सेवा में /To

As per list of Addresses

विषय: ट्रांसमिशन पर राष्ट्रीय समिति (एनसीटी) की बाईसवीं बैठक के कार्यवृत्त – के सम्बन्ध में ।

Subject: Minutes of the 22nd Meeting of National Committee on Transmission (NCT) – regarding.

महोदया (Madam) / महोदय (Sir),

The 22nd meeting of the "National Committee on Transmission" (NCT) was held on 23rd August, 2024, at CEA, New Delhi. Minutes of the meeting are enclosed herewith.

भवदीय/Yours faithfully,
Signed by Bhagwan Sahay Bairwa
Date: 01-09-2024 07:20:24
(बी.एस.बैरवा/ B.S. Bairwa)
मुख्य अभियन्ता (इंचार्ज) एवं सदस्य सचिव,एन.सी.टी./
Chief Engineer (I/C) & Member Secretary (NCT)

प्रतिलिपि / Copy to:

Joint Secretary (Trans), Ministry of Power, New Delhi-110001

List of Addresses:

1.	Chairperson, Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.	2.	Member (Power Systems), Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.
3.	Member (Economic & Commercial), Central Electricity Authority Sewa Bhawan, R.K. Puram, New Delhi – 110 066.	4.	Director (Trans), Ministry of Power Shram Shakti Bhawan, New Delhi-110001.
5.	Sh. Lalit Bohra, Joint Secretary Room no 602, Atal Akshay Urja Bhawan Opposite CGO Complex, Gate No. 2, Lodhi Road, New Delhi – 110003	6.	Chief Operating Officer, CTUIL, Saudamini, Plot No. 2, Sector-29, Gurgaon – 122 001.
7.	Sh. Rajnath Ram, Adviser (Energy), NITI Aayog, Parliament Street, New Delhi – 110 001.	8.	CMD, Grid Controller of India, B-9, Qutub Institutional Area, Katwaria Sarai, New Delhi – 110016
9.	Sh. Ravinder Gupta Ex. Chief Engineer CEA		

Special Invitee

Chief Engineer (PCD), CEA

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Minutes of the 22nd meeting of National Committee on Transmission (NCT)

The 22nd meeting of NCT was held on 23rd August, 2024 at CEA, New Delhi. List of participants is enclosed at **Annexure-I**. Agenda wise deliberations are given below:

1 Confirmation of the minutes of the 21st meeting of National Committee on Transmission.

1.1 The minutes of the 21th meeting of NCT held on 06.08.2024 were issued on 21.08.2024 vide CEA letter No. CEA-PS-12-13/3/2019-PSPA-II. No comments have been received on the minutes.

1.1 Members confirmed the minutes.

2 Status of the transmission schemes noted/approved/recommended to MoP in the 21st meeting of NCT:

2.1 Status of new transmission schemes approved/recommended:

Sr. No	Name of the Transmission Scheme	Noted/ Recommended / Approved	Mode of Implementation	BPC	Award/ Gazette notification
1.	Augmentation of transformation capacity at Banaskantha (Raghanesda) PS (GIS)	Approved	TBCB	RECPDCL	Under process
2.	Augmentation of transformation capacity at KPS1 (GIS) Part B1; and KPS2 (GIS) Part B2 (Phase-V) scheme	Approved	TBCB	RECPDCL	Under process
3.	Augmentation at Fatehgarh-II PS, Fatehgarh-IV PS(Section-II) and Barmer-I PS	Approved	TBCB	PFCCL	Under process
4.	Transmission System for supply of power to Green Hydrogen/Ammonia manufacturing potential in Kandla area of Gujarat (Ph-I: 3.0 GW)	Recommended	TBCB	PFCCL	Under process
5.	Transmission system for evacuation of power from Rajasthan REZ Ph-V (Part-1: 4 GW) [Sirohi/Nagaur] Complex	Recommended	TBCB	RECPDCL	Under process
6.	North-Eastern Region Expansion Scheme-XXV Part-A (NERES-XXV Part-A)	Recommended	TBCB	PFCCL	Under process
7.	Augmentation of transformation capacity by 2x500 MVA (9th &	Approved	RTM	Not applicable	Informed to CTUIL vide

Sr. No	Name of the Transmission Scheme	Noted/ Recommended / Approved	Mode of Implem entation	BPC	Award/ Gazette notification
	10th), 400/220 kV ICTs at Tumkur (Pavagada) 400/220 kV Pooling Station in Karnataka and Implementation of 1 Nos. of 220 kV line bay at Tumkur (Pavagada) 400/220 kV PS for providing Connectivity to RE generation project				letter dated 21.08.2024 CTUIL forwarded the recommendations on 21.08.2024
8.	North-Eastern Region Expansion Scheme-XXV Part-B (NERES-XXV Part-B)	Approved	RTM	Not applicable	

2.2 Status of transmission schemes where modifications was suggested by NCT:

S. No.	Scheme where modifications was suggested	Status
1.	Modification of implementation schedule of one of the 400 kV bay of M/s Indosol Solar Pvt. Ltd. under the scheme "Transmission system strengthening at Kurnool-III PS for integration of additional RE generation projects"	Informed to PFCCL vide letter dated 21.08.2024
2.	Change in Implementation time-frame of Eastern Region Expansion Scheme-XXXIX (ERES-XXXIX)	Informed to RECPDCL vide letter dated 21.08.2024
3.	Modification in the scope of works of the transmissions scheme "Transmission Scheme for integration of Davanagere / Chitradurga REZ."	Informed to PFCCL vide letter dated 21.08.2024
4.	Modification in the Transmission scheme "Transmission system for evacuation of power from Rajasthan REZ Ph-IV (Part-4: 3.5 GW): Part B".	Informed to RECPDCL vide letter dated 21.08.2024
4.	Denotification of the transmission scheme "Transmission system for evacuation of power from Chhatarpur SEZ (1500 MW) in Madhya Pradesh"	Informed to MoP vide letter dated 21.08.2024

3 Modifications in the earlier approved/notified transmission schemes:

3.1 Modification in Transmission system for evacuation of power from Luhri Stage-I HEP

3.1.1 Transmission system for evacuation of power from Luhri Stage-I HEP was discussed and agreed in the 8th NCT meeting held on 25.03.2022. Scheme was notified in Gazette dated 02.06.2022 with RECPDCL as the BPC of the transmission scheme. The transmission scheme is currently under bidding. Based on survey, location of ISTS Pooling station had been identified in Ogli Village.

3.1.2 During the course of bidding, the logistics issues in transportation of large size equipment was highlighted by bidders. In a meeting taken by Addl. Secretary (Trans), MoP on 07.06.2024 to discuss the Logistics issues in transportation of equipment for sub-station, SJVN suggested to shift the location of Nange (ISTS) Pooling Station (presently proposed at Ogli village) to a suitable location near Koldam (GIS) S/s adjacent to National Highway (NH) in order to remove the hurdles associated with transportation of heavy equipment. SJVN had also informed that they would bring 220 kV dedicated line from Luhri-I and Sunni Dam HEP to the new ISTS Pooling station near Koldam. Further, SJVN informed that that the new location of ISTS Pooling station would be about 6-7 kms (BEE length) from Koldam HEP switchyard as per initial survey. Accordingly, MoP directed that the location of pooling station may be kept as per suggestions of SJVNL. Based on preliminary survey by BPC in association with SJVNL, some locations for the pooling station were identified near Koldam (GIS) S/s.

3.1.3 The proposal was further deliberated in 20th NCT meeting held on 25.06.24, wherein it was stated that in view of revised location of Pooling station (near Koldam), line length of Pooling station (near Koldam)-Ropar section is reduced and therefore 50 MVAr line reactor at Ropar S/s is not required due to reactive over compensation (~95%). Overall there will be reduction in cost of the scheme from Rs. 432 Cr to Rs. 305 Cr. After deliberations, NCT approved modified Transmission system for evacuation of power from Luhri Stage-I HEP scheme.

3.1.4 Subsequently, the proposal for finalistaion of the location of pooling station was deliberated with HPPTCL, as HPPTCL may draw power from the proposed pooling station in future. HPPTCL had apprehension that the proposed locations near Koldam (GIS) S/s have openings only on two sides and it will be very difficult to construct line in future from the proposed location. Accordingly, HPPTCL suggested to locate the pooling station in Bilaspur area. Hence, BPC carried out detailed survey and identified the location of pooling station in Bilaspur. The proposed location was jointly agreed in a meeting between CEA, CTUIL, SJVNL, HPPTCL and BPC. Accordingly, modification in the transmission scheme was proposed wherein instead of Nange (GIS) Pooling Station – Koldam 400 kV D/c line (only one circuit is to be terminated at Koldam while second circuit would be connected to bypassed circuit of Koldam – Ropar/Ludhiana 400 kV D/C line), LILO of one circuit of Koldam – Ropar/Ludhiana 400 kV D/C line at Pooling station (now near Bilaspur) was proposed.

3.1.5 As per HPM Division, CEA, Luhri I HEP is likely to be commissioned in May, 2027.

3.1.6 After deliberations, NCT approved the modifications in transmission scheme "Transmission system for evacuation of power from Luhri Stage-I HEP" as follows with implementation timeframe of May, 2027:

Sl. No.	Approved Scope of Transmission Scheme (As per 20th NCT)	Modified Transmission Scheme
1	Establishment of 7x105 MVA, 400/220 kV **Pooling Station near Koldam (GIS)** along with 125 MVAR (420 kV) Bus Reactor (1-Ph units along with one spare unit) • 315MVA, 400/220 kV ICT: 2 Nos. (7x105 MVA including 1 spare ICT) • 400 kV ICT bays: 2 Nos. • 220 kV ICT bays: 2 Nos. • 400 kV, 125 MVAr Bus Reactor – 1 No. • 400 kV Bus Reactor bay- 1 Nos. • 400 kV Line Bays- 2 Nos. Future provisions: Space for • 400/220 kV ICTs (315 MVA with single phase units) along with associated bays: 3 Nos. • 400 kV line bays along with switchable line reactor: 3 Nos. • 220 kV line bays: **10 Nos.** • 220 kV bus sectionalizer: 1 set	Establishment of 7x105 MVA, 400/220 kV **Pooling Station near Bilaspur (GIS)** along with 125 MVAR (420 kV) Bus Reactor (1-Ph units along with one spare unit) • 315MVA, 400/220 kV ICT: 2 Nos. (7x105 MVA including 1 spare ICT) • 400 kV ICT bays: 2 Nos. • 220 kV ICT bays: 2 Nos. • 400 kV, 125 MVAr Bus Reactor – 1 No. • 400 kV Bus Reactor bay- 1 Nos. • 400 kV Line Bays- 2 Nos. Future provisions: Space for • 400/220 kV ICTs (315 MVA with single phase units) along with associated bays: 3 Nos. • 400 kV line bays along with switchable line reactor: 3 Nos. • 220 kV line bays: **8 Nos.** • 220 kV bus sectionalizer: 1 set
2	Pooling Station near Koldam (GIS)– Koldam (NTPC) 400 kV D/C line (Triple snowbird) (only one circuit is to be terminated at Koldam(NTPC) while second circuit would be connected to bypassed circuit of Koldam(NTPC) – Ropar/Ludhiana 400 kV D/C line) – 7 km	**LILO of one ckt of 400 kV Koldam (NTPC) – Ropar (Triple snowbird) D/c line at Pooling Station near Bilaspur (GIS)– 1 km**
3	1 no. of 400 kV line bay at Koldam S/s for termination of Pooling Station near Koldam (GIS)– Koldam(NTPC) 400 kV line along with 125 MVAR (420 kV) Bus Reactor at Koldam(NTPC) S/s (1-Ph units along with one spare unit) • 400 kV Line Bay- 1 no. • 400 kV, 125 MVAr Bus Reactor# - 1 no. (to be terminated in existing line bay at Koldam(NTPC), which would be available due to bypassing of one circuit of Koldam – Ropar/Ludhiana	**1x125 MVAR (420 kV) Bus Reactor at Koldam(NTPC) S/s (1-Ph units along with one spare unit)** • **125 MVAR, 420 kV Bus Reactor – 1 No.** • **400 kV Bus Reactor bay – 1 No.**

Sl. No.	Approved Scope of Transmission Scheme (As per 20th NCT)	Modified Transmission Scheme
	400 kV D/c line at Koldam(NTPC) S/s)	
4	Bypassing one ckt of Koldam(NTPC) – Ropar/Ludhiana 400 kV D/C line (Triple snowbird) at Koldam(NTPC) and connecting it with one of the circuit of **Pooling Station near Koldam (GIS)**– Koldam(NTPC) 400 kV D/c line (Triple snowbird), thus forming **Pooling Station near Koldam** – Ropar/ Ludhiana one line (Triple snowbird)	**-To be Deleted -**
	Estimated Cost : Rs 305 Cr	**Estimated Cost : Rs 242 Cr**

3.2 Transmission system for evacuation of power from Shongtong Karcham HEP (450 MW) and Tidong HEP (150 MW)

3.2.1 MoP vide Gazette Notification dated 13.04.2023 has notified the transmission scheme "Transmission system for evacuation of power from Shongtong Karcham HEP (450 MW) and Tidong HEP (150 MW)". The scheme was agreed in two phases and the broad scope of the transmission scheme is as follows:

Phase I (with Tidong HEP (150 MW): 1st July, 2026)-

(i) Establishment of 2x315 MVA (7x105 MVA 1-ph units including a spare unit) 400/220 kV GIS Pooling Station at Jhangi

(ii) 400 kV Jhangi PS – Wangtoo D/c line

Phase-II (with Shongtong HEP (450 MW): 31st July, 2026)-

(i) LILO of one circuit of Jhangi PS – Wangtoo 400 kV D/c (Quad) at Shongtong HEP Switchyard

(ii) Panchkula- Point PW** 400 kV D/c (twin HTLS) along with 80 MVAr switchable line reactor at Panchkula end on each circuit

(iii) Point PW** – Wangtoo (HPPTCL) 400 kV D/c line (Quad)

** Point PW : First point of 2000 m altitude of Panchkula-Wangtoo line from Panchkula end

3.2.2 Bidders and EPTA have been requesting to increase the implementation timeframe of the scheme from 24 months to 36-40 months, stating that only 6-7 months working period is available in a year, hilly terrain, logistics issue, forest clearance required for sub-station land etc.

3.2.3 The matter had been deliberated by CEA with BPC, CTUIL and HPPTCL and further by BPC with the prospective bidders, HPPTCL and CTUIL. HPPTCL had informed that the working period is about 10 months in a year and regarding logistics issues in transportation of heavy equipments, it was informed that strengthening of road may be required at 1-2 locations which can be done in association with State PWD as had been done for transportation of equipments for Wangtoo sub-station (commissioned) of HPPTCL which lies in the same area.

3.2.4 As per HPM Division, CEA, the latest commissioning schedule of Tidong HEP is October, 2025 and that of Shongtong HEP is February, 2027.

3.2.5 Considering the request of prospective bidders and urgency of the transmission scheme for evacuation of power from associated Hydro projects, the implementation time frame of the transmission scheme had been extended from given schedule (July'26) months to 30 months from SPV transfer and the same had been conveyed to BPC vide email dated 19.08.2024. It was also mentioned that upon commissioning, Tidong HEP shall use intra- state transmission system for evacuation of power, till availability of above ISTS system.

3.2.6 NCT noted the same.

3.3 **Time extension for Communication Scheme "Requirement of additional FOTE of STM-16 capacity at Bhuj-II substation to cater connectivity of RE Gencos" approved in 14th NCT**

3.3.1 Representative of CTUIL stated that the communication scheme "*Requirement of additional FOTE of STM-16 capacity at Bhuj-II substation to cater connectivity of RE Gencos*" was approved in 14th NCT meeting and allocated to M/s Powergrid Bhuj Transmission Limited (PBTL) for implementation vide NCT letter dated 07.07.2023. Implementation Time frame for the scheme was 12 months from the date of allocation i.e upto 06.07.2024 and Implementation mode was RTM.

3.3.2 M/s PBTL approached the CERC for a grant of the separate transmission licence towards the implementation of the subject communication scheme through the Petition no 44/TL/2024 during the month of January, 2024. CERC gave its order on 10th July 2024 on the petition filed by M/s PBTL. As the implementation time of the subject communication scheme is 12 months from the date of allocation by the NCT, i.e., up to 06.07.2024 was already expired, CERC directed the CTUIL to communicate the implementation schedule to M/s PBTL, keeping in view the timeframe of requirement of the subject scheme. Further, M/s PBTL vide their letter dtd 06.08.2024 requested CTUIL for new Implementation schedule of the subject Communication scheme.

3.3.3 Representative of CTUIL further informed that from the M/S PBTL petition in January'24 to CERC order dtd 10/07/24 period of approximate six months lapsed and that much extension may be provided to PBTL.

3.3.4 NCT opined that TSPs should immediately approach CERC for grant of licence. In this case, the scheme was awarded in July, 2023, but the TSP approached CERC in January, 2024.

3.3.5 After deliberations, NCT approved time extension for the Communication Scheme "Requirement of additional FOTE of STM-16 capacity at Bhuj-II substation to cater connectivity of RE Gencos" approved in 14th NCT as below:

Name of Scheme: Requirement of additional FOTE of STM-16 capacity at Bhuj-II substation to cater connectivity of RE Gencos.			
S. No.	**Items**	**Present**	**Revised**
1.	Implementation timeframe	**12 months** from the date of allocation	**18 months** from the date of allocation i.e.07.07.23

4 New Transmission Schemes:

4.1 Transmission System for supply of power to Green Hydrogen/Ammonia manufacturing potential in Mundra area of Gujarat under Phase-I: Part B1 scheme (3 GW at Navinal S/s)

4.1.1 Representative of CTUIL stated that Navinal (Mundra) (GIS) S/s is already under bidding for supply of 3000 MW power to Bulk consumers and for meeting 1500 MW demand for Green Hydrogen/Ammonia projects. The proposed scheme is for meeting additional 3000 MW drawal requirement of Green Hydrogen/Ammonia projects (cumulative upto 4500 MW in Mundra area) at Navinal (Mundra) (GIS) S/s.

4.1.2 Representative of MNRE informed that electricity demand on account of green Hydrogen/Green Ammonia production in Mundra would be 22 GW by 2030 as given below:

Year	**Cumulative Electricity Demand (MW)**
by 2026-27	2000
by 2027-28	8000
by 2028-29	16000
by 2029-30	22000

4.1.3 As per the direction of NCT in the 21st meeting, the transmission scheme was reviewed in a meeting between CEA, CTUIL and Grid-India on 14.08.2024.

4.1.4 CTUIL informed that application has not been received from any Green Hydrogen/Green Ammonia manufacturer for drawal of power from Navinal S/s.

T. C

4.1.5 Chairman, NCT requested MNRE to take up the matter with the prospective Green Hydrogen/Green Ammonia manufacturers in the Navinal area to submit application to CTUIL under GNA Regulations, 2022 for drawal of power.

4.1.6 Space provision has been kept at Navinal-I S/s for 2 Nos. STATCOM (±300 MVAR) along with MSC (2x125 MVAr) & MSR (1x125 MVAr) (with associated bays). It was agreed that STATCOM at Navinal-I S/s may be installed commensurate with available space i.e. 1 No. ±300MVAr STATCOM along with MSC (2x125 MVAr) & MSR (1x125 MVAr) each at Navinal (Mundra) (GIS) 400 kV Bus section-I & 400 kV Bus section-II.

4.1.7 CMD, Grid-India stated that the following clauses are specified in CEA, Technical Standards for Connectivity to the Grid, Regulations regarding reactive power management by the bulk consumers:

"

(i) The distribution licensee and bulk consumer shall provide adequate reactive compensation to compensate reactive power requirement in their system so that they do not depend upon the grid for reactive power support.

(ii) The power factor for distribution system and bulk consumer shall be within ± 0.95.

"

He further stated that the billing for the bulk consumers connected at distribution level is on kVAh drawl in place of kWh. Accordingly, at the distribution level, the average tariff for operating at 0.95 power factor comes to around Rs. 7.50/kVAh compared an average tariff of around Rs. 7/kVAh at unity power factor. This additional tariff of 50 paise/kVAh acts as a deterrent for leaning on the grid for reactive power requirements.

However, at the ISTS level, the reactive energy charge specified by CERC in IEGC 2023 to discourage the VAR drawl by regional entities is only 5 paise/kVArh which is on a lower side. These bulk consumers may, therefore, lean on the grid for their reactive power requirements. Addressing the same may require providing excessive reactive power compensation at the ISTS level which is not desirable.

Therefore, there is an urgent requirement of reviewing the above-mentioned provisions in CEA Connectivity Standards as well as the reactive energy charges in IEGC 2023. Further, till the amendment in above provisions, it is suggested that suitable reactive power compensation may be planned at all such ISTS stations being planned for feeding bulk green hydrogen / electrolyzer load.

4.1.8 NCT opined that Bulk Consumers, Green Hydrogen/Green Ammonia manufacturers should not depend on the grid for reactive power requirement and exchange of reactive power with the grid should be minimal. NCT directed CEA, CTUIL and Grid India to jointly review the requirement of reactive power by Bulk Consumer/ Green Hydrogen/Ammonia projects from the Grid. The suggestions would be taken up for amendment in the Central Electricity Authority (Technical Standards for connectivity to the Grid).

T.C

4.1.9 After deliberations, NCT recommended Transmission system for supply of power to Green Hydrogen/Ammonia manufacturing potential in Mundra area of Gujarat under Phase-I: Part B1 scheme (3 GW at Navinal S/s)" as mentioned below:

4.1.9.1 Summary of the scheme is given below:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Cr)	Remarks
1.	Transmission system for supply of power to Green Hydrogen/Ammonia manufacturing potential in Mundra area of Gujarat under Phase-I: Part B1 scheme (3 GW at Navinal S/s)" Tentative implementation timeframe: 36 Months from date of allocation to implementing agency	₹ 2817 Cr	Recommended under TBCB route with PFCCL as BPC

4.1.9.2 Detailed scope of the scheme is given below:

Sl. No.	Scope of the Transmission Scheme	Capacity/line length km
1.	Augmentation of Transformation capacity at 765/400 kV Navinal(Mundra) S/s (GIS) by 2x1500 MVA ICTs along with 2x330 MVAR, 765 kV & 2x125MVAr, 420 kV bus reactors on Bus Section-II and 1x125MVAr, 420 kV bus reactor on Bus Section-I. This will involve creation of 765 kV & 400 kV Bus Sections 2 through sectionalization arrangement. The 400 kV and 765 kV Sectionaliser shall be normally closed.	Creation of New 765 kV & 400 kV Bus Section-II 765 kV Sectionaliser – 1 Set 400 kV Sectionaliser – 1 set 765/400 kV, 1500 MVA ICT-2 Nos. (on Sec-II) 765 kV ICT bays- 2 Nos. (on Sec-II) 400 kV ICT bays- 2 Nos. (on Sec-II) 330 MVAR 765 kV bus reactor-2 Nos. (Sec-II) 125 MVAR 420 kV bus reactor-3 Nos. (1 no. on Sec-I & 2 Nos. on Sec-II) 765 kV reactor bay- 2 Nos. (Sec-II) 400 kV reactor bay- 3 Nos. (1 no. on Sec-I & 2 Nos. on Sec-II)
2.	Navinal(Mundra) (GIS) – Bhuj 765 kV D/c line	70 km
3.	765 kV line bays at each end of Navinal(Mundra) (GIS) – Bhuj 765 kV D/c line	765 kV line bays-2 Nos. (AIS) (for Bhuj end)

T.C

Sl. No.	Scope of the Transmission Scheme	Capacity/line length km
		765 kV line bays-2 Nos. (GIS) (for Navinal (Mundra) end) (on Sec-II)
4.	±300MVAr STATCOM along with 2x125MVAr MSC & 1x125MVAr MSR at Navinal(Mundra) (GIS) 400 kV Bus section-I	• ±300MVAr STATCOM along with 2x125MVAr MSC & 1x125MVAr MSR • 400 kV bay – 1 no.
5.	±300MVAr STATCOM along with 2x125MVAr MSC & 1x125MVAr MSR at Navinal(Mundra) (GIS) 400 kV Bus section-II	• ±300MVAr STATCOM along with 2x125MVAr MSC & 1x125MVAr MSR • 400 kV bay – 1 no.

Note:

(1) Wherever required, TSP shall implement complete Dia consisting of 2 Main Bays & 1 Tie Bay required for completion of diameter (GIS) in one-and-half breaker scheme.

(2) TSP of Navinal (Mundra) S/s shall provide space for scope of work at Sl. 1,2, 3 (for Navinal end), 4 & 5 above.

(3) TSP of Bhuj PS shall provide space for scope of work at Sl. 3 (for Bhuj end) above.

4.2 **Transmission System of power to Green Hydrogen/Ammonia manufacturing potential in Mundra area of Gujarat under Phase-I: Part B2 scheme (7.5 GW at Navinal-II S/s)**

4.2.1 Representative of CTUIL stated that the proposed transmission scheme is for additional 7,500 MW drawal requirement of Green Hydrogen/Ammonia projects (i.e. cumulative for upto 12,000 MW in Mundra area), which is planned to be accommodated at Navinal-II (Mundra) (GIS) S/s.

4.2.2 He also mentioned that presently no application for drawal of power at Navinal S/s from Green Hydrogen/Ammonia manufacturers has been received under GNA Regulations, 2022.

4.2.3 After deliberations, NCT decided that initial applications for drawal of power at Navinal from Green Hydrogen/Ammonia manufacturers would be accommodated at Navinal-I S/s (cumulative upto 4.5 GW). Therefore, this scheme may be deferred at present and would be taken up for deliberation subsequently based on receipt of applications from Green Hydrogen/Ammonia manufacturers at Navinal-I S/s.

4.2.4 NCT also directed CEA, CTUIL and Grid-India to review the reactive compensation requirement at Navinal II,

4.3 **Eastern Region Expansion Scheme-43 (ERES-43)**

4.3.1 Representative of CTUIL stated that Eastern Region (ER) predominantly has thermal generations. During the peak solar hours in neighbouring regions of ER, backing

down of thermal generations takes place in ER. Under such scenario, constraints are being observed on Kahalgaon (NTPC) – Farakka (NTPC) 400 kV D/c line and Talcher (NTPC) – Meramundali (OPTCL) 400 kV D/c line (one circuit LILOed at Angul and subsequently bypassed) under N-1.

4.3.2 He further informed that Kahalgaon – Farakka 400 kV D/c line has thermal limit of about 850 MVA/ckt. During the peak solar generation hours, the line loading is observed to be about 650MW/ckt, which violates thermal limit under N-1. Further, during high thermal generation at Talcher along with power transfer constraints in Talcher – Kolar HVDC, N-1 violation is observed on the Talcher – Meramundali 400 kV D/c line.

4.3.3 On a query about ownership of terminal bay equipment, representative of CTUIL stated that both NTPC and OPTCL have requested that upgradation of bay equipment at their ends should be done under ISTS as the lines are ISTS and the reconductoring requirement is to cater to ISTS power transfer requirement.

4.3.4 CTU also informed that keeping in view urgent requirement of the scheme, the implementation timeframe of the scheme has been planned as 18 months with best effort basis schedule as 15 months in consultation with all stakeholders including ISTS licensee owning the lines (viz. POWERGRID).

4.3.5 After deliberations, NCT approved the scheme "Eastern Region Expansion Scheme-43 (ERES-43)" under RTM route as mentioned below

4.3.5.1 Summary of the scheme is given below:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
1.	Eastern Region Expansion Scheme-43 (ERES-43) Implementation timeframe: 18 Months (15 months on best effort basis)	₹ 310.28 Cr	Approved under RTM route through POWERGRID.

4.3.5.2 Detailed scope of the scheme is given below:

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.
1.	Reconductoring of Kahalgaon (NTPC) – Farakka (NTPC) 400 kV D/c (Twin Moose) line with Twin HTLS conductor (with ampacity of single HTLS as 1228A)	190 ckm
2.	Reconductoring of Talcher (NTPC) – Meramundali (OPTCL) 400 kV D/c (Twin Moose) line (one circuit via Angul and bypassed at Angul) with Twin HTLS conductor (with ampacity of single HTLS as 1228A)	140 ckm
3.	Upgradation of associated 400 kV bay equipment at Kahalgaon (NTPC)	Associated bay equipment with line capacity 3150 A (as per standard equipment rating).
4.	Upgradation of associated 400 kV bay equipment at Farakka (NTPC)	Associated bay equipment with line capacity 3150 A (as per

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.
		standard equipment rating).
5.	Upgradation of associated 400 kV bay equipment at Talcher (NTPC)	Associated bay equipment with line capacity 3150 A (as per standard equipment rating).
6.	Upgradation of associated 400 kV bay equipment at Meramundali (OPTCL)	Associated bay equipment with line capacity 3150 A (as per standard equipment rating).

Note:

(a) NTPC and OPTCL to provide unconditional access to the ISTS licensee for upgradation of identified bay equipment at their respective substation / generation switchyard. The equipment released after replacement shall be handed over to NTPC and OPTCL on as is where is basis by the ISTS licensee.

(b) NTPC has already awarded R&M works for diameter 19-20-21 and 22-23-24 for some bay equipment at Farakka switchyard. Further, at Kahalgaon switchyard, R&M for some equipment of diameter 31-32-33 has also been awarded. ISTS licensee needs to coordinate with NTPC for replacement of balance equipment at Farakka and Kahalgaon switchyards as identified from Annexure-VII and Annexure-VIII (comprising of SLD and bay equipment details) respectively of the minutes of the 31st CMETS-ER.

(c) ISTS licensee needs to coordinate with NTPC and OPTCL for replacement of equipment at Talcher switchyard and Meramundali S/s respectively as identified from Annexure-V and Annexure-VI respectively (comprising of SLD and bay equipment details) of the minutes of the 31st CMETS-ER.

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4.4 Transmission system to provide redundant power supply to Dholera area

4.4.1 Representative of CTUIL stated that GETCO vide letter dated 22.07.2024, has requested to provide power supply to semiconductor manufacturing industries in Dholera SIR area, GETCO has already established 220/33 kV Dholera S/s along with Panchham – Dholera 400 kV D/c line (presently charged at 220 kV level). To provide a redundant (2nd) power source, GETCO has proposed ISTS connectivity from Vataman substation in January, 2026 time-frame, for drawal of 150-200 MW at the new proposed Dholera-2 S/s of GETCO (about 30-35 km from Vataman).

4.4.2 In this respect, it may be noted that 765 kV Vataman Switching Substation is under implementation by M/s Vataman Transmission Limited (a subsidiary of POWERGRID) under Khavda Phase-III scheme with an SCOD of Dec'25.

4.4.3 2x1500 MVA, 765/400 kV ICTs and 2 Nos. 400 kV bays at Vataman S/s have already been discussed and recommended in the 20th NCT meeting on 25.06.2024 for evacuation of power from offshore wind projects in Gujarat (being pooled at Mahuva Onshore PS) in March, 2029 time-frame, matching with commissioning of offshore wind projects. MoP vide OM dated 20.08.2024 has awarded the transmission system for 500 MW offshore wind in Gujarat to CTUIL for their implementation under RTM mode by POWERGRID. CTUIL vide letter dated 20.08.2024 to POWERGRID forwarded MoP's referred OM and informed regarding allocation of the offshore 500 MW Scheme under RTM mode.

4.4.4 Representative from CTUIL mentioned that the proposed interconnection of Vataman S/s (ISTS) with 220 kV Dholera-2 S/s of GETCO would require preponement of 2x1500 MVA, 765/400 kV ICTs (agreed for offshore wind projects), from March 2029 to an earlier time-frame as well as installation of 2x500 MVA, 400/220 kV ICTs and 2 Nos. 220 kV line bays at Vataman S/s.

4.4.5 After deliberations, NCT approved the change in timeframe of one of the elements in the scope of "Transmission system for offshore wind zone phase -1 (500 MW VGF off coast of Gujarat for subzone B3)" scheme as follows:

Scope	Earlier timeline	Revised timeline
Creation of 400 kV switchyard along with Installation of 2x1500 MVA, 765/400 kV ICTs at Vataman (AIS) with 2x125 MVAr (420 kV) Bus Reactors • 765/400 kV, 1500 MVA, ICTs – 2 Nos. (7x500MVA incl. spare unit) • 765 kV ICT bays – 2 nos. • 400 kV ICT bays – 2 nos. • 125 MVAR, 420 kV Bus Reactor – 2 Nos. • 400 kV Bus Reactor bay – 2 Nos.	**March-2029**	**18 Months**

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The MoP OM No. 15/3/2018-Trans-Part (1) dated 20.08.2024 would also need to be revised accordingly.

4.4.6 NCT further approved the scheme "Additional Transmission System Proposed for redundant power supply to Dholera area" under RTM route as mentioned below:

4.4.6.1 Summary of the scheme is given below:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
1.	Additional Transmission System Proposed for redundant power supply to Dholera area Implementation timeframe: 18 Months matching with creation of 400 kV switchyard along with Installation of 2x1500 MVA, 765/400 kV ICTs at Vataman (AIS) S/s being implemented under "Transmission system for offshore wind zone phase -1 (500 MW VGF off coast of Gujarat for subzone B3)" scheme.	₹ 110 Cr	Approved under RTM route to POWERGRID.

4.4.6.2 Detailed scope of the scheme is given below:

Sl. No.	Scope of the Transmission Scheme	Capacity (MVA) / Line length (km)/ Nos.
1.	Creation of 220 kV switchyard along with Installation of 2x500 MVA, 400/220 kV ICTs at Vataman (AIS)	• 400/220 kV, 500 MVA, ICTs – 2 Nos. • 400 kV ICT bays – 2 Nos. • 220 kV ICT bays – 2 Nos.
2.	2 Nos. 220 kV line bays for Vataman – Dholera-2 (GETCO) 220 kV D/c line	• 220 kV line bays – 2 Nos.
	Note: 1. *GETCO shall implement Vataman – Dholera-2(GETCO) 220 kV D/c line in matching time-frame* 2. *TSP of Vataman S/s shall provide space for the associated works at Vataman S/s*	

4.5 **Transmission System for Integration of Kurnool-IV REZ - Phase-I (for 4.5 GW)**

4.5.1 Representative of CTUIL stated that a comprehensive transmission system for integration of 51 GW RE Potential in Andhra Pradesh have been identified by CEA and a report on Transmission System for Integration of over 500 GW RE Capacity has been published by CEA on 07.12.2022. Presently, Connectivity of about 7,740 MW (2390 MW at 220 kV level & 5,350 MW at 400 kV level) has been granted / agreed for grant at Kurnool-III PS and is closed for further grant of Connectivity.

4.5.2 CTUIL informed that applications for grant of connectivity for 4,750 MW at Kurnool -IV have been received, out of which about 3,200 MW applications is considered at

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400 kV level from PSPs generation projects. Remaining 1,530 MW (RE) connectivity applications are considered at 220 kV level.

4.5.3 He further stated that Transmission System for Integration of Kurnool-IV REZ is proposed for 7.5 GW total capacity, which have been bifurcated in two phases for implementation depending of receipt of Connectivity applications. The present transmission scheme is proposed under Phase-I, the details are mentioned as below:

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
1.	Establishment of 4x1500 MVA, 765/400 & 4x500 MVA, 400/220 kV Kurnool-IV Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Kurnool-IV PS with provision of two (2) sections of 4500 MVA each at 400 kV level **Future Space Provisions:** • 765/400 kV, 1500 MVA, ICTs – 2 Nos. • 765 kV ICT bays – 2 nos. • 400 kV ICT bays – 2 nos. • 400/220 kV, 500 MVA, ICTs – 14 nos. • 400 kV ICT bays – 14 nos. • 220 kV ICT bays – 14 nos. • 765 kV line bays – 8 Nos. (with provision for SLR) • 400 kV line bays – 12 Nos. (with provision for SLR) • 220 kV line bays – 20 nos. • 220 kV Bus Sectionalizer : 2 sets • 220 kV Bus Coupler (BC) Bay – 2 nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 nos. • 400 kV Bus Sectionalizer : 1 set	• 765/400 kV, 1500 MVA, ICTs – 4 Nos. (13x500 MVA incl. 1 spare unit) • 765 kV ICT bays – 4 nos. • 400 kV ICT bays – 4 nos. • 400/220 kV, 500 MVA, ICTs – 4 nos. • 400 kV ICT bays – 4 nos. • 220 kV ICT bays – 4 nos. • 765 kV line bays – 4 Nos. (at Kurnool-IV PS for termination of Kurnool-IV – Bidar and Kurnool-IV – Kurnool-III 765 kV D/c lines) • 765 kV, 330 MVAr Bus Reactor – 2 Nos. • 765 kV Bus Reactor bays – 2 nos. • 220 kV line bays – 6 nos. • 220 kV Bus Sectionalizer : 1 set • 220 kV Bus Coupler (BC) Bay – 2 nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 nos.
2.	Kurnool-IV – Bidar 765 kV D/c line (about 330 kms) with 330 MVAR SLR (convertible) at both ends on both circuits	~ 330 km • 765 kV line bays – 2 Nos. (at Bidar PS) • 765 kV, 330 MVAr SLR at Kurnool-IV PS – 2 Nos. (7x110 MVAr inc. 1 switchable spare unit for both bus reactor and line reactor) • 765 kV, 330 MVAr SLR at Bidar PS – 2 Nos. (7x110 MVAr inc. 1 switchable spare unit)
3.	Kurnool-IV – Kurnool-III PS 765 kV D/c line (about 150 kms) with 240 MVAR SLR (convertible) at Kurnool-IV end on both circuits	~ 150 km • 765 kV line bays – 2 Nos. (at Kurnool-III PS) • 765 kV, 240 MVAr SLR at Kurnool-IV

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Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
		PS – 2 Nos. (7x80 MVAr inc. 1 switchable spare unit)
4.	± 300 MVAR STATCOM at Kurnool-IV PS along with 2x125 MVAr MSR	• 400 kV bay – 1 no.
5.	Augmentation of 1x1500 MVA, 765/400 kV ICT (3rd) at C'Peta	• 765/400 kV, 1500 MVA, ICT – 1 no. • 765 kV ICT bays – 1 no. • 400 kV ICT bays – 1 no.
6.	LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta (about 20 kms)	~ 20 km • 400 kV line bays – 4 Nos. (at C'Peta for termination of LILO of Vijayawada-Nellore 400 kV D/c line at C'Peta)

4.5.4 It was informed that SRPC has approved the transmission scheme during the meeting held on 03.08.2024, however subsequently APTRANSCO have submitted its views that the Kurnool-IV – Bidar 765 kV D/c line is very long line (about 330 km) and it would be advisable to provide anchoring at a suitable location in Telangana for full utilisation of the capacity of the line.

4.5.5 CMD, Grid-India stated that few inter-regional lines such as 765 kV Bidar – Parli D/C and 765 kV Angul/Gopalpur – Srikakulam D/C line were also agreed in the joint study meeting. It is suggested that the same may also be brought up for discussion in NCT at the earliest. This will help in avoiding any possible constraints in export of RE power from SR.

4.5.6 NCT opined that a comprehensive plan for evacuation of power from RE potential in Kurnool-IV RE Zone should be prepared and put up in the next meeting of NCT

4.6 Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)

4.6.1 Representative of CTUIL stated that a comprehensive transmission system for integration of 51 GW RE Potential in Andhra Pradesh have been identified by CEA and a report on Transmission System for Integration of over 500 GW RE Capacity has been published by CEA on 07.12.2022.

4.6.2 CTUIL informed that connectivity applications of about 3.5 GW have been received at Anantapur-II out of which 2.5 GW is at 220 kV level and 1 GW is at 400 kV level. It was also informed that SRPC in its meeting held on 03.08.2024 have approved the transmission scheme.

4.6.3 After deliberations, NCT recommended transmission scheme "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW) under TBCB with implementation time frame of 24 months and estimated cost of ₹4679 Cr.

4.6.3.1 Summary of the scheme is given below:

SI No.	**Name of the scheme and tentative implementation timeframe**	**Estimated Cost (₹Cr)**	**Remarks**

1.	Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW) Tentative implementation timeframe: 24 months from date of allocation to implementing agency	₹ 4679 Cr	Recommended Under TBCB route with PFCCL as BPC

4.6.3.2 Detailed scope of the scheme is given below:

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
1.	Establishment of 4x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level Future Space Provisions: • 765/400 kV, 1500 MVA, ICTs – 2 Nos. • 765 kV ICT bays – 2 nos. • 400 kV ICT bays – 2 nos. • 400/220 kV, 500 MVA, ICTs – 12 nos. • 400 kV ICT bays – 12 nos. • 220 kV ICT bays – 12 nos. • 765 kV line bays – 8 Nos. (with provision for SLR) • 400 kV line bays – 12 Nos. (with provision for SLR) • 220 kV line bays – 20 nos. • 220 kV Bus Sectionalizer : 2 sets • 220 kV Bus Coupler (BC) Bay – 2 nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 nos. • 400 kV Bus Sectionalizer : 1 set	• 765/400 kV, 1500 MVA, ICTs – 4 Nos. (13x500 MVA incl. 1 spare unit) • 765 kV ICT bays – 4 nos. • 400 kV ICT bays – 4 nos. • 400/220 kV, 500 MVA, ICTs – 6 nos. • 400 kV ICT bays – 6 nos. • 220 kV ICT bays – 6 nos. • 765 kV line bays – 4 Nos. (at Ananthapuram-II PS for termination of Ananthapuram-II – Davanagere and Ananthapuram-II – Cuddapah 765 kV D/c lines) • 765 kV, 330 MVAr Bus Reactor – 2 Nos. • 765 kV Bus Reactor bays – 2 nos. • 220 kV line bays – 6 nos. • 220 kV Bus Sectionalizer : 1 set • 220 kV Bus Coupler (BC) Bay – 2 no. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 no.
2.	Ananthapuram-II – Davangere 765 kV D/c line (about 150km) with 240 MVAR SLR (convertible) at Ananthapuram-II end on both circuits	~ 150 km • 765 kV line bays – 2 Nos. (at Davanagere PS) • 765 kV, 240 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x80 MVAr inc. 1 switchable spare unit)
3.	Ananthapuram-II – Cuddapah 765 kV D/c line (about 200km) with 330 MVAR SLR (convertible) at Ananthapuram-II end on both circuits	~ 200 km • 765 kV line bays – 2 Nos. (at Cuddapah) • 765 kV, 330 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x110 MVAr inc. 1 switchable spare unit for both bus reactor and line reactor)

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Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
4.	±300 MVAR STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR	• 400 kV bay – 1 no.

Note:

i. POWERGRID shall provide space for 2 Nos. of 765 kV line bays at Cuddapah for termination of Ananthapuram-II PS – Cuddapah 765 kV D/c line

ii. Developer of Davanagere PS shall provide space for 2 Nos. of 765 kV line bays at Davanagere PS for termination of Ananthapuram-II PS – Davanagere 765 kV D/c line

4.7 Transmission system for proposed Green Hydrogen / Green Ammonia projects in Tuticorin area

4.7.1 Representative of CTUIL informed that as per the Communication from MNRE about 7000 MW demand has been envisaged for the Green Hydrogen/ Green Ammonia projects in Tuticorin area. The details of the phased development are as follows:

Year	Cumulative Electricity Demand (MW)
by 2027	2900
by 2028	2900
by 2029	5645
by 2030	7015

4.7.2 He further informed that GNA applications for 2460 MW have been received as bulk consumers from M/s AM Green Ammonia (India) Pvt. Ltd. (1660 MW with start date as Dec,2026) and Green Infra Renewable Energy Farms Pvt. Ltd. (800 MW with start dated as Dec, 2028).

4.7.3 NCT opined that the gestation period of Green Hydrogen/Green Ammonia plants is about 30-36 months, hence, implementation timeframe of the transmission scheme may be considered as 30 months.

4.7.4 On a query about views of Sothern Region Constituents/SRPC on the proposed transmission system, CTUIL informed that the transmission system was agreed for technical requirements during the SRPC meeting held on 03.08.2024. However, TANGEDCO during the SRPC meeting have raised certain objections regarding grant of GNA by CTUIL to Green Hydrogen / Green Ammonia as bulk consumers without these manufacturers being a consumer of the concerned Distribution licensee as per the provisions of Electricity Act, 2003. CTUIL representative further informed that during SRPC meeting, it was clarified that CTUIL is processing the applications and granting GNA in accordance with the CERC GNA Regulations.

4.7.5 During NCT meeting, CTU representative submitted that they are processing the applications and granting GNA to Green Hydrogen / Green Ammonia project developers as bulk consumers under CERC GNA Regulations. In case of any conflict regarding grant of GNA to bulk consumers between CERC GNA Regulations, 2022 and Electricity Act, 2003, the matter may be taken-up with CERC by TANGEDCO.

4.7.6 After deliberations, NCT recommended the transmission scheme "Transmission system for proposed Green Hydrogen / Green Ammonia projects in Tuticorin area" under TBCB route with implementation time frame of 30 months and estimated cost of ₹ 2617 Cr.

4.7.6.1 Summary of the scheme is given below:

SI No.	**Name of the scheme and tentative implementation timeframe**	**Estimated Cost (₹Cr)**	**Remarks**
1.	Transmission system for proposed Green Hydrogen / Green Ammonia projects in Tuticorin area) Tentative implementation timeframe: 30 months from date of allocation to implementing agency	₹ 2617 Cr	Recommended Under TBCB route with RECPDCL as BPC

4.7.6.2 Detailed scope of the scheme is given below:

Sl. No.	***Scope of the Transmission Scheme***	***Capacity /km***
1.	Establishment of 3x1500 MVA, 765/400 kV Tuticorin (GH) S/s with 1x240 MVAR bus Reactor	• 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit)

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Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
	Future Space Provisions: • 765/400 kV, 1500 MVA, ICTs – 3 Nos. • 765 kV ICT bays – 3 nos. • 400 kV ICT bays – 3 nos. • 765 kV line bays – 6 Nos. (with provision for SLR) • 400 kV line bays – 16 Nos. (with provision for SLR) • 400 kV Bus Sectionalizer : 1 set	• 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV line bays – 2 Nos. (at Tuticorin (GH) S/s for termination of Tuticorin (GH) – Tuticorin PS 765 kV D/c line) • 765 kV, 240 MVAr Bus Reactor – 1 No. (4x80 MVAr including 1 switchable spare unit) • 765 kV Bus Reactor bays – 1 No.
2.	Tuticorin PS – Tuticorin (GH) 765 kV D/c line	~ 50 km • 765 kV line bays – 2 Nos. (at Tuticorin PS)
3.	Upgradation of Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line (presently charged at 400 kV level) at its rated 765 kV voltage level with 1x330 MVAr switchable Line Reactor on both ends of each circuit	• 765 kV line bays Tuticorin PS – 2 Nos. • 765 kV, 330 MVAr SLR at Tuticorin PS – 2 Nos. (7x110 MVAr including 1 spare unit for both bus reactor and line reactor) • 765 kV line bays at Dharmapuri (Salem New) – 2 Nos. • 765 kV, 330 MVAr SLR at Dharmapuri (Salem New) – 2 Nos. (7x110 MVAr including 1 spare unit for both bus reactor and line reactor)
4.	Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Tuticorin PS – Dharmapuri (Salem New) 765 kV D/c line at Tuticorin PS & Dharmapuri (Salem New)	Approx. 1-2 km at each end
5.	Upgradation of Tuticorin PS to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVAr, 765 kV bus reactors **Future Space Provisions:** • 765/400 kV, 1500 MVA, ICTs – 1 no. • 765 kV ICT bays – 1 no. • 400 kV ICT bays – 1 no. • 765 kV line bays – 6 Nos. (with provision for SLR)	• 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV, 330 MVAr Bus Reactor – 1 No. • • 765 kV Bus Reactor bays – 1 No.
6.	Upgradation of Dharmapuri (Salem New)	• 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*
	to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVAr, 765 kV bus reactor **Future Space Provisions:** • 765/400 kV, 1500 MVA, ICTs – 1 no. • 765 kV ICT bays – 1 no. • 400 kV ICT bays – 1 no. • 765 kV line bays – 6 Nos. (with provision for SLR)	unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV, 330 MVAr Bus Reactor – 1 No. • 765 kV Bus Reactor bays – 1 No.
7.	400 kV line reactors on Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line shall be utilized as bus reactors at respective 400 kV substations based on availability of bays.	
8.	Upgradation of Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines (presently charged at 400 kV) to its rated voltage at 765 kV with 1x330 MVAr switchable Line Reactor on Dharmapuri (Salem New) end of each circuit	• 765 kV line bays at Dharmapuri (Salem New) – 2 Nos. • 765 kV, 330 MVAr SLR at Dharmapuri (Salem New) – 2 Nos. (6x110 MVAr switchable units) • 765 kV line bays at Madhugiri – 2 Nos.
9.	Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c line at Dharmapuri (Salem New) & Madhugiri	Approx. 1-2 km at each end
10.	400 kV line reactors on Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines shall be utilized as bus reactors at respective 400 kV substations based on availability of bays.	

Note:

i. POWERGRID shall provide space for upgradation of Tuticorin PS to its rated voltage level of 765 kV level

ii. POWERGRID shall provide space for upgradation of Dharmapuri (Salem New) to its rated voltage level of 765 kV level

iii. POWERGRID / TSP shall provide space for 2 Nos. of 765 kV line bays at Madhugiri 765 kV for termination of Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines

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4.8 Augmentation of transformation capacity by 3x500 MVA, 400/220 kV ICTs (6th - 8th) and 1x1500 MVA, 765/400 kV ICT (4th) at Bidar PS

4.8.1 Representative of CTUIL stated that presently, Bidar 765/400/220 kV PS is under implementation by POWERGRID through TBCB route and is likely to be commissioned by February '26. The broad scheme under implementation is as given below:

- Establishment of 765/400 kV 3x1500 MVA, 400/220 kV 5x500 MVA Bidar PS with 765 kV (1x240 MVAR) and 400 kV (1x125 MVAR) Bus Reactor
- Bidar PS – Maheshwaram (PG) 765 kV D/C line with 240 MVAr SLR at both ends of each circuit
- 220 kV line bays – 8 Nos.

4.8.2 He further mentioned that connectivity of about 2500 MW at 220 kV level have already been granted at Bidar PS with the above under implementation transmission system. Further, CTUIL has received additional connectivity applications for 600 MW seeking connectivity at Bidar PS. With this, the total connectivity quantum granted / under process at Bidar PS shall became about 3100 MW. However, Bidar PS is being implemented with 3x1500 MVA, 765/400 kV and 5x500 MVA, 400/220 kV ICTs. Therefore, grant of connectivity for additional 600 MW shall require augmentation of 1x1500 MVA,765/400 kV ICT (4th) and 3x500 MVA, 400/220 kV ICTs (6th - 8th) at Bidar PS to enable evacuation of power and satisfy N-1 criteria.

4.8.3 After deliberations, NCT approved the transmission scheme "Augmentation of transformation capacity by 3x500 MVA, 400/220 kV ICTs (6th - 8th) and 1x1500 MVA,765/400 kV ICT (4th) at Bidar PS" under TBCB route with implementation time frame progressively from 24 months to 30.06.2027 and estimated cost of ₹ 288 Cr.

4.8.3.1 Summary of the scheme is given below:

SI No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹Cr)	Remarks
1.	Augmentation of transformation capacity by 3x500 MVA, 400/220 kV ICTs (6th - 8th) and 1x1500 MVA,765/400 kV ICT (4th) at Bidar PS Tentative implementation timeframe: progressively from 24 months to 30.06.2027	₹ 288 Cr	Approved Under TBCB route with RECPDCL as BPC

4.8.3.2 Detailed scope of the scheme is given below:

Sl. No.	*Scope of the Transmission Scheme*	*Capacity /km*	*Schedule*	*Est. Cost (crs.)*
1	Augmentation of transformation capacity of 1x1500 MVA (4th), 765/400 kV ICT at Bidar PS	• 1x1500 MVA, 765/400 kV ICT • 765 kV ICT bay – 1 No. • 400 kV ICT bay – 1 No.	24 months	276
2	Augmentation of transformation capacity by 3x500 MVA, 400/220 kV ICTs (6th – 8th) at Bidar PS	• 3x500 MVA, 400/220 kV ICTs • 400 kV ICT bay – 3 Nos. • 220 kV ICT bay – 3 Nos.	24 months	
3	1 no. of 220 kV line bay at Bidar PS for termination of dedicated transmission lines of M/s Quest Hybren Pvt. Ltd.	• 220 kV line bay – 1 No.	30.06.27	12
	1 no. of 220 kV line bay at Bidar PS for termination of dedicated transmission lines of M/s Pulse Hybren Pvt. Ltd.	• 220 kV line bay – 1 No.	31.05.27	
			Total Cost	**288**

Note :

i. POWERGRID shall provide space for implementation of above works at Bidar PS.

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4.9 Scheme for Requirement of Additional FOTE for redundancy at AGC locations in NER: Revised

4.9.1 Representative of CTUIL stated that the additional FOTE scheme for AGC locations Loktak and Bongaigaon was deliberated in 25th NETeST meeting held on 25.05.2023 wherein the members agreed for the same. This scheme was thereafter discussed and reviewed in 24th TCC & NERPC meeting and approved in 16th NCT meeting. He further mentioned that this revised scheme was put up for NERPC review in the 26th TCC and NERPC meeting held on 04.07.2024 and 05.07.2024 respectively wherein NERPC forum approved the scheme.

4.9.2 After deliberations, NCT approved the transmission Scheme "Scheme for Requirement of Additional FOTE for redundancy at AGC locations in NER: Revised" under RTM mode:

4.9.2.1 Summary of the scheme is given below:

SI No.	Name of the scheme and tentative implementation timeframe	Estimated Cost	Remarks
1.	Scheme for Requirement of Additional FOTE for redundancy at AGC locations in NER: Revised Tentative implementation timeframe: 6 months from the date of allocation	₹ 90 Lakh	Approved Under RTM route through POWERGRID

4.9.2.2 Detailed scope of the scheme is given below:

S.No	Scope of the Transmission Scheme
1.	Requirement of three Nos. STM-16 FOTE at AGC locations of North Eastern Region for redundancy

SI No.	Name	Required FOTE as per input provided by POWERGRID/ISGS (Qty in No.)	Remark
1	Loktak	0	Already approved in 16th NCT
2	Bongaigaon	0	Already approved in 16th NCT
3	Kopili	0	NERLDC suggested additional stations for AGC in 4th CPM, already available
4	Khandong	0	
5	Kathalguri	0	

	6	Kopili Stage-2	0	
	7	Doyang HEP (NTPC+NEEPCO)	1	
	8	Kameng (NEEPCO)	0	NERLDC suggested additional stations for AGC in 26th NE TeST, already available
	9	Pallatana (OTPC)	1	NERLDC suggested additional stations for AGC in 26th NE TeST
	10	Lower Subansiri (NHPC)	1	NERLDC suggested additional stations for AGC in 26th NE TeST, Upcoming Plant
	Total FOTE quantity required in this scheme		**03**	

4.10 **Optical Fibre Connectivity for NLDC new building, August Kranti Marg, New Delhi**

4.10.1 Representative of CTUIL stated that Grid-India has request to CTU for planning of fiber optic connectivity to the new building of National Load Dispatch Centre (NLDC) located at "Grand Rue" Ayur Vigyan Nagar, August Kranti Marg, New Delhi.

4.10.2 After deliberations, NCT approved the transmission Scheme "Optical Fibre Connectivity for NLDC new building, August Kranti Marg, New Delhi" under RTM mode:

4.10.2.1 Summary of the scheme is given below:

Sl No.	**Name of the scheme and tentative implementation timeframe**	**Estimated Cost (in Cr.)**	**Remarks**
1.	Optical Fibre Connectivity for NLDC new building, August Kranti Marg, New Delhi Tentative implementation timeframe: 12 months from the date of allocation	₹ 7.2 Cr	Approved Under RTM route through POWERGRID

4.10.2.2 Detailed scope of the scheme is given below:

S.No	**Scope of the Transmission Scheme**
1.	Supply and installation of (1x48F) Underground Optical Fibre for 35 kms including RoW charges, 3 no. of FOTE and 2 no. of 48V DCPS.

5 Status of the bids under process by BPCs

5.1.1 Both the Bid Process Coordinators [BPCs], i.e, PFCCL and RECPDCL made presentations on under bidding Inter State Transmission Schemes. Salient points of the discussion were as under:

5.1.2 Representative from PFCCL informed that total 27 schemes are under bidding process. Detailed summary of the schemes is as under:

S.N.	Region(s)	No. of projects under bidding
1.	SPV transferred	2
2.	LoI issued and SPV to be transferred	2 (SPV transfer expected by August, 2024)
3.	e-RA completed	3
4.	Bids Under Evaluation	4
5.	RfP issued and bids to be submitted	8
6.	RfP to be issued	7 (20th NCT & 21th NCT)
7.	RfP bid submission on hold	01
Total		**27**

5.1.3 Representative from RECPDCL informed that total 17 schemes are under bidding process. Detailed summary of the schemes is as under:

S.N.	Region(s)	Nos. of projects under bidding
1	Bidding Concluded	4
2	Bids Opened & Under Evaluation	1
3	Bids Under Evaluation	9
4	RfP to be issued	3
Total		**17**

5.1.4 Representative of CTUIL stated that in Rajasthan Ph-IV Part-2 (5.5 GW) scheme, it was agreed in the NCT meeting that all the packages Part A, B, C, D, E, F, H1, H2 to be aligned and awarded at same time. However, three packages Part F, H1 and H2 are not yet ready. In a meeting in MoP, it was directed to award remaining five packages (Part A, B, C, D, E, F,). This may be noted by NCT.

5.1.5 It was further mentioned that Part C & Part-E were transferred to the successful bidder on 19.08.2024 (REC), Part-A was transferred to the successful bidder on 21.08.2024 (REC) whereas Part B and Part D were transferred to the successful bidder on 22.08.2024 (PFC). CERC may raise the issue of 1-2 days mismatch in transfer of these schemes at the time of granting transmission license as the same issue had been highlighted earlier in two cases.

5.1.6 CTU stated that before SPV transfer they had informed both BPCs that all the packages (A to E) should have TSA signing/SPV transfer on same date as such SPV transfer on different dates for 5 packages may create natural timeline mismatch causing non-utilisation of transmission system due to its inter-dependency. This will also result in question of payment of transmission charges for period of mismatch. For

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example, it was informed that for Part-E package (765 kV Sirohi-Rishabdeo D/c line) [19/08/26], there is a requirement of Substation in Part-B (765/400 kV kV Sirohi S/s) [22/08/26] without which line under Part-E (765 kV Sirohi-Rishabdeo D/c line) can't be terminated & utilised.

5.1.7 CEA indicated that as per TSA condition, RLDC at the stage of commissioning, may take care of such minor mismatch as per the stipulated conditions.

5.1.8 After deliberations, NCT decided that RECPDCL may align its packages (Part-A,C & E) to Part-B &D package i.e. 22/08/24.

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Summary of the deliberations of the 22nd meeting of NCT held on 23rd August, 2024

I. Modification in the earlier approved/notified transmission schemes:

1. Modification in Transmission system for evacuation of power from Luhri Stage-I HEP

NCT approved the modifications in transmission scheme "Transmission system for evacuation of power from Luhri Stage-I HEP" as follows:

Sl. No.	Approved Scope of Transmission Scheme (As per 20th NCT)	Modified Transmission Scheme
1	Establishment of 7x105 MVA, 400/220 kV **Pooling Station near Koldam (GIS)** along with 125 MVAR (420 kV) Bus Reactor (1-Ph units along with one spare unit) • 315MVA, 400/220 kV ICT: 2 Nos. (7x105 MVA including 1 spare ICT) • 400 kV ICT bays: 2 Nos. • 220 kV ICT bays: 2 Nos. • 400 kV, 125 MVAr Bus Reactor – 1 No. • 400 kV Bus Reactor bay- 1 Nos. • 400 kV Line Bays- 2 Nos. Future provisions: Space for • 400/220 kV ICTs (315 MVA with single phase units) along with associated bays: 3 Nos. • 400 kV line bays along with switchable line reactor: 3 Nos. • 220 kV line bays: **10 Nos.** • 220 kV bus sectionalizer: 1 set	Establishment of 7x105 MVA, 400/220 kV **Pooling Station near Bilaspur (GIS)** along with 125 MVAR (420 kV) Bus Reactor (1-Ph units along with one spare unit) • 315MVA, 400/220 kV ICT: 2 Nos. (7x105 MVA including 1 spare ICT) • 400 kV ICT bays: 2 Nos. • 220 kV ICT bays: 2 Nos. • 400 kV, 125 MVAr Bus Reactor – 1 No. • 400 kV Bus Reactor bay- 1 Nos. • 400 kV Line Bays- 2 Nos. Future provisions: Space for • 400/220 kV ICTs (315 MVA with single phase units) along with associated bays: 3 Nos. • 400 kV line bays along with switchable line reactor: 3 Nos. • 220 kV line bays: **8 Nos.** • 220 kV bus sectionalizer: 1 set
2	Pooling Station near Koldam (GIS)– Koldam (NTPC) 400 kV D/C line (Triple snowbird) (only one circuit is to be terminated at Koldam(NTPC) while second circuit would be connected to bypassed circuit of Koldam(NTPC) – Ropar/Ludhiana 400 kV D/C line) – 7 km	**LILO of one ckt of 400 kV Koldam (NTPC) – Ropar (Triple snowbird) D/c line at Pooling Station near Bilaspur (GIS)– 1 km**
3	1 no. of 400 kV line bay at Koldam S/s for termination of Pooling Station near Koldam (GIS)– Koldam(NTPC) 400 kV line along with 125 MVAR (420 kV) Bus Reactor at Koldam(NTPC) S/s (1-Ph units along with one spare unit)	**1x125 MVAR (420 kV) Bus Reactor at Koldam(NTPC) S/s (1-Ph units along with one spare unit)** • **125 MVAR, 420 kV Bus Reactor – 1 no.** • **400 kV Bus Reactor bay – 1 no.**

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Sl. No.	Approved Scope of Transmission Scheme (As per 20th NCT)	Modified Transmission Scheme
	• 400 kV Line Bay- 1 no. • 400 kV, 125 MVAr Bus Reactor# - 1 no. (to be terminated in existing line bay at Koldam(NTPC), which would be available due to bypassing of one circuit of Koldam – Ropar/Ludhiana 400 kV D/c line at Koldam(NTPC) S/s)	
4	Bypassing one ckt of Koldam(NTPC) – Ropar/Ludhiana 400 kV D/C line (Triple snowbird) at Koldam(NTPC) and connecting it with one of the circuit of **Pooling Station near Koldam (GIS)**– Koldam(NTPC) 400 kV D/c line (Triple snowbird), thus forming **Pooling Station near Koldam** – Ropar/ Ludhiana one line (Triple snowbird)	**-To be Deleted -**
	Implementation Time Frame: August, 2026	**Implementation Time Frame: May, 2027**
	Estimated Cost : Rs 305 Cr	**Estimated Cost : Rs 242 Cr**

2. **Change in Implementation time-frame of Transmission system for evacuation of power from Shongtong Karcham HEP (450 MW) and Tidong HEP (150 MW)**

NCT noted the change in implementation time frame of Transmission system for evacuation of power from Shongtong Karcham HEP (450 MW) and Tidong HEP (150 MW) from defined schedule (July'26) to 30 months from SPV transfer.

3. **Modification in timeframe of one of the elements in the scope of "Transmission system for offshore wind zone phase -1 (500 MW VGF off coast of Gujarat for subzone B3)"**

NCT approved the modifications in timeframe of one of elements in the scope of "Transmission system for offshore wind zone phase -1 (500 MW VGF off coast of Gujarat for subzone B3):

Scope	Approved Timeline of Transmission Scheme (As per 20th NCT)	Revised timeline
Creation of 400 kV switchyard along with Installation of 2x1500	March-2029	**18 Months**

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MVA, 765/400 kV ICTs at Vataman (AIS) with 2x125 MVAr (420 kV) Bus Reactors • 765/400 kV, 1500 MVA, ICTs – 2 Nos. (7x500MVA incl. spare unit) • 765 kV ICT bays – 2 nos. • 400 kV ICT bays – 2 nos. • 2x125 MVAR, 420 kV Bus Reactor – 1 no. • 400 kV Bus Reactor bay – 2 no.		

4. **Time extension for Communication Scheme "Requirement of additional FOTE of STM-16 capacity at Bhuj-II substation to cater connectivity of RE Gencos" approved in 14th NCT**

NCT approved the Time extension for Communication Scheme "Requirement of additional FOTE of STM-16 capacity at Bhuj-II substation to cater connectivity of RE Gencos" approved in 14th NCT from 12 months from the date of allocation to **18 months** from the date of allocation i.e. 07.07.23.

II. ISTS Transmission schemes, costing between Rs 100 Crore to Rs 500 Crore, approved by NCT:

1. **The transmission schemes approved by NCT under RTM route is given below:**

Sl. No.	Name of Transmission Scheme	Implementation Mode	Implementation timeframe	Estimated Cost (₹ Cr)
1.	Eastern Region Expansion Scheme-43 (ERES-43)	RTM through POWERGRID	18 months (15 months on best effort basis)	310.28
2.	Additional Transmission System Proposed for redundant power supply to Dholera area	RTM through POWERGRID	18 months matching with Creation of 400 kV switchyard along with Installation of 2x1500 MVA, 765/400 kV ICTs at Vataman (AIS) S/s being implemented under "Transmission system for offshore wind zone phase -1 (500 MW VGF off	110

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			coast of Gujarat for subzone B3)" scheme.	

The broad scope of above schemes are given below

Sl. No.	Name of Scheme & Tentative implementation timeframe	Broad Scope
1.	Eastern Region Expansion Scheme-43 (ERES-43) **Implementation timeframe: 18 Months (15 months on best effort basis)**	i. Reconductoring of Kahalgaon (NTPC) – Farakka (NTPC) 400 kV D/c (Twin Moose) line with Twin HTLS conductor (with ampacity of single HTLS as 1228A) ii. Reconductoring of Talcher (NTPC) – Meramundali (OPTCL) 400 kV D/c (Twin Moose) line (one circuit via Angul and bypassed at Angul) with Twin HTLS conductor (with ampacity of single HTLS as 1228A) iii. Upgradation of associated 400 kV bay equipment at Kahalgaon (NTPC) iv. Upgradation of associated 400 kV bay equipment at Farakka (NTPC) v. Upgradation of associated 400 kV bay equipment at Talcher (NTPC) vi. Upgradation of associated 400 kV bay equipment at Meramundali (OPTCL). **(Detailed scope as approved by 22nd NCT and subsequent amendments thereof)**
2.	Additional Transmission System Proposed for redundant power supply to Dholera area **Implementation timeframe: 18 Months** matching with Creation of 400 kV switchyard along with Installation of 2x1500 MVA, 765/400 kV ICTs at Vataman (AIS) S/s being implemented under "Transmission system for offshore wind zone phase -1 (500 MW VGF off coast of Gujarat for subzone B3)" scheme.	i. Creation of 220 kV switchyard along with Installation of 2x500 MVA, 400/220 kV ICTs at Vataman (AIS) ii. 2 Nos. 220 kV line bays for Vataman – Dholera-2(GETCO) 220 kV D/c line **(Detailed scope as approved by 22nd NCT and subsequent amendments thereof)**

2. The transmission schemes approved by NCT under TBCB route is given below:

Sl. No.	Name of Transmission	Implementation Mode	Implementation timeframe	BPC	Estimated Cost (₹ Crs)

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	Scheme				
1.	Augmentation of transformation capacity by 3x500 MVA, 400/220 kV ICTs (6th - 8th) and 1x1500 MVA,765/400 kV ICT (4th) at Bidar PS	TBCB	progressively from 24 months to 30.06.2027	RECPDCL	288

The broad scope of above schemes is given below

Sl. No.	Name of Scheme & Tentative implementation timeframe	Broad Scope	Bid Process Coordinator
1.	Augmentation of transformation capacity by 3x500 MVA, 400/220 kV ICTs (6th - 8th) and 1x1500 MVA,765/400 kV ICT (4th) at Bidar PS **Implementation timeframe: progressively from 24 months to 30.06.2027**	1. Augmentation of transformation capacity of 1x1500 MVA (4th), 765/400 kV ICT at Bidar PS 2. Augmentation of transformation capacity by 3x500 MVA, 400/220 kV ICTs (6th – 8th) at Bidar PS 3 (a) 1 no. of 220 kV line bay at Bidar PS for termination of dedicated transmission lines of M/s Quest Hybren Pvt. Ltd (b) 1 no. of 220 kV line bay at Bidar PS for termination of dedicated transmission lines of M/s Pulse Hybren Pvt. Ltd **(Detailed scope as approved by 22nd NCT and subsequent amendments thereof)**	..... RECPDCL

III. ISTS Transmission schemes, costing greater than ₹ 500 Crore, recommended by NCT to MoP:

The ISTS transmission schemes recommended by NCT to MoP are given below:

Sl. No.	Name of Transmission Scheme	Implementation Mode	Tentative Implementation timeframe	BPC	Estimated Cost (₹ Crs)
1.	Transmission system for supply of power to Green Hydrogen/Ammonia manufacturing potential in Mundra area of Gujarat	TBCB	36 Months	PFCCL	2817

	under Phase-I: Part B1 scheme (3 GW at Navinal S/s)"				
2.	Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)	TBCB	24 Months	PFCCL	4679
3.	Transmission system for proposed Green Hydrogen / Green Ammonia projects in Tuticorin area)	TBCB	30 Months	RECPDCL	2617

The broad scope of the above ISTS schemes to be notified in Gazette of India is as given below:

Sl. No.	**Name of Scheme & Tentative implementation timeframe**	**Broad Scope**	**Bid Process Coordinator**
1.	Transmission system for supply of power to Green Hydrogen/Ammonia manufacturing potential in Mundra area of Gujarat under Phase-I: Part B1 scheme (3 GW at Navinal S/s)" **Implementation timeframe: 36 Months from the date of allocation**	i. Augmentation of Transformation capacity at 765/400 kV Navinal(Mundra) S/s (GIS) by 2x1500 MVA ICTs along with 2x330 MVAR, 765 kV & 2x125MVAr, 420 kV bus reactors on Bus Section-II and 1x125MVAr, 420 kV bus reactor on Bus Section-I. This will involve creation of 765 kV & 400 kV Bus Sections 2 through sectionalization arrangement. The 400 kV and 765 kV Sectionaliser shall be normally closed. ii. Navinal(Mundra) (GIS) – Bhuj 765 kV D/c line iii. 765 kV line bays at each end of Navinal(Mundra) (GIS) – Bhuj 765 kV D/c line iv. ±300MVAr STATCOM along with 2x125MVAr MSC & 1x125MVAr MSR at Navinal(Mundra) (GIS) 400 kV Bus section-I v. ±300MVAr STATCOM along with 2x125MVAr MSC & 1x125MVAr MSR at Navinal(Mundra) (GIS) 400 kV Bus section-II **(Detailed scope as approved by 22nd**	PFCCL

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		NCT and subsequent amendments thereof)	
2.	Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW) **Implementation timeframe: 24 months from the date of allocation**	i. Establishment of 4x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level ii. Ananthapuram-II – Davangere 765 kV D/c line (about 150km) with 240 MVAR SLR (convertible) at Ananthapuram-II end on both circuits iii. Ananthapuram-II – Cuddapah 765 kV D/c line (about 200km) with 330 MVAR SLR (convertible) at Ananthapuram-II end on both circuits iv. +300 MVAR STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR **(Detailed scope as approved by 22nd NCT and subsequent amendments thereof)**	PFCCL
3.	Transmission system for proposed Green Hydrogen / Green Ammonia projects in Tuticorin area) **Implementation timeframe: 30 months from date of allocation**	i. Establishment of 3x1500 MVA, 765/400 kV Tuticorin (GH) S/s with 1x240 MVAR bus Reactor ii. Tuticorin PS – Tuticorin (GH) 765 kV D/c line iii. Upgradation of Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line (presently charged at 400 kV level) at its rated 765 kV voltage level with 1x330 MVAr switchable Line Reactor on both ends of each circuit iv. Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Tuticorin PS – Dharmapuri (Salem New) 765 kV D/c line at Tuticorin PS & Dharmapuri (Salem New) v. Upgradation of Tuticorin PS to its	RECPDCL

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		rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVAr, 765 kV bus reactors vi. Upgradation of Dharmapuri (Salem New) to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVAr, 765 kV bus reactor vii. 400 kV line reactors on Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line shall be utilized as bus reactors at respective 400 kV substations based on availability of bays. viii. Upgradation of Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines (presently charged at 400 kV) to its rated voltage at 765 kV with 1x330 MVAr switchable Line Reactor on Dharmapuri (Salem New) end of each circuit ix. Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c line at Dharmapuri (Salem New) & Madhugiri x. 400 kV line reactors on Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines shall be utilized as bus reactors at respective 400 kV substations based on availability of bays. **(Detailed scope as approved by 22nd NCT and subsequent amendments thereof)**	

IV. ISTS communication schemes approved by NCT:

Sl. No.	Name of Transmission Scheme	Implementation Mode	Tentative Implementation	Implementing Agency	Estimated Cost (Rs. Crs)

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			timeframe		
1.	Scheme for Requirement of Additional FOTE for redundancy at AGC locations in NER: Revised	RTM	6 months from the date of allocation	POWERGRID	0.90
2.	Optical Fibre Connectivity for NLDC new building, August Kranti Marg, New Delhi	RTM	12 months from the date of allocation	POWERGRID	7.2

(Detailed scope as approved by 22nd NCT and subsequent amendments thereof)

Annexure-I

List of participants of the 22nd meeting of NCT

CEA:

1. Sh. Ghanshyam Prasad, Chairperson, CEA & Chairman, NCT
2. Sh. Ajay Talegaonkar, Member (E&C)
3. Sh. A.K. Rajput, Member (Power Systems)
4. Sh. Ishan Sharan, Chief Engineer (PSPA-I)
5. Ms. Priyam Srivastava, Deputy Director (PCD)
6. Sh. Pranay Garg, Deputy Director (PSPA-II)
7. Sh. Manish Kumar Verma, Assistant Director (PSPA-II)

MoP:

1. Sh. Om Kant Shukla, Director (Trans.)

MNRE:

1. Sh. Tarun Singh, Scientist E
2. Sh. Prasad Chaphekar, Deputy Secretary

SECI:

1. Sh. R.K. Agarwal, Consultant

NITI Aayog:

1. Sh. Jawahar Lal, GM (Energy)

CTUIL:

1. Sh. Ashok Pal, Deputy COO
2. Sh. K K Sarkar, Sr GM
3. Sh. Anil Kumar Meena, GM
4. Sh. Kashish Bhambhani, GM
5. Sh. Bhaskar Wagh, DGM
6. Sh. Venkatesh Gorli, Chief Manager
7. Shashank Shekhar, Manager
8. Abhilash Thakur, Asst. Manager

GRID India:

1. Sh. S.R. Narasimhan, CMD
2. Sh. Rajiv Porwal, Director (SO)
3. Sh. Vivek Pandey, Senior GM
4. Sh. Priyam Jain, Chief Manager
5. Sh. Gaurab Dash, Dy. Manager
6. Raj Kishan, Dy. Manager

RECPDCL

1. Sh. T.S.C. Bosh, CEO
2. Sh. Satyaban Sahu, GM (Tech)

T.C

PFCCL

1. Sh. Navin Phogat, GM (Tech)
2. Sh. Dharmender, AM

Expert Member

1. Sh. Ravinder Gupta, Ex Chief Engineer, CEA

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The Gazette of India

सी.जी.-डी.एल.-अ.-13092024-257122
CG-DL-E-13092024-257122

असाधारण
EXTRAORDINARY
भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)
प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 3568] नई दिल्ली, बृहस्पतिवार, सितम्बर 12, 2024/भाद्र 21, 1946
No. 3568] NEW DELHI, THURSDAY, SEPTEMBER 12, 2024/BHADRA 21, 1946

विद्युत मंत्रालय
अधिसूचना

नई दिल्ली, 11 सितम्बर, 2024

का.आ. 3901(अ).—विद्युत अधिनियम, 2003 (2003 की सं. 36,) की धारा 63 के अंतर्गत परिचालित दिशा-निर्देशों के पैरा 3 के उप-पैरा 3.2 द्वारा प्रदत्त अधिकारों का प्रयोग करते हुए, केंद्र सरकार, राष्ट्रीय पारेषण समिति की 22वीं बैठक की सिफारिशों पर, संबंधित बोली-प्रक्रिया समन्वयकों (बीपीसी) के विवरण के साथ टीबीसीबी मोड के अंतर्गत निम्नलिखित पारेषण स्कीमों को अधिसूचित करती है:

क्रम सं.	पारेषण **स्कीम का नाम और कार्यक्षेत्र**	
1.	चरण-I के अंतर्गत गुजरात के मुंद्रा क्षेत्र में हरित हाइड्रोजन/अमोनिया विनिर्माण क्षमता को विद्युत आपूर्ति के लिए पारेषण प्रणाली: **भाग बी1 स्कीम (नवीनल एस/एस में 3 गीगावाट)** कार्यान्वयन **की संभावित समय-सीमा:** कार्यान्वयन एजेंसी को आवंटन की तिथि से 36 महीने बीपीसी: **पीएफसी कंसल्टिंग लिमिटेड** कार्यक्षेत्र:	
	क्रम सं. पारेषण **स्कीम का कार्यक्षेत्र**	**क्षमता/लाइन की लंबाई (किमी)**
	1. 2x1500 एमवीए आईसीटी के साथ-साथ बस सेक्शन-II	• नए 765 केवी और 400 केवी बस सेक्शन-II का निर्माण

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		पर 2x330 एमवीएआर, 765 केवी और 2x125 एमवीएआर, 420 केवी बस रिएक्टरों और बस सेक्शन-I पर 1x125 एमवीएआर, 420 केवी बस रिएक्टर द्वारा 765/400 केवी नवीनल (मुंद्रा) एस/एस (जीआईएस) में परिवर्तन क्षमता का संवर्धन।इसमें सेक्शनलाइजेशन व्यवस्था के माध्यम से 765 केवी और 400 केवी बस सेक्शन 2 का निर्माण शामिल होगा। 400 केवी और 765 केवी सेक्शनलाइजर सामान्य रूप से बंद रहेंगे।	• 765 केवी सेक्शनलाइज़र – 1 सेट • 400 केवी सेक्शनलाइज़र – 1 सेट • 765/400 केवी, 1500 एमवीए आईसीटी-2 (सेक्शन-II पर) • 765 केवी आईसीटी बे- 2 (सेक्शन-II पर) • 400 केवी आईसीटी बे- 2 (सेक्शन-II पर) • 330 एमवीएआर 765 केवी बस रिएक्टर-2 (सेक्शन-II) • 125 एमवीएआर 420 केवी बस रिएक्टर-3 (सेक्शन-I पर 1 और सेक्शन-II पर 2) • 765 केवी रिएक्टर बे- 2 (सेक्शन-II) • 400 केवी रिएक्टर बे- 3 (सेक्शन-I पर 1 और सेक्शन-II पर 2)
	2.	नवीनल (मुंद्रा) (जीआईएस) - भुज 765 केवी डी/सी लाइन	70 km
	3.	नवीनल (मुंद्रा) (जीआईएस) - भुज 765 केवी डी/सी लाइन के प्रत्येक छोर पर 765 केवी लाइन बे	• 765 केवी लाइन बे-2 (एआईएस) (भुज छोर के लिए) • 765 केवी लाइन बे-2 (जीआईएस) (नवीनल (मुंद्रा) छोर के लिए) (सेक्शन -II पर)
	4.	नवीनल (मुंद्रा) (जीआईएस) 400 केवी बस सेक्शन-I पर ±300 एमवीएआर स्टेटकॉम के साथ 2x125 एमवीएआर एमएससी और 1x125 एमवीएआर एमएसआर	• ±300 एमवीएआर स्टेटकॉम के साथ 2x125 एमवीएआर एमएससी और 1x125 एमवीएआर एमएसआर • 400 केवी बे – 1
	5.	नवीनल (मुंद्रा) (जीआईएस) 400 केवी बस सेक्शन-II में ±300 एमवीएआर स्टेटकॉम के साथ 2x125 एमवीएआर एमएससी और 1x125 एमवीएआर एमएसआर	• ±300 एमवीएआर स्टेटकॉम के साथ 2x125 एमवीएआर एमएससी और 1x125 एमवीएआर एमएसआर • 400 केवी बे – 1
		नोट: *(1) जहां भी आवश्यक हो, टीएसपी वन एंड हाफ ब्रेकर स्कीम में व्यास (जीआईएस) पूरा करने के लिए आवश्यक 2 मुख्य बे और 1 टाई बे से युक्त पूर्ण व्यास को कार्यान्वित करेगा।* *(2) नवीनल (मुंद्रा) एस/एस के टीएसपी को उपरोक्त क्रमांक 1,2, 3 (नवीनल छोर के लिए), 4 और 5 पर कार्यक्षेत्र के लिए स्थान उपलब्ध कराना होगा।* *(3) भुज पीएस की टीएसपी उपरोक्त क्रमांक 3 (भुज छोर के लिए) पर कार्यक्षेत्र के लिए स्थान उपलब्ध कराएगी।*	

2. अनंतपुर-II आरईजेड के एकीकरण के लिए पारेषण प्रणाली - चरण-I (4.5 गीगावाट के लिए)

अस्थायी कार्यान्वयन समय-सीमा: कार्यान्वयन एजेंसी को आवंटन की तिथि से 24 माह

बीपीसी: **पीएफसी कंसल्टिंग लिमिटेड**

कार्यक्षेत्र:

क्रम सं.	पारेषण स्कीम का कार्यक्षेत्र	क्षमता/ (किमी)
1.	आंध्र प्रदेश के कुरनूल के पास 4x1500 एमवीए, 765/400 और 6x500 एमवीए, 400/220 केवी अनंतपुरम-II पूलिंग	• 765/400 केवी, 1500 एमवीए, आईसीटी – 4 (1 अतिरिक्त यूनिट सहित 13x500 एमवीए)

	स्टेशन के साथ-साथ अनंतपुरम-II पीएस में 2x330 एमवीएआर (765 केवी) बस रिएक्टरों की स्थापना जिसमे 400 केवी स्तर पर प्रत्येक 4500 एमवीए के दो (2) खंडों का प्रावधान है। **स्थान हेतु भावी प्रावधान:** ➢ 765/400 केवी, 1500 एमवीए, आईसीटी - 2 ➢ 765 केवी आईसीटी बे - 2 ➢ 400 केवी आईसीटी बे - 2 ➢ 400/220 केवी, 500 एमवीए, आईसीटी - 12 ➢ 400 केवी आईसीटी बे - 12 ➢ 220 केवी आईसीटी बे - 12 ➢ 765 केवी लाइन बे - 8 (एसएलआर के प्रावधान के साथ) ➢ 400 केवी लाइन बे - 12 (एसएलआर के प्रावधान के साथ) ➢ 220 केवी लाइन बे - 20 ➢ 220 केवी बस सेक्शनलाइज़र: 2 सेट ➢ 220 केवी बस कपलर (बीसी) बे – 2 ➢ 220 केवी ट्रांसफर बस कपलर (टीबीसी) बे – 2 ➢ 400 केवी बस सेक्शनलाइज़र: 1 सेट	• 765 केवी आईसीटी बे – 4 • 400 केवी आईसीटी बे – 4 • 400/220 केवी, 500 एमवीए, आईसीटी – 6 • 400 केवी आईसीटी बे – 6 • 220 केवी आईसीटी बे – 6 • 765 केवी लाइन बे – 4(अनंतपुरम-II पीएस पर अनंतपुरम-II –दावणगेरे और अनंतपुरम-II –कुडप्पा 765 केवी डी/सी लाइनों की समाप्ति के लिए) • 765 केवी, 330 एमवीएआर बस रिएक्टर – 2 • 765 केवी बस रिएक्टर बे – 2 • 220 केवी लाइन बे – 6 • 220 केवी बस सेक्शनलाइज़र: 1 सेट • 220 केवी बस कपलर (बीसी) बे – 2 • 220 केवी ट्रांसफर बस कपलर (टीबीसी) बे – 2
2.	दोनों सर्किटों के अनंतपुरम-II छोर पर अनंतपुरम-II – दावणगेरे 765 केवी डी/सी लाइन (लगभग 150 किमी) के साथ 240 एमवीएआर एसएलआर (परिवर्तनीय)	~ 150 किमी • 765 केवी लाइन बे – 2 संख्या (दावणगेरे पीएस पर) • अनंतपुरम-II पीएस पर 765 केवी, 240 एमवीएआर एसएलआर – 2 (1 स्विचेबल अतिरिक्त यूनिट सहित 7x80 एमवीएआर)
3.	दोनों सर्किटों के अनंतपुरम-II छोर पर अनंतपुरम-II – कुडप्पा765 केवी डी/सी लाइन (लगभग 200 किमी) के साथ 330एमवीएआर एसएलआर (परिवर्तनीय)	~ 200 km • 765 केवी लाइन बे – 2 (कुडप्पा में) • अनंतपुरम-II पीएस पर 765 केवी, 330 एमवीएआर एसएलआर – 2 (बस रिएक्टर और लाइन रिएक्टर दोनों के लिए 1 स्विचेबल स्पेयर यूनिट सहित 7x110 एमवीएआर)
4.	<u>अनंतपुरम-II पीएस पर ±300 एमवीएआर स्टेटकॉम के साथ-साथ 2x125 एमवीएआर एमएसआर</u>	• 400 केवी बे– 1

नोट:

(1) पावरग्रिड अनंतपुरम-II पीएस - कुडप्पा 765 केवी डी/सी लाइन की समाप्ति के लिए कुडप्पा में 765 केवी लाइन के 2 के लिए स्थान उपलब्ध कराएगा।

(2) दावणगेरे पीएस के विकासकर्ता को अनंतपुरम-II पीएस - दावणगेरे 765 केवी डी/सी लाइन की समाप्ति के लिए दावणगेरे

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पीएस पर 2 765केवी लाइन बेके लिए स्थान उपलब्ध कराना होगा।

3. **तूतीकोरिन क्षेत्र में प्रस्तावित ग्रीन हाइड्रोजन / ग्रीन अमोनिया परियोजनाओं के लिए पारेषण प्रणाली**

कार्यान्वयन की संभावित समय-सीमा: कार्यान्वयन एजेंसी को आवंटन की तिथि से 30 माह

बीपीसी: आरईसी पावर डेवलपमेंट एंड कंसल्टेंसी लिमिटेड

कार्यक्षेत्र:

क्रम सं.	पारेषण स्कीम का कार्यक्षेत्र	क्षमता/ (किमी)
1.	1x240 एमवीएआर बस रिएक्टर के साथ 3x1500 एमवीए, 765/400 केवी तूतीकोरिन (जीएच) एस/एस की स्थापना **स्थान हेतु भावी प्रावधान:** ➢ 765/400 केवी, 1500 एमवीए, आईसीटी - 3 ➢ 765 केवी आईसीटी बे - 3 ➢ 400 केवी आईसीटी बे - 3 ➢ 765 केवी लाइन बे - 6 (एसएलआर के प्रावधान के साथ) ➢ 400 केवी लाइन बे - **16** (एसएलआर के प्रावधान के साथ) ➢ 400 केवी बस सेक्शनलाइज़र: 1 सेट	• 765/400 केवी, 1500 एमवीए, आईसीटी – 3 (1 अतिरिक्त यूनिट सहित10x500 एमवीए) • 765 केवी आईसीटी बे – 3 • 400 केवी आईसीटी बे – 3 • 765 केवी लाइन बे – 2 (तूतीकोरिन (जीएच) एस/एस पर तूतीकोरिन (जीएच) – तूतीकोरिन पीएस 765 केवी डी/सी लाइन की समाप्ति के लिए) • 765 केवी, 240 एमवीएआर बस रिएक्टर – 1 (1 स्विचेबल अतिरिक्त यूनिट सहित 4x80 एमवीएआर) • 765 केवी बस रिएक्टर बे – 1
2.	तूतीकोरिन पीएस – तूतीकोरिन (जीएच) 765 केवी डी/सी लाइन	– 50 किमी • 765 केवी लाइन बे – 2 (तूतीकोरिन पीएस पर)
3.	तूतीकोरिन पीएस - धर्मपुरी (सलेम न्यू) 765 केवी डी/सी लाइन (वर्तमान में 400 केवी स्तर पर चार्ज) का प्रत्येक सर्किट के दोनों छोर पर 1x330 एमवीएआर स्विचेबल लाइन रिएक्टर के साथ765 केवी पर रेटेड वोल्टेज स्तर तक उन्नयन	• 765 केवी लाइन बे तूतीकोरिन पीएस - 2 • तूतीकोरिन पीएस पर 765 केवी, 330 एमवीएआर एसएलआर - 2 (बस रिएक्टर और लाइन रिएक्टर दोनों के लिए 1 अतिरिक्त यूनिट सहित 7x110 एमवीएआर) • धर्मपुरी (सलेम नया) पर 765 केवी लाइन बे - 2 • धर्मपुरी (सलेम न्यू) में 765 केवी, 330 एमवीएआर एसएलआर - 2 (बस रिएक्टर और लाइन रिएक्टर दोनों के लिए 1 अतिरिक्त यूनिट सहित 7x110 एमवीएआर)
4.	तूतीकोरिन पीएस और धर्मपुरी (सलेम न्यू) पर तूतीकोरिन पीएस - धर्मपुरी (सलेम न्यू) 765 केवी डी/सी लाइन के लिए 400 केवी स्विचयार्ड से 765 केवी स्विचयार्ड में समाप्ति के परिवर्तन के लिए पारेषण लाइन	प्रत्येक छोर पर लगभग 1-2 किमी
5.	तूतीकोरिन पीएस का 3x1500 एमवीए, 765/400 केवी आईसीटी और 1x330 एमवीएआर, 765 केवी बस रिएक्टरों के साथ765 केवी स्तर के रेटेड वोल्टेजतक	• 765/400 केवी, 1500 एमवीए, आईसीटी – 3 (1 अतिरिक्त यूनिट सहित 10x500 एमवीए) • 765 केवी आईसीटी बे – 3

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	उन्नयन **स्थान हेतु भावी प्रावधान :** ➢ 765/400 केवी, 1500 एमवीए, आईसीटी - 1 ➢ 765 केवी आईसीटी बे - 1 ➢ 400 केवी आईसीटी बे - 1 ➢ 765 केवी लाइन वे - 6 (एसएलआर के लिए प्रावधान के साथ)	• 400 केवी आईसीटी बे – 3 • 765 केवी, 330 एमवीएआर बस रिएक्टर – 1 • 765 केवी बस रिएक्टर बे – 1
6.	धर्मपुरी (सलेम न्यू) का3x1500 एमवीए, 765/400 केवी आईसीटी और 1x330 एमवीएआर, 765 केवी बस रिएक्टरों के साथ765 केवी स्तर के रेटेड वोल्टेजतक उन्नयन **स्थान हेतु भावी प्रावधान:** • 765/400 केवी, 1500 एमवीए, आईसीटी - 1 • 765 केवी आईसीटी बे - 1 • 400 केवी आईसीटी बे - 1 • 765 केवी लाइन वे - 6 (एसएलआर के लिए प्रावधान के साथ)	• 765/400 केवी, 1500 एमवीए, आईसीटी – 3 (1 अतिरिक्त यूनिट सहित 10x500 एमवीए) • 765 केवी आईसीटी बे – 3 • 400 केवी आईसीटी बे – 3 • 765 केवी, 330 एमवीएआर बस रिएक्टर – 1 • 765 केवी बस रिएक्टर वे – 1
7.	तूतीकोरिन पीएस - धर्मपुरी (सलेम न्यू) 765 केवी डी/सी लाइन पर 400 केवी लाइन रिएक्टरों को बे की उपलब्धता के आधार पर संबंधित 400 केवी सबस्टेशनों पर बस रिएक्टर के रूप में उपयोग किया जाएगा।	
8.	धर्मपुरी (सलेम न्यू) - मधुगिरी 765 केवी 2xएस/सी लाइनों (वर्तमान में 400 केवी पर चार्ज) का प्रत्येक सर्किट के धर्मपुरी (सलेम न्यू) छोर पर 1x330 एमवीएआर स्विचेबल लाइन रिएक्टर के साथ 765 केवी पर रेटेड वोल्टेज तक उन्नयन	• धर्मपुरी (सलेम न्यू) पर 765 केवी लाइन बे – 2 • धर्मपुरी (सलेम न्यू) पर 765 केवी, 330 एमवीएआर एसएलआर – 2 (6x110 एमवीएआर स्विचेबल यूनिट) • मधुगिरी पर 765 केवी लाइन बे – 2
9.	धर्मपुरी (सलेम न्यू) और मधुगिरी पर धर्मपुरी (सलेम न्यू) - मधुगिरी 765 केवी 2xएस/सी लाइन के लिए 400 केवी स्विचयार्ड से 765 केवी स्विचयार्ड तक समाप्ति के परिवर्तन के लिए पारेषण लाइन	प्रत्येक छोर पर लगभग 1-2 किमी
10.	धर्मपुरी (सलेम न्यू) - मधुगिरी 765 केवी 2xएस/सी लाइनों पर 400 केवी लाइन रिएक्टरों को वे की उपलब्धता के आधार पर संबंधित 400 केवी सबस्टेशनों पर बस रिएक्टर के रूप में उपयोग किया जाएगा।	

नोट:

(1) पावरग्रिड तूतीकोरिन पीएस को 765 केवी स्तर के रेटेड वोल्टेज स्तर तक उन्नत करने के लिए स्थान उपलब्ध कराएगा।

(2) पावरग्रिड धर्मपुरी (सलेम न्यू) को 765 केवी स्तर के रेटेड वोल्टेज स्तर तक उन्नत करने के लिए स्थान उपलब्ध कराएगा।

(3) पावरग्रिड / टीएसपी धर्मपुरी (सलेम न्यू) - मधुगिरी 765 केवी 2xएस/सी लाइनों की समाप्ति के लिए मधुगिरी 765 केवी पर 2 765 केवी लाइन वे के लिए स्थान प्रदान करेगा।

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2. बोली प्रक्रिया समन्वयक की नियुक्ति समय-समय पर संशोधित विद्युत मंत्रालय द्वारा इस संबंध में जारी दिशानिर्देशों में निर्धारित शर्तों के अधीन होगी।

[फा. सं. 15/3/2018-ट्रांस-भाग(4)]

नाओरेम इंद्रकुमार सिंह, अवर सचिव (पारेषण)

MINISTRY OF POWER

NOTIFICATION

New Delhi, the 11th September, 2024

S.O. 3901(E).—In exercise of the powers conferred by sub-para 3.2 of Para 3 of the Guidelines circulated under Section 63 of the Electricity Act, 2003 (No. 36 of 2003), the Central Government, on the recommendations of 22nd meeting of National Committee on Transmission, hereby notifies the following transmission schemes under TBCB mode, with details of respective Bid-Process Coordinators (BPCs): -

<table>
<tr><td>Sl. No.</td><td>Name & Scope of the Transmission Scheme</td></tr>
<tr><td>1.</td><td>Transmission system for supply of power to Green Hydrogen/Ammonia manufacturing potential in Mundra area of Gujarat under Phase-I: Part B1 scheme (3 GW at Navinal S/s)
Tentative implementation timeframe:36 months from date of allocation to implementing agency

BPC: PFC Consulting Limited
Scope:
<table>
<tr><th>Sl. No.</th><th>Scope of the Transmission Scheme</th><th>Capacity/ Line Length (Km)</th></tr>
<tr><td>1.</td><td>Augmentation of Transformation capacity at 765/400 kV Navinal(Mundra) S/s (GIS) by 2x1500 MVA ICTs along with 2x330 MVAR, 765 kV & 2x125MVAr, 420 kV bus reactors on Bus Section-II and 1x125MVAr, 420 kV bus reactor on Bus Section-I. This will involve creation of 765 kV & 400 kV Bus Sections 2 through sectionalization arrangement. The 400 kV and 765 kV Sectionaliser shall be normally closed.</td><td>• Creation of New 765 kV & 400 kV Bus Section-II
• 765 kV Sectionaliser – 1 Set
• 400 kV Sectionaliser – 1 set
• 765/400 kV, 1500 MVA ICT-2 Nos. (on Sec-II)
• 765 kV ICT bays- 2 Nos. (on Sec-II)
• 400 kV ICT bays- 2 Nos. (on Sec-II)
• 330 MVAR 765 kV bus reactor-2 Nos. (Sec-II)
• 125 MVAR 420 kV bus reactor-3 Nos. (1 no. on Sec-I & 2 Nos. on Sec-II)
• 765 kV reactor bay- 2 Nos. (Sec-II)
• 400 kV reactor bay- 3 Nos. (1 No. on Sec-I & 2 Nos. on Sec-II)</td></tr>
<tr><td>2.</td><td>Navinal(Mundra) (GIS) – Bhuj 765 kV D/c line</td><td>70 km</td></tr>
<tr><td>3.</td><td>765 kV line bays at each end of Navinal(Mundra) (GIS) – Bhuj 765 kV D/c line</td><td>• 765 kV line bays-2 Nos. (AIS) (for Bhuj end)
• 765 kV line bays-2 Nos. (GIS) (for Navinal(Mundra) end) (on Sec-II)</td></tr>
<tr><td>4.</td><td>±300MVAr STATCOM along with 2x125MVAr MSC & 1x125MVAr MSR at Navinal(Mundra) (GIS) 400 kV Bus section-I</td><td>• ±300MVAr STATCOM along with 2x125MVAr MSC & 1x125MVAr MSR
• 400 kV bay – 1 no.</td></tr>
<tr><td>5.</td><td>±300MVAr STATCOM along with 2x125MVAr MSC & 1x125MVAr MSR at Navinal(Mundra) (GIS) 400 kV Bus section-II</td><td>• ±300MVAr STATCOM along with 2x125MVAr MSC & 1x125MVAr MSR
• 400 kV bay – 1 no.</td></tr>
<tr><td></td><td>Note:
(1) Wherever required, TSP shall implement complete Dia consisting of 2 Main Bays & 1 Tie Bay required for completion of diameter (GIS) in one-and-half breaker scheme.</td><td></td></tr>
</table></td></tr>
</table>

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	(2) TSP of Navinal (Mundra) S/s shall provide space for scope of work at Sl. 1,2, 3 (for Navinal end), 4 & 5 above. *(3) TSP of Bhuj PS shall provide space for scope of work at Sl. 3 (for Bhuj end) above.*	
2.	**Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)** **Tentative implementation timeframe:** 24 months from date of allocation to implementing agency **BPC: PFC Consulting Limited** Scope:	
	Sl. No.	**Scope of the Transmission Scheme**
	1.	Establishment of 4x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level **Future Space Provisions:** ➢ 765/400 kV, 1500 MVA, ICTs – 2 Nos. ➢ 765 kV ICT bays – 2 Nos. ➢ 400 kV ICT bays – 2 Nos. ➢ 400/220 kV, 500 MVA, ICTs – 12 Nos. ➢ 400 kV ICT bays – 12 Nos. ➢ 220 kV ICT bays – 12 Nos. ➢ 765 kV line bays – 8 Nos. (with provision for SLR) ➢ 400 kV line bays – 12 Nos. (with provision for SLR) ➢ 220 kV line bays – 20 Nos. ➢ 220 kV Bus Sectionalizer : 2 sets ➢ 220 kV Bus Coupler (BC) Bay – 2 Nos. ➢ 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos. ➢ 400 kV Bus Sectionalizer : 1 set
	2.	Ananthapuram-II – Davangere 765 kV D/c line (about 150km) with 240 MVAR SLR (convertible) at Ananthapuram-II end on both circuits
	3.	Ananthapuram-II – Cuddapah 765 kV D/c line (about 200km) with 330 MVAR SLR (convertible) at Ananthapuram-II end on both circuits
	4.	±300 MVAR STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR
	Note: *(1) POWERGRID shall provide space for 2 Nos. of 765 kV line bays at Cuddapah for termination of Ananthapuram-II PS – Cuddapah 765 kV D/c line* *(2) Developer of Davanagere PS shall provide space for 2 Nos. of 765 kV line bays at Davanagere PS for termination of Ananthapuram-II PS – Davanagere 765 kV D/c line*	

Capacity/ (Km)
• 765/400 kV, 1500 MVA, ICTs – 4 Nos. (13x500 MVA incl. 1 spare unit) • 765 kV ICT bays – 4 Nos. • 400 kV ICT bays – 4 Nos. • 400/220 kV, 500 MVA, ICTs – 6 Nos. • 400 kV ICT bays – 6 Nos. • 220 kV ICT bays – 6 Nos. • 765 kV line bays – 4 Nos. (at Ananthapuram-II PS for termination of Ananthapuram-II – Davanagere and Ananthapuram-II – Cuddapah 765 kV D/c lines) • 765 kV, 330 MVAr Bus Reactor – 2 Nos. • 765 kV Bus Reactor bays – 2 Nos. • 220 kV line bays – 6 Nos. • 220 kV Bus Sectionalizer : 1 set • 220 kV Bus Coupler (BC) Bay – 2 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos.
~ 150 km • 765 kV line bays – 2 Nos. (at Davanagere PS) • 765 kV, 240 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x80 MVArinc. 1 switchable spare unit)
~ 200 km • 765 kV line bays – 2 Nos. (at Cuddapah) • 765 kV, 330 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x110 MVArinc. 1 switchable spare unit for both bus reactor and line reactor)
• 400 kV bay – 1 No.

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Transmission system for proposed Green Hydrogen / Green Ammonia projects in Tuticorin area)

Tentative implementation timeframe: 30 months from date of allocation to implementing agency

BPC: REC Power Development and Consultancy Limited

Scope:

Sl. No.	Scope of the Transmission Scheme	Capacity/ (Km)
1.	Establishment of 3x1500 MVA, 765/400 kV Tuticorin (GH) S/s with 1x240 MVAR bus Reactor **Future Space Provisions:** ➢ 765/400 kV, 1500 MVA, ICTs – 3 Nos. ➢ 765 kV ICT bays – 3 Nos. ➢ 400 kV ICT bays – 3 Nos. ➢ 765 kV line bays – 6 Nos. (with provision for SLR) ➢ 400 kV line bays – 16 Nos. (with provision for SLR) ➢ 400 kV Bus Sectionalizer : 1 set	• 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV line bays – 2 Nos. (at Tuticorin (GH) S/s for termination of Tuticorin (GH) – Tuticorin PS 765 kV D/c line) • 765 kV, 240 MVAr Bus Reactor – 1 No. (4x80 MVAr including 1 switchable spare unit) • 765 kV Bus Reactor bays – 1 No.
2.	Tuticorin PS – Tuticorin (GH) 765 kV D/c line	~ 50 km • 765 kV line bays – 2 Nos. (at Tuticorin PS)
3.	Upgradation of Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line (presently charged at 400 kV level) at its rated 765 kV voltage level with 1x330 MVAr switchable Line Reactor on both ends of each circuit	• 765 kV line bays Tuticorin PS – 2 Nos. • 765 kV, 330 MVAr SLR at Tuticorin PS – 2 Nos. (7x110 MVAr including 1 spare unit for both bus reactor and line reactor) • 765 kV line bays at Dharmapuri (Salem New) – 2 Nos. • 765 kV, 330 MVAr SLR at Dharmapuri (Salem New) – 2 Nos. (7x110 MVAr including 1 spare unit for both bus reactor and line reactor)
4.	Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Tuticorin PS – Dharmapuri (Salem New) 765 kV D/c line at Tuticorin PS &Dharmapuri (Salem New)	Approx. 1-2 km at each end
5.	Upgradation of Tuticorin PS to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVAr, 765 kV bus reactors **Future Space Provisions:** ➢ 765/400 kV, 1500 MVA, ICTs – 1 No. ➢ 765 kV ICT bays – 1 No. ➢ 400 kV ICT bays – 1 No. ➢ 765 kV line bays – 6 Nos. (with provision for SLR)	• 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos. • 765 kV, 330 MVAr Bus Reactor – 1 No. • 765 kV Bus Reactor bays – 1 No.
6.	Upgradation of Dharmapuri (Salem New) to its rated voltage of 765 kV level alongwith 3x1500 MVA, 765/400 kV ICTs and 1x330 MVAr, 765 kV bus reactor	• 765/400 kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA including 1 spare unit) • 765 kV ICT bays – 3 Nos. • 400 kV ICT bays – 3 Nos.

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	Future Space Provisions: • 765/400 kV, 1500 MVA, ICTs – 1 No. • 765 kV ICT bays – 1 No. • 400 kV ICT bays – 1 No. • 765 kV line bays – 6 Nos. (with provision for SLR)	• 765 kV, 330 MVAr Bus Reactor – 1 No. • 765 kV Bus Reactor bays – 1 No.
7.	400 kV line reactors on Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line shall be utilized as bus reactors at respective 400 kV substations based on availability of bays.	
8.	Upgradation of Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines (presently charged at 400 kV) to its rated voltage at 765 kV with 1x330 MVAr switchable Line Reactor on Dharmapuri (Salem New) end of each circuit	• 765 kV line bays at Dharmapuri (Salem New) – 2 Nos. • 765 kV, 330 MVAr SLR at Dharmapuri (Salem New) – 2 Nos. (6x110 MVAr switchable units) • 765 kV line bays at Madhugiri – 2 Nos.
9.	Transmission line for change of termination from 400 kV switchyard to 765 kV switchyard for Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c line at Dharmapuri (Salem New)&Madhugiri	Approx. 1-2 km at each end
10.	400 kV line reactors on Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines shall be utilized as bus reactors at respective 400 kV substations based on availability of bays.	

Note:

(1) POWERGRID shall provide space for upgradation of Tuticorin PS to its rated voltage level of 765 kV level

(2) POWERGRID shall provide space for upgradation of Dharmapuri (Salem New) to its rated voltage level of 765 kV level

(3) POWERGRID / TSP shall provide space for 2 Nos. of 765 kV line bays at Madhugiri 765 kV for termination of Dharmapuri (Salem New) – Madhugiri 765 kV 2xS/c lines

2. The appointment of the Bid Process Coordinator is subject to the conditions laid down in the Guidelines issued by Ministry of Power in this regard, amended from time to time.

[F. No. 15/3/2018-Trans-Part(4)]

NAOREM INDRAKUMAR SINGH, Under Secy. (Transmission)

Uploaded by Dte. of Printing at Government of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054.

GORAKHA NATH YADAVA

SINGLE STAGE REQUEST FOR PROPOSAL DOCUMENT

FOR

SELECTION OF BIDDER AS TRANSMISSION SERVICE PROVIDER THROUGH TARIFF BASED COMPETITIVE BIDDING PROCESS

TO

ESTABLISH INTER-STATE TRANSMISSION SYSTEM

FOR

TRANSMISSION SYSTEM FOR INTEGRATION OF ANANTAPUR-II REZ - PHASE-I (FOR 4.5 GW)

ISSUED BY

PFC CONSULTING LTD.

(A wholly owned subsidiary of Power Finance Corporation Ltd.)

Registered Office:
1st Floor, "Urjanidhi", 1, Barakhamba Lane,
Connaught Place, New Delhi-110001

October 15, 2024

T.C

PFC CONSULTING LIMITED

(A wholly owned subsidiary of Power Finance Corporation Limited)

Corporate Office:
9th Floor, A-Wing, Statesman House
Connaught Place, New Delhi-110001

Request for Proposal Document for selection of Bidder as Transmission Service Provider through tariff based competitive bidding process to establish Inter-State Transmission System for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" is issued by PFC Consulting Limited.

This RFP document is issued to -

M/s. _____

_____

_____

_____

_____

General Manager
PFC Consulting Limited
9th Floor, A-Wing, Statesman House
Connaught Place, New Delhi-110001
Email: pfccl.itp@pfcindia.com
Place: New Delhi
Date:

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REQUEST FOR PROPOSAL NOTIFICATION

PFC CONSULTING LIMITED

(A wholly owned subsidiary of Power Finance Corporation Limited)

Corporate Office:
9th Floor, A-Wing, Statesman House
Connaught Place, New Delhi-110001

1. The Government of India, Ministry of Power, vide its gazette notification no CG-DL-E-13092024-257122 dated September 12, 2024 has notified PFC Consulting Limited (PFCCL) to be the Bid Process Coordinator (BPC) for the purpose of selection of Bidder as Transmission Service Provider (TSP) to establish Inter-State transmission system for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"** through tariff based competitive bidding process.

2. PFC Consulting Limited (PFCCL) (hereinafter referred to as BPC) hereby invites all prospective Bidders for issue of Request for Proposal (RFP) for selection of Bidder as Transmission Service Provider (TSP) on the basis of international competitive bidding in accordance with the "Tariff Based Competitive Bidding Guidelines for Transmission Service" and "Guidelines for Encouraging Competition in Development of Transmission Projects" issued by Government of India, Ministry of Power under section – 63 of The Electricity Act, 2003 and as amended from time to time. The responsibility of the TSP would be to establish the following Inter-State Transmission System – **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"** (hereinafter referred to as 'Project') on build, own, operate & transfer basis and to provide transmission service:

Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)		
S No.	**Name of Transmission Element**	**Scheduled COD in months from Effective Date**
1.	Establishment of 4x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level. • 765/400 kV, 1500 MVA, ICTs – 4 Nos. (13x500 MVA incl. 1 spare unit) • 765 kV ICT bays – 4 Nos. • 400 kV ICT bays – 4 Nos. • 400/220 kV, 500 MVA, ICTs – 6 Nos. • 400 kV ICT bays – 6 Nos. • 220 kV ICT bays – 6 Nos. • 765 kV line bays – 4 Nos. (at Ananthapuram-II PS for termination of Ananthapuram-II – Davanagere and Ananthapuram-II – Cuddapah 765kV D/C lines) • 765 kV, 330 MVAr Bus Reactor – 2 Nos. • 765 kV Bus Reactor bays – 2 Nos. • 220 kV line bays – 6 Nos. • 220 kV Bus Sectionalizer : 1 set • 220 kV Bus Coupler (BC) Bay – 2 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos.	**24 Months**

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	Future Space Provisions: • 765/400 kV, 1500 MVA, ICTs – 2 Nos. • 765 kV ICT bays – 2 Nos. • 400 kV ICT bays – 2 Nos. • 400/220 kV, 500 MVA, ICTs – 12 Nos. • 400 kV ICT bays – 12 Nos. • 220 kV ICT bays – 12 Nos. • 765 kV line bays – 8 Nos. (with provision for SLR) • 400 kV line bays – 12 Nos. (with provision for SLR) • 220 kV line bays – 20 Nos. • 220 kV Bus Sectionalizer : 2 sets • 220 kV Bus Coupler (BC) Bay – 2 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos. • 400 kV Bus Sectionalizer : 1 set	
2.	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits • 765 kV line bays – 2 Nos. (at Davanagere PS) • 765 kV, 240 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x80 MVAr including 1 switchable spare unit)	
3.	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits • 765 kV line bays – 2 Nos. (at Cuddapah) • 765 kV, 330 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x110 MVAr including 1 switchable spare unit for both bus reactor and line reactor)	
4.	+300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR • 400 kV bay – 1 No.	

Note:

i. *POWERGRID shall provide space for 2 Nos. of 765 kV GIS line bays (only 765 kV line terminal equipments) at Cuddapah for termination of Ananthapuram-II PS – Cuddapah 765 kV D/C line.*

ii. *Developer of Davanagere PS shall provide space for 2 Nos. of 765 kV line bays at Davanagere PS for termination of Ananthapuram-II PS – Davanagere 765 kV D/C line.*

3. The TSP shall ensure that design; construction and testing of all equipment, facilities, components and systems of the Project shall be in accordance with the provisions of the Transmission Service Agreement and applicable Rules/ Regulations, Orders and Guidelines issued by the Central Government.

4. **Transmission License:** The TSP shall obtain the Transmission License from the Commission.

5. **Bidding Process:** The Transmission Service Provider shall be selected through tariff based competitive bidding process for the Project based on meeting stipulated Qualification Requirements prescribed in Clause 2.1 of Section 2 of RFP and the lowest Quoted Transmission Charges discovered from Final Offers quoted during the e-reverse bidding. The selection of the

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TSP shall be subject to it obtaining Transmission License from the Commission, which, after expiry, may be further extended by such period as deemed appropriate by the Commission under powers vested with it to amend the conditions of the Transmission License.

The entire bidding process shall be conducted on electronic platform created by MSTC Limited.

The Bid shall be a single stage two envelope bid comprising the Technical Bid and the Financial Bid. The Bidders shall submit the Bid online through the electronic bidding platform. In addition to the online submission, the Bidder with lowest Final Offer will be required to submit original hard copies of Annexure 3, Annexure 4 (if applicable), Annexure 6 (if applicable) and Annexure 14 before issuance of LoI. There shall be no physical submission of the Financial Bid.

The Technical Bid shall be opened first and the Financial Bid of only the bidder who have qualified in the Technical Bid shall be opened. The Financial Bid will comprise of two rounds. In the first round the Initial Offer of the responsive bids would be opened and Quoted Transmission Charges of Initial Offer shall be ranked on the basis of ascending order. The Bidders, in the first fifty per cent of the ranking (with any fraction rounded off to higher integer) or four Bidders, whichever is higher, shall qualify for participating in the electronic reverse auction stage and submit their Final Offer.

6. The objective of the bidding process is to select a Successful Bidder pursuant to this RFP, who shall acquire one hundred percent (100%) of the equity shares of **SPV [which is under incorporation]** along with all its related assets and liabilities as per the provisions of the Share Purchase Agreement, at the Acquisition Price to be intimated by the BPC, twenty (20) days prior to the Bid Deadline.

   The **SPV [which is under incorporation]**, of which one hundred percent (100%) equity shares will be acquired by the Selected Bidder, shall be responsible as the TSP, for ensuring that it undertakes ownership, financing, development, design, engineering, procurement, construction, commissioning, operation and maintenance of the Project, and to provide Transmission Service as per the terms of the RFP Project Documents.

   The TSP shall ensure transfer of all project assets along with substation land, right of way and clearances to CTU or its successors or an agency as decided by the Central Government after 35 years from COD of project at zero cost and free from any encumbrance and liability. The transfer shall be completed within 90 days after 35 years from COD of project failing which CTU shall be entitled to take over the project assets Suo moto.

7. **Commencement of Transmission Service**: The Bidder shall have to commence Transmission Service in accordance with the provisions of the Transmission Service Agreement.

8. **Transmission Charges**: The Transmission Charges shall be payable by the Designated ISTS Customers in Indian Rupees through the CTU as per Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations as amended from time to time. Bidders shall quote the Transmission Charges as per the pre-specified structure, as mentioned in the RFP.

9. **Issue of RFP document:** The detailed terms and conditions for qualification and selection of the Transmission Service Provider for the Project and for submission of Bid are indicated in the RFP document. All those interested in purchasing the RFP document may respond in writing to **General Manager, Tel. +91 11 23443996, Fax +91 11 23443990, Email: pfccl.itp@pfcindia.com** at the address given in para 12 below with a non-refundable fee of **Rs. 5,00,000/- (Rupees Five Lakh Only) or US$ 7000/- (US Dollars Seven Thousand Only)** plus 18% GST, to be paid via electronic transfer to the following Bank Account:

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Bank Account Name	**: PFC Consulting Limited**
Account No.	**: 000705036117**
Bank Name	**: ICICI Bank**
IFSC	**: ICIC0000007**
Branch	**: Connaught Place, New Delhi-110001**

latest by **December 18, 2024.** Immediately after issuance of RFP document, the Bidder shall submit the Pre-Award Integrity Pact in the format as prescribed in **Annexure B**, which shall be applicable for and during the bidding process, duly signed on each page by any whole-time Director / Authorized Signatory, duly witnessed by two persons, and shall be submitted by the Bidder in two (2) originals in a separate envelope, duly superscripted with Pre-Award Integrity Pact. The Bidder shall submit the Pre-Award Integrity Pact on non-judicial stamp paper of Rs. 100/- each duly purchased from the National Capital Territory of Delhi. In case the Bidder is in a consortium, the Pre-Award Integrity Pact shall be signed and submitted by each member of the Consortium separately.

The RFP document shall be issued to the Bidders on any working day from **October 15, 2024 to December 18, 2024, between 10:30 hours (IST) to 16:00 hours (IST).** The BPC, on written request and against payment of the above-mentioned fee by any Bidder shall promptly dispatch the RFP document to such Bidder by registered mail/ air mail. BPC shall, under no circumstances, be held responsible for late delivery or loss of documents so mailed.

10. **Receipt and opening of Bid:** The Bid must be uploaded online through the electronic bidding platform on or before **15:00 hours (IST) on December 19, 2024**. Technical Bid will be opened by the Bid Opening Committee on the same day at 15:30 hours (IST) in the office of Central Electricity Authority, in the online presence of Bidders' representatives who wish to attend. If the Bid Deadline is a public holiday at the place of submission of Bid, it shall be opened on the next working day at the same time and venue. In addition to the online submission, the Bidder with lowest Final Offer will be required to submit original hard copies of Annexure 3, Annexure 4 (if applicable), Annexure 6 (if applicable) and Annexure 14 before issuance of LoI. Bidders meeting the Qualification Requirements, subject to evaluation as specified in Clause 3.2 to 3.4 shall be declared as "Qualified Bidders" and eligible for opening of Initial Offer.

11. The RFP document is not transferable. BPC reserves the right to reject all Bid and/or annul the process of tariff based competitive bidding for selection of Bidder as TSP to execute the Project without assigning any reason. BPC shall not bear any liability, whatsoever, in this regard.

12. **Nodal person for enquiries and clarifications**

All correspondence and clarification in respect of RFP document shall be addressed to:

General Manager
PFC Consulting Limited
9th Floor, A-Wing, Statesman House
Connaught Place, New Delhi - 110001, India
Tel. + 91-11-23443996
Fax + 91-11-23443990
Email: pfccl.itp@pfcindia.com

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DISCLAIMER

1. This Request for Proposal (RFP) document is not an agreement or offer by the BPC to the prospective Bidders or to any other party. The purpose of this RFP document is to provide interested parties with information to assist the formulation of their Bid. The RFP document is based on material and information available in public domain.

2. This RFP, along with its Annexures, is not transferable and the information contained therein are to be used only by the person to whom it is issued. It may not be copied or distributed by the recipient to third parties (other than in confidence to the recipient's professional advisors). In the event that the recipient does not continue with its involvement in the Project in accordance with this RFP, this RFP must be kept confidential.

3. While this RFP has been prepared in good faith, neither the BPC nor its employees or advisors/consultants make any representation or warranty expressed or implied as to the accuracy, reliability or completeness of the information contained in this RFP. The Bidders shall satisfy themselves, on receipt of the RFP document, that the RFP document is complete in all respects. Intimation of any discrepancy shall be given to this office immediately. If no intimation is received from any Bidder within ten (10) days from the date of issue of this RFP document on or before the date & time mentioned in this RFP, it shall be considered that the issued document, complete in all respects, has been received by the Bidders.

   This bidding process is in accordance with the Bidding Guidelines issued by Ministry of Power, Government of India under Section 63 of the Electricity Act, 2003. Revisions or amendments in these Bidding Guidelines may cause the BPC to modify, amend or supplement this RFP document, including the RFP Project Documents to be in conformance with the Bidding Guidelines.

4. This RFP document includes statements, which reflect various assumptions arrived at by BPC in order to give a reflection of current status in the RFP. These assumptions should not be entirely relied upon by Bidders in making their own assessments. This RFP document does not purport to contain all the information each Bidder may require and may not be appropriate for all persons. It is not possible for BPC to consider the investment objectives, financial situation and particular needs of each party who reads or uses this RFP document. Certain Bidders may have a better knowledge of the Project than the others. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this RFP document and obtain independent advice from appropriate sources.

5. Neither BPC nor their employees or consultants make any representation or warranty as to the accuracy, reliability or completeness of the information in this RFP document.

6. Neither BPC, its employees nor its consultants will have any liability to any Bidder or any other person under the law of contract, tort, the principles of restitution or unjust enrichment or otherwise for any loss, expense or damage which may arise from or be incurred or suffered in connection with anything contained in this RFP document, any matter deemed to form part of this RFP document, the award of the Project, the information supplied by or on behalf of BPC or its employees, any consultants or otherwise arising in any way from the qualification process for the said Project.

7. By participating in the bidding process, each of the Bidder shall have acknowledged and accepted that it has not been induced to enter into such agreement by any representation or warranty, expressed or implied, or relied upon any such representation or warranty by or on behalf of BPC or any person working in the bidding process.

8. BPC may in its absolute discretion, but without being under any obligation to do so, update, amend

or supplement this RFP document. Such updations, amendments or supplements, if any, will however be circulated to the Bidders not later than 15 days prior to the last date for submission of Bid.

9. Each Bidder unconditionally agrees, understands and accepts that the BPC reserves the rights to accept or reject any or all Bids without giving any reason. Neither the BPC nor its advisers shall entertain any claim of any nature, whatsoever, including without limitations, any claim seeking expenses in relation to the preparation of Bids.

10. This RFP may be withdrawn or cancelled by the BPC at any time without assigning any reasons thereof. BPC further reserves the right, at its complete discretion to reject any or all of the Bids without assigning any reasons whatsoever.

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DEFINITIONS

Any capitalized term, used but not defined in this RFP, shall have the meaning ascribed to such term in the RFP Project Documents, or the Bidding Guidelines, in that order. In absence of availability of definitions in the foregoing references, the capitalized terms shall be interpreted in accordance with the Electricity Act 2003, Grid Code or any other relevant electricity law, rule or regulation prevalent in India, as amended or re-enacted from time to time, in that order.

The following terms are defined for use in this RFP:

"Acquisition Price" shall have the same meaning as defined in the Share Purchase Agreement;

"Affiliate" shall mean a company that either directly or indirectly

i. controls or

ii. is controlled by or

iii. is under common control with

a Bidding Company (in the case of a single company) or a member (in the case of a Consortium) and "**control**" means ownership by one entity of at least twenty six percent (26%) of the voting rights of the entity. As an illustration a chart is annexed hereto as Annexure – 12;

"Bid" shall mean Technical Bid and Financial Bid (Initial Offer and Final Offer) submitted by the Bidder, in response to this RFP, in accordance with the terms and conditions thereof;

"Bidder" shall mean either a single company (including its permitted successors and legal assigns) or a Consortium of companies (including its permitted successors and legal assigns) submitting a Bid in response to this RFP. Any reference to the Bidder includes Bidding Company, Bidding Consortium/ Consortium, Member in a Bidding Consortium and Lead Member of the Bidding Consortium jointly and severally, as the context may require;

"Bidding Company" shall refer to such single company (including its permitted successors and legal assigns) that has submitted a Bid for the Project;

"Bidding Consortium/ Consortium" shall refer to a group of companies (including their permitted successors and legal assigns) that has collectively submitted a Bid for the Project;

"Bidding Guidelines" shall mean the "Tariff Based Competitive-Bidding Guidelines for Transmission Service" and "Guidelines for Encouraging Competition in Development of Transmission Projects" issued by Government of India, Ministry of Power under Section – 63 of Electricity Act as amended from time to time;

"Bid Bond" shall mean the unconditional and irrevocable bank guarantee for **Rs.51.50 Crore (Rupees Fifty-One Crore Fifty Lakh Only)**, to be submitted along with the Technical Bid by the Bidder under Clause 2.11 of this RFP, as per the format prescribed in Annexure 14;

"Bid Deadline" shall mean the last date and time for submission of online Bid in response to this RFP, specified in Clause 2.7.1;

"Bid Process Coordinator or BPC" shall mean a person or its authorized representative as notified by the Government of India, responsible for carrying out the process for selection of Bidder who will acquire Transmission Service Provider;

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"Bid Security Declaration" shall mean the declaration to be submitted along with the Technical Bid by the Bidder in lieu of the Bid Bond as per the format prescribed in annexure 14A (only applicable for projects for which RFP has been Issued before 31.12.2021)

"CEA" shall mean the Central Electricity Authority constituted under Section - 70 of the Electricity Act;

"Commission" or "CERC" shall mean the Central Electricity Regulatory Commission of India constituted under Section-76 of The Electricity Act, 2003 and any successors and assigns;

"Conflict of Interest" A Bidder shall be considered to be in a Conflict of Interest with one or more Bidders in the same bidding process if they have a relationship with each other, directly or through a common company, that puts them in a position to have access to information about or influence the Bid of another Bidder.

Provided that if two or more bidders in the bidding process have formed a Joint Venture Company or Consortium to execute another project, the Bidders will not be considered to have Conflict of Interest;

"Commercial Operation Date (COD)" shall mean the date as per Article 6.2 of the Transmission Service Agreement;

"Consents, Clearances, Permits" shall mean all authorizations, licenses, approvals, registrations, permits, waivers, privileges, acknowledgements, agreements, or concessions required to be obtained from or provided by any concerned authority for the development, execution and performance of Project including without any limitation on the construction, ownership, operation and maintenance of the transmission lines and/or sub-stations;

"Contract Performance Guarantee" shall have the meaning as per Clause 2.12 of this RFP;

"Contract Year" shall mean the period beginning on the Scheduled COD, and ending on the immediately succeeding March 31 and thereafter each period of 12 months beginning on April 1 and ending on March 31 provided that:

(i) the last Contract Year shall end on the last day of the term of the Transmission Service Agreement;

"Infrastructure sector" shall mean such sectors notified by Department of Economic Affairs in its Gazette Notification no. 13/1/2017-INF dated 14th November, 2017 and as amended from time to time;

"CTU/Central Transmission Utility" shall have same meaning as defined in the Electricity Act, 2003;

"Designated ISTS Customers" or "DICs" shall have the meaning as ascribed in Regulation 2(l) of Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulation 2020 and as amended or modified from time to time;

"Effective Date" shall have the meaning as ascribed thereto in the Transmission Service Agreement;

"Element" shall mean-each Transmission Line or each circuit of the Transmission Lines (where there are more than one circuit) or each bay of the Sub-station or switching station or HVDC terminal or inverter station of the Project, including ICTs, Reactors, SVC, FSC, etc. forming part of the ISTS which will be owned, operated and maintained by the concerned ISTS Licensee, and which may have a separate scheduled COD as per Schedule 2 of the Transmission Service Agreement and may have a separate percentage for recovery of Transmission Charges on achieving COD as per Schedule 5 of the Transmission Service Agreement;

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"**National Committee on Transmission**" shall mean the committee constituted by the Ministry of Power, Government of India in term of the "Guidelines for Encouraging Competition in Development of Transmission Projects", as notified from time to time

"**Final Offer**" shall mean the Quoted Transmission Charges, required to be submitted as part of the Financial Bid on the electronic bidding platform during the e-reverse bidding stage. In case, no Final Offer is received during the e-reverse bidding stage then the lowest "Initial Offer" shall be deemed to be the Final Offer;

"**Financial Bid**" shall mean the Initial Offer and Final Offer, containing the Bidder's Quoted Transmission Charges, as per the format at Annexure – 21 of this RFP;

"**Financially Evaluated Entity**" shall mean the company which has been evaluated for the satisfaction of the financial requirement set forth in Clause **2.1.3** hereof;

"**Government**" shall mean the Central Government;

"**Grid Code**" / "**IEGC**" or "**State Grid Code**" shall mean the Grid Code specified by the Central Commission under clause (h) of sub-section (1) of Section 79 of the Electricity Act and/or the State Grid Code as specified by the concerned State Commission referred under clause (h) of sub-section (1) of Section 86 of the Electricity Act as applicable;

"**Initial Offer**" shall mean the Quoted Transmission Charges, required to be submitted as part of the Financial Bid on the electronic bidding platform along with the Technical Bid;

"**Inter State Generating Station**" or "**ISGS**" shall mean a Central / other generating station in which two or more states have shares and whose scheduling is to be coordinated by the Regional Load Dispatch Centre;

"**Inter-State Transmission System**" shall have same meaning as defined in the Electricity Act, 2003;

"**Lead Member of the Bidding Consortium**" or "**Lead Member**" shall mean a company who commits at least twenty six percent (26%) equity stake in the Project, meets the technical requirement as per Clause 2.1.2 and so designated by other Member(s) in Bidding Consortium;

"**Letter of Intent**" or "**LoI**" shall mean the letter to be issued by the BPC to the Bidder, who has been identified as the selected bidder, for award of the Project to such Bidder;

"**Member in a Bidding Consortium/Member**" shall mean each company in the Bidding Consortium;

"**MOP**" shall mean the Ministry of Power, Government of India;

"**MOEF**" shall mean the Ministry of the Environment and Forests, Government of India;

"**Nodal Agency**" shall mean CTU, which shall execute and implement the Transmission Service Agreement (TSA);

Provided that while taking major decisions, CTU shall consult CEA on technical matters and any other matter it feels necessary.

"**Parent Company**" shall mean an entity that holds at least twenty six percent (26%) of the paid - up equity capital directly or indirectly in the Bidding Company or in the Member in a Bidding Consortium, as the case may be;

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"Qualification Requirements" shall mean the qualification requirements as set forth in Section-2, Clause 2.1 of this RFP;

"Quoted Transmission Charges" shall mean the quoted single annual Transmission Charges submitted online through the electronic bidding platform by the Bidder as part of its Financial Bid as per the format in Annexure – 21 of this RFP;

"RFP" shall mean Request for Proposal document along with all schedules, formats, annexure and RFP Project Documents attached hereto, issued by BPC for tariff based competitive bidding process for selection of bidder who will acquire the TSP through e-reverse bidding to execute the Project, and shall include any modifications, amendments or alterations or clarifications thereto;

"RFP Project Documents" shall mean the following documents to be entered into in respect of the Project, by the parties to the respective agreements:

a. Transmission Service Agreement (TSA),

b. Share Purchase Agreement,

c. Agreement(s) required, if any, under Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations as amended from time to time and

d. Any other agreement, as may be required;

"Scheduled COD" shall have the meaning as ascribed hereto in Clause 2.6 of this RFP;

"Statutory Auditor" shall mean the auditor appointed under the provisions of the Companies Act, 1956 / Companies Act, 2013 (as the case may be) or under the provisions of any other applicable governing law;

"Share Purchase Agreement" shall mean the agreement amongst **PFC Consulting Limited, SPV [which is under incorporation]** and the Successful Bidder for the purchase of one hundred (100%) per cent of the shareholding of the **SPV [which is under incorporation]** for the Acquisition Price, by the Successful Bidder on the terms and conditions as contained therein;

"Successful Bidder" or **"Selected Bidder"** shall mean the Bidder selected pursuant to this RFP to acquire one hundred percent (100%) equity shares of **SPV [which is under incorporation]**, along with all its related assets and liabilities, which will be responsible as the TSP to establish the Project on build, own, operate and transfer basis as per the terms of the Transmission Service Agreement and other RFP Project Documents;

"Survey Report" shall mean the report containing initial information regarding the Project and other details provided as per the provisions of Clause 1.6.2.1.1 of this RFP;

"Technical Bid" shall mean the bid submitted online through the electronic bidding platform, containing the documents as listed out in Clause 2.5.2 of this RFP;

"Technically Evaluated Entity" shall mean the company which has been evaluated for the satisfaction of the technical requirement set forth in Clause 2.1.2 hereof;

"Transmission Charges" shall mean the Final Offer quoted by Selected Bidder and adopted by the Commission, and as computed in terms of the provisions of Schedule 4 of the TSA, payable to the ISTS Licensee by the Designated ISTS Customers, and collected / disbursed by the CTU, as per Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations as amended from time to time;

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"Transmission License" shall mean the license granted by the Commission in terms of the relevant regulations for grant of such license issued under the Electricity Act, 2003;

"Transmission Service Agreement" or **"TSA"** shall mean the agreement entered into between Nodal Agency and the TSP, pursuant to which the TSP shall build, own, operate and transfer the Project and make available the assets of the Project on a commercial basis;

"Transmission Service Provider" or "TSP" shall mean **SPV [which is under incorporation]** which has executed the Transmission Service Agreement and which shall be acquired by the Selected Bidder;

"Ultimate Parent Company" shall mean an entity which owns at least twenty six percent (26%) equity in the Bidding Company or Member of a Consortium, (as the case may be) and in the Technically Evaluated Entity and/or Financially Evaluated Entity (as the case may be) and such Bidding Company or Member of a Consortium, (as the case may be) and the Technically Evaluated Entity and/or Financially Evaluated Entity (as the case may be) shall be under the direct control or indirectly under the common control of such entity.

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SECTION – 1

INTRODUCTION

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SECTION 1

1. INTRODUCTION

1.1 The Government of India, Ministry of Power, vide its gazette notification no CG-DL-E-13092024-257122 dated September 12, 2024 has notified PFC Consulting Limited (PFCCL) to be the Bid Process Coordinator (BPC) for the purpose of selection of Bidder as Transmission Service Provider (TSP) to establish Inter-State transmission system for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"** through tariff based competitive bidding process.

The BPC hereby invites Bids from all prospective Bidders in accordance with this Request for Proposal (RFP) to select prospective Transmission Service Provider (TSP) in accordance with the "Tariff Based Competitive-Bidding Guidelines for Transmission Service" and "Guidelines for Encouraging Competition in Development of Transmission Projects" issued by Government of India, Ministry of Power under Section – 63 of the Electricity Act. The BPC shall select the Bidder having the prescribed technical and financial capability to become TSP and be responsible for establishing the Project in the state(s) of Andhra Pradesh and Karnataka. The TSP will make the Project available against payment of Transmission Charges, as adopted by the Commission, payable to the TSP, as per Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations as amended from time to time.

1.2 The TSP will be required to establish the following Inter State Transmission System for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"** (hereinafter referred to as 'Project') on build, own, operate and transfer basis, and to provide transmission service.

Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)		
S No.	**Name of Transmission Element**	**Scheduled COD in months from Effective Date**
1.	Establishment of 4x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level. • 765/400 kV, 1500 MVA, ICTs – 4 Nos. (13x500 MVA incl. 1 spare unit) • 765 kV ICT bays – 4 Nos. • 400 kV ICT bays – 4 Nos. • 400/220 kV, 500 MVA, ICTs – 6 Nos. • 400 kV ICT bays – 6 Nos. • 220 kV ICT bays – 6 Nos. • 765 kV line bays – 4 Nos. (at Ananthapuram-II PS for termination of Ananthapuram-II – Davanagere and Ananthapuram-II – Cuddapah 765kV D/C lines) • 765 kV, 330 MVAr Bus Reactor – 2 Nos. • 765 kV Bus Reactor bays – 2 Nos. • 220 kV line bays – 6 Nos. • 220 kV Bus Sectionalizer : 1 set • 220 kV Bus Coupler (BC) Bay – 2 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos.	**24 Months**

	Future Space Provisions: • 765/400 kV, 1500 MVA, ICTs – 2 Nos. • 765 kV ICT bays – 2 Nos. • 400 kV ICT bays – 2 Nos. • 400/220 kV, 500 MVA, ICTs – 12 Nos. • 400 kV ICT bays – 12 Nos. • 220 kV ICT bays – 12 Nos. • 765 kV line bays – 8 Nos. (with provision for SLR) • 400 kV line bays – 12 Nos. (with provision for SLR) • 220 kV line bays – 20 Nos. • 220 kV Bus Sectionalizer : 2 sets • 220 kV Bus Coupler (BC) Bay – 2 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos. • 400 kV Bus Sectionalizer : 1 set	
2.	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits • 765 kV line bays – 2 Nos. (at Davanagere PS) • 765 kV, 240 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x80 MVAr including 1 switchable spare unit)	
3.	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits • 765 kV line bays – 2 Nos. (at Cuddapah) • 765 kV, 330 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x110 MVAr including 1 switchable spare unit for both bus reactor and line reactor)	
4.	+300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR • 400 kV bay – 1 No.	
Note: *i. POWERGRID shall provide space for 2 Nos. of 765 kV GIS line bays (only 765 kV line terminal equipments) at Cuddapah for termination of Ananthapuram-II PS – Cuddapah 765 kV D/C line.* *ii. Developer of Davanagere PS shall provide space for 2 Nos. of 765 kV line bays at Davanagere PS for termination of Ananthapuram-II PS – Davanagere 765 kV D/C line.*		

1.3 Project Description

Government of India has set a target of 500 GW generation capacity from non-fossil fuel resources by 2030. In this direction, MNRE has identified addition of 86 GW RE Potential in the State of Andhra Pradesh, Telangana, Karnataka and Tamil Nadu (Offshore) in Southern Region. Out of the identified (86 GW) RE Potential in Southern Region, 51 GW has been identified in the State of Andhra Pradesh (Ananthapur– 20 GW, Kurnool – 23 GW and Kadapa – 8 GW).

A report on Transmission System for Integration of over 500 GW RE Capacity has been published by CEA on 07.12.2022 which includes the comprehensive transmission system for integration of 51 GW RE Potential in Andhra Pradesh.

The "Transmission System for integration of Anantapur-II REZ - Phase-I" shall facilitate immediate integration and evacuation of power from RE generation projects for about 4.5 GW of RE potential in Ananthapur area out of the identified total potential of 20 GW in Ananthapur, Andhra Pradesh.

Presently, Connectivity of about 3500 MW (2500 MW at 220 kV level and 1000 MW at 400 kV level) has been granted / agreed for grant at Ananthapuram-II PS.

The Transmission System was discussed and agreed in the 32nd CMETS-SR held on 28.06.2024. The scheme was further discussed and agreed in the 52nd SRPC meeting held on 03.08.2024.

The National Committee on Transmission in its 22nd meeting held on 23.08.2024 has recommended the implementation of the subject transmission scheme through TBCB route and has identified the PFC Consulting Limited as BPC for bidding of the transmission scheme.

Ministry of Power vide Gazette notification no. CG-DL-E-13092024-257122 dated 12.09.2024 has notified the transmission scheme for implementation through TBCB route.

1.4 Transmission Grid Map

Transmission Grid Map indicating the location of the Project is enclosed as **Annexure 18** of this RFP for information and reference of the Bidders.

1.5 The objective of the bidding process is to select a Successful Bidder pursuant to this RFP, who shall acquire one hundred percent (100%) of the equity shares of **SPV [which is under incorporation]** along with all its related assets and liabilities as per the provisions of the Share Purchase Agreement, at the Acquisition Price to be intimated by the BPC, twenty (20) days prior to the Bid Deadline.

The **SPV [which is under incorporation]**, of which one hundred percent (100%) equity shares will be acquired by the Selected Bidder, shall be responsible as the TSP, for ensuring that it undertakes ownership, financing, development, design, engineering, procurement, construction, commissioning, operation and maintenance of the Project, and to provide Transmission Service as per the terms of the RFP Project Documents.

The TSP shall ensure transfer of all project assets along with substation land, right of way and clearances to CTU or its successors or an agency as decided by the Central Government after 35 years from COD of project at zero cost and free from any encumbrance and liability. The transfer shall be completed within 90 days after 35 years from COD of project failing which CTU shall be entitled to take over the project assets Suo moto.

1.6 Brief Scope of Work

1.6.1 Scope of Transmission Service Provider

The TSP's scope of work for the Project shall comprise, but not necessarily be limited to the following:

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1.6.1.1 Establishment, operation and maintenance of the Project on build, own, operate and transfer basis and completion of all the activities for the Project, including survey, detailed project report formulation, arranging finance, project management, necessary Consents, Clearances and Permits (way leave, environment & forest, civil aviation, railway/ road/river/canal/power crossing/PTCC, etc.), land compensation, design, engineering, equipment, material, construction, erection, testing & commissioning.

Further, the actual location of Greenfield substations (Switching Stations or HVDC Terminal or Inverter Stations) for a generation pooling substation and for load serving substations in the scope of TSP shall not be beyond 3 Km radius of the location proposed by the BPC in the survey report. However, actual location of any Greenfield intermediate Substations in the scope of TSP shall not be beyond 10 Km radius of the location proposed by the BPC in the Survey Report.

1.6.1.2 The TSP shall ensure that design, construction and testing of all equipment, facilities, components and systems of the Project shall be in accordance with Transmission Service Agreement and applicable Rules/ Regulations, Orders and Guidelines issued by the Central Government.

1.6.1.3 The TSP shall ensure timely completion of entire scope of Project in all respects and its operation and maintenance, as shall be specified in the RFP documents.

1.6.1.4 The TSP shall seek Transmission License from the Commission, as per the provisions of the Electricity Act and regulations made thereunder.

1.6.1.5 The TSP shall seek approval under Section 164 of Electricity Act, from CEA after acquisition of **SPV [which is under incorporation]**. The approval shall be granted by CEA generally within 30 days but in no case later than 45 days from the date of receipt of application (complete in all aspects).

1.6.2 **Scope of Bid Process Coordinator (BPC)**

BPC's scope of work is briefly outlined hereunder:

1.6.2.1 The BPC has initiated development of the Project and shall be responsible for the tasks in this regard as specified hereunder:

1. Provide to the Bidders a Survey Report for the Project at least Forty-Five (45) days prior to the Bid Deadline. The Survey Report shall include the suggested route with approximate route length, type of terrain likely to be encountered and its likely implication in terms of Right of Way (ROW), statutory clearances, location of substations or converter stations and land area to be acquired for the substation or converter station.

2. To obtain approval for laying of overhead transmission lines under Section 68 of Electricity Act, from the Government at least twenty (20) days prior to Bid Deadline.

3. To initiate acquisition of land for location specific substations, switching stations or HVDC terminal or inverter stations, if required.

4. To initiate process of seeking forest clearance, if required.

5. The BPC shall intimate to the Bidders, the Acquisition Price payable by the Selected Bidder to the **PFC Consulting Limited** for the acquisition of one hundred percent (100%) of the equity shareholding of **SPV [which is under incorporation]**, along with all its related assets and liabilities at least twenty (20) days prior to the Bid Deadline.

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6. The BPC shall ensure issuance of all finalized RFP Project Documents, at least fifteen (15) days prior to the Bid Deadline.

   Provided that for any delay in meeting the above obligations of the BPC within the specified time period above, the Bid Deadline as per Clause 2.7.1 shall be extended on a day for day basis.

1.6.2.2 The details and documents as may be obtained by the BPC/ project specific SPV in relation to the Project shall be handed over to the TSP on an as-is-where-is basis, so that it may take further actions to obtain Consents, Clearances and Permits.

1.7 All costs (including direct and indirect) incurred by the BPC/ project specific SPV in connection with the activities concerning the Project shall be recovered from the TSP, which shall be included in the Acquisition Price.

1.8 The Project is required to be completed progressively in accordance with the schedule prescribed in this RFP.

1.9 A company under the Companies Act, 1956/ Companies Act, 2013 by the name **SPV [which is under incorporation]** has been incorporated to initiate the activities for execution of the Project. The said company shall be acquired by the successful Bidder as per terms and conditions as may be prescribed in RFP.

1.10 The Ministry of Power and the appropriate state government(s) shall provide their support to the TSP, on best endeavor basis, in enabling the TSP to develop the Project.

1.11 All Bidders are required to submit their Bid in accordance with the instructions set forth in this RFP.

1.12 Once the Successful Bidder is selected, the details and documents as may be obtained by the BPC/ project specific SPV in relation to the Project, shall be handed over to the Successful Bidder on as is where basis, so that it may take further actions to obtain all necessary Consents, Clearances and Permits and the TSP shall not be entitled for any extensions in the Scheduled COD of the Project except as provided for in the TSA.

1.13 The assets of the Project shall be made available on a commercial basis as per the terms and conditions of the Transmission Service Agreement and Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations as amended from time to time.

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SECTION - 2

INFORMATION AND INSTRUCTIONS FOR BIDDERS

SECTION – 2

2. INFORMATION AND INSTRUCTIONS FOR BIDDERS

2.1 Qualification Requirements

2.1.1 The Bidder should be a company duly incorporated under the relevant laws (Bidding Company) or a Consortium of companies (Bidding Consortium) with one of the companies acting as the Lead Member of the Bidding Consortium. The Bidder shall be selected on meeting the Qualification Requirements specified in Section 2 of this RFP, as demonstrated by the Bidder's Technical Bid and the lowest Quoted Transmission Charges discovered from Final Offers quoted during the e-reverse bidding. A Bidding Consortium can participate in the bidding process for the Project if any Member of the Consortium has purchased the RFP document for such Project. Bidder who agrees and undertake to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide orders No. 11/5/2018 - Coord. dated 28.07.2020 for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard, shall be eligible hereunder. Further, it is clarified that Procuring Entity as defined in orders shall deemed to have included Selected Bidder and/ or TSP.

Besides, Department of Expenditure, Ministry of Finance vide Order (Public Procurement No 1) bearing File No. 6/18/2019-PPD dated 23.07.2020, Order (Public Procurement No 2) bearing File No. 6/18/2019-PPD dated 23.07.2020 and Order (Public Procurement No. 3) bearing File No. 6/18/2019-PPD, dated 24.07.2020, as amended from time to time, have issued directions regarding public procurement from a bidder of a country, which shares land border with India are also applicable.

2.1.2 **Technical requirement to be met by the Bidding Company or Lead Member of Bidding Consortium**

The Bidder must fulfill any one of the following technical requirements:

(i) Experience of development of projects in the Infrastructure Sector in the last five (5) years with aggregate capital expenditure of not less than **Rs.2,575 Crore (Rupees Two Thousand Five Hundred Seventy-Five Only)** or equivalent USD (calculated as per provisions in Clause 3.4.1). However, the capital expenditure of each project shall not be less than **Rs.515 Crore (Rupees Five Hundred Fifteen Crore Only)** or equivalent USD (calculated as per provisions in Clause 3.4.1).

For this purpose, capital expenditure incurred on projects that have been commissioned/ completed at least seven (7) days prior to Bid Deadline shall be considered. The capital expenditure discussed above shall be as capitalized and reflected in the audited books of accounts of the Technically Evaluated Entity. In case a clearly identifiable part of a project has been put into commercial operation, the capital expenditure on such part of the project shall be considered. The Technically Evaluated Entity must have either executed such projects itself or must have held directly or indirectly at least twenty six percent (26%) of the shareholding in the company that has executed the project(s) from the date of financial closure of the project(s) till the time of commissioning/completion of such project(s).

OR

(ii) Experience in construction of project in infrastructure sector: The Technically Evaluated Entity should have received aggregate payments not less than **Rs.2,575 Crore (Rupees Two Thousand Five Hundred Seventy-Five Only)** or equivalent USD (calculated as per provisions in Clause 3.4.1) from its client(s) for construction works fully completed during the last 5 (five) financial years. However, the payment received from each project shall not be less than **Rs.515 Crore (Rupees Five Hundred Fifteen Crore Only)** or equivalent USD (calculated as per provisions in Clause 3.4.1).

For this purpose, payments received on projects that have been commissioned/ completed at least seven (7) days prior to Bid Deadline shall be considered. Further only the payments (gross) actually received, during such 5 (five) financial years shall qualify for purposes of computing the technical capacity. For the avoidance of doubt, construction works shall not include cost of land, supply of goods or equipment except when such goods or equipment form part of a turn-key construction contract/ EPC contract for the project. Further, in cases where different individual contracts are signed between same entities for the same project, the cumulative payments received under such individual contracts shall be considered for meeting the qualification requirement.

The Technically Evaluated Entity may be the Bidding Company or the Lead Member of a Consortium or an Affiliate or Parent of such Bidding Company or the Lead Member, as the case may be.

Bidders shall furnish documentary evidence duly certified by authorized signatory of the Bidder who has been issued Power of Attorney in support of their technical capability as defined in Clause 2.1.2 of this RFP.

2.1.3 **Financial requirement to be met by the Bidding Company/Bidding Consortium**

2.1.3.1 The Bidder must fulfill following financial requirements:

A. Networth:

Networth should be not less than **Rs.1030 Crore (Rupees One Thousand Thirty Crore Only)** or equivalent USD (calculated as per provisions in Clause 3.4.1) computed as the Networth based on unconsolidated audited annual accounts (refer to Note below) of any of the last three (3) financial years as provided in Clause 2.2.3, immediately preceding the Bid Deadline. Also, the Networth of any of the last three (3) financial years should not be negative.

Note: Audited consolidated annual accounts of the Bidder may be used for the purpose of financial criteria provided the Bidder has at least 26% equity in each company whose accounts are merged in the audited consolidated accounts and provided further that the financial capability of such companies (of which accounts are being merged in the consolidated accounts) shall not be considered again for the purpose of evaluation of the Technical Bid. Bidders shall furnish prescribed Annexure 7(A) duly certified by authorized signatory of the Bidder who has been issued Power of Attorney and the Statutory Auditor and separate computation sheet for Networth duly certified by Statutory Auditor in support of their financial capability as defined in Clause 2.1.3 of this RFP.

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2.1.3.2 The Net worth shall be computed in the following manner by the Bidder:

A. Networth

=	Equity share capital
Add:	Reserves
Subtract:	Revaluation Reserves
Subtract:	Intangible Assets
Subtract:	Miscellaneous expenditures to the extent not written off and carry forward losses

2.1.3.3 If the Technical Bid is submitted by a Bidding Consortium the financial requirement shall be met individually and collectively by all the Members in the Bidding Consortium. The financial requirement to be met by each Member of the Bidding Consortium shall be computed in proportion to the equity commitment made by each of them for investment in the Project.

2.1.4 The Bidder may seek qualification on the basis of technical and financial capability of its Parent and/ or its Affiliate(s) for the purpose of meeting the Qualification Requirements. However, in the case of the Bidder being a Consortium, the Lead Member has to meet the technical requirement on its own or by seeking the technical capability of its Parent and/or its Affiliate(s). Authorization for use of such technical or financial capability shall have to be provided from its Parent and/or Affiliate(s) as per **Annexure 9.** The technical and financial capability of a particular company/ particular project, including its Parents and/or Affiliates, shall not be used directly or indirectly by more than one Bidder/ Member of a Bidding Consortium/ Bidding Company. However, development and construction experience of a particular project may be used by more than one company.

The determination of the relationship of Parent or Affiliate with the Bidding Company or with the Member of the Bidding Consortium, including the Lead Member, shall be on the date at the most seven (7) days prior to the last date of submission of the Bid. Documentary evidence to establish such relationship shall be furnished by the Bidder along with the Technical Bid.

If the Technically Evaluated Entity and/or Financially Evaluated Entity is an entity other than the Bidding Company or a Member in a Bidding Consortium, the Bidding Company or Member relying on such Technically Evaluated Entity and/or Financially Evaluated Entity will have to submit a legally binding undertaking supported by a board resolution from the Technically Evaluated Entity and/or Financially Evaluated Entity or its Ultimate Parent Company, that all the equity investment obligations of the Bidding Company or the Member of the Consortium shall be deemed to be equity investment obligations of the Technically Evaluated Entity and/or Financially Evaluated Entity or its Ultimate Parent Company, and in the event of any default the same shall be met by such evaluated entity or by or the Ultimate Parent Company. The Bidding Company or the Consortium Member shall have to provide information and documents relating to its relationship with such Technically Evaluated Entity and/or Financially Evaluated Entity including details about the equity shareholding between them as per Annexure 7(C).

2.1.5 A Bidder shall submit only one Bid in the same bidding process, either individually as Bidding Company or as a Member of a Bidding Consortium (including the Lead Member). It is further clarified that any of the Parent/ Affiliate/Ultimate Parent of the Bidder/ Member in a Bidding Consortium shall not separately participate directly or indirectly in the same bidding process. Further, if any Bidder is having a Conflict of Interest with other Bidders participating in the same bidding process, the Bids of all such Bidders shall be rejected.

2.1.6 Notwithstanding anything stated above, BPC reserves the right to verify the authenticity of the

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documents submitted for meeting the Qualification Requirements and request for any additional information and documents. BPC reserves the right at its sole discretion to contact the Bidder's bank and project references and verify the Bidder's information and documents for the purpose of bid evaluation.

2.1.7 The Qualified Bidder(s) will be required to continue to maintain compliance with the Qualification Requirements throughout the bidding process and till execution of the Transmission Service Agreement. Where the Technically Evaluated Entity and/or the Financially Evaluated Entity is not the Bidding Company or a Member in a Bidding Consortium, as the case may be, the Bidding Company or Member shall continue to be an Affiliate of the Technically Evaluated Entity and/or Financially Evaluated Entity till the execution of the Transmission Service Agreement. Failure to comply with the aforesaid provisions shall make the Bid liable for rejection at any stage.

2.1.8 The Selected Bidder will be required to continue to maintain compliance with the Qualification Requirements till the COD of the Project. Where the Technically Evaluated Entity and/or the Financially Evaluated Entity is not the Bidding Company or a Member in a Bidding Consortium, as the case may be, the Bidding Company or Member shall continue to be an Affiliate of the Technically Evaluated Entity and/or Financially Evaluated Entity till the COD of the Project. Failure to comply with the aforesaid provisions shall be dealt as per provisions of Transmission Service Agreement.

2.1.9 On the Bid Deadline, for the Bidder to be eligible to participate in the bidding process:

a. the Bidder & any of its Affiliate including any Consortium Member & any of its Affiliate, their directors or key personnel should not have been barred or included in the blacklist by any government agency or authority in India, the government of the jurisdiction of the Bidder or Members where they are incorporated or the jurisdiction of their principal place of business, any international financial institution such as the World Bank Group, Asian Development Bank, African Development Bank, Inter-American Development Bank, Asian Infrastructure Investment Bank etc. or the United Nations or any of its agencies; or

b. the Bidder & any of its Affiliate including any Consortium Member & any of its Affiliate or their directors should not have been convicted of any offence in India or abroad.

In case any investigation is pending against the Bidder, including any Consortium Member or Affiliate, or CEO or any of the directors/ manager/key managerial personnel of the Bidder /Consortium /Member or their Affiliates, full details of such investigation including the name of the investigating agency, the charge/offence for which the investigation has been launched, name and designation of persons against whom the investigation has been launched and other relevant information should be disclosed while submitting the Bid.

The Bidders shall confirm the above though a notarized affidavit as per Annexure 22.

2.2 Submission of Bid by the Bidder

2.2.1 The information and documents in Technical Bid will be submitted by the Bidder as per the formats specified in Section – 4 (Formats for RFP) of this document.

2.2.2 Strict adherence to the formats wherever specified, is required. Wherever, information has been sought in specified formats, the Bidder shall refrain from referring to brochures/ pamphlets. Non-adherence to formats and/ or submission of incomplete information may be a ground for declaring the Technical Bid as non-responsive. Each format has to be duly signed and stamped by the authorized signatory of Bidder.

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2.2.3 The Technical Bid shall contain unconsolidated/consolidated audited annual accounts (consisting of unabridged Balance Sheet, Profit and Loss Account, profit appropriation account, Auditors Report, etc.), as the case may be, of Bidding Company or each Member in Consortium including Lead Member or the Financially Evaluated Entity for the last three (3) financial years immediately preceding the last date for submission of Bid for the purpose of calculation of Networth.

In case the annual accounts for the financial year immediately preceding the Bid Deadline is not audited, the Bidder shall give declaration in this regard duly certified by its statutory auditor. In such a case, the Bidder shall provide the audited annual accounts for the three (3) financial years preceding the financial year as above for which the annual accounts have not been audited.

2.2.4 Bid submitted by a Bidding Consortium:

2.2.4.1 The Technical Bid shall contain a legally enforceable Consortium Agreement entered amongst the Members in the Bidding Consortium, designating one of the Members to be the Lead Member (as per Annexure 6). There shall be only one Lead Member which shall continue to hold twenty six percent (26%) equity in the TSP and cannot be changed upto one (1) year from the Commercial Operation Date (COD) of the Project. Each Member in Bidding Consortium shall duly sign the Consortium Agreement making it liable for raising the required funds for its respective equity investment commitment as specified in the Consortium Agreement. In absence of Consortium Agreement, the Technical Bid will not be considered for evaluation and will be rejected.

Provided that the Lead Member of the Bidding Consortium will be required to be liable to the extent of 100% of the total proposed commitment of equity investment of the Bidding Consortium i.e. for both its own equity contribution as well as the equity contribution of other Members.

Provided further that the Consortium Agreement shall not be amended without the explicit approval of the BPC.

The Lead Member of the Consortium will be the single point of contact for the purposes of the bid process before the date of signing of Share Purchase Agreement. Settlement of any dispute amongst the Consortium Members shall not be the responsibility of the BPC and/or the CTU and the BPC and/or the CTU shall not bear any liability whatsoever on this account.

2.2.4.2 The Lead Member should designate at the most two persons to represent the Consortium in its dealings with the BPC. The person(s) designated by the Lead Member should be authorized through a Power of Attorney (as per Annexure 3) to perform all tasks including, but not limited to providing information, responding to enquiries, signing of Technical Bid on behalf of the Consortium, etc. The Bidding Consortium shall provide board resolutions from their respective Boards for committing their respective portion of equity requirement for the Project. Additionally, the Lead member shall provide a Board resolution committing to make good any shortfall in the equity for the project, in case of any member not meeting its equity commitment.

2.2.4.3 The Technical Bid should also contain signed Letter of Consent (as per **Annexure 2**) from each Member in Consortium confirming that the entire Technical and Financial Bids has been reviewed and each element of the Technical and Financial Bids is agreed to by them including investment commitment for the Project.

In addition, the Technical Bid should also contain Board Resolution from each Member of the Consortium other than the Lead Member in favour of their respective authorized representatives for executing the POA, Consortium Agreement and signing of the requisite formats.

2.2.5 Bid submitted by a Bidding Company

2.2.5.1 The Bidding Company should designate at the most two persons to represent the Bidding Company in its dealings with BPC. The person(s) should be authorized to perform all tasks including, but not limited to providing information, responding to enquiries, signing of Technical and Financial Bids etc. The Bidding Company should submit, along with Technical Bid, a Power of Attorney (as per Annexure 3), authorizing the signatory of the Technical and Financial Bids. The Bidding Company shall submit the board resolution committing 100% of equity requirement for the Project, in the Technical Bid.

2.3 Clarifications & Pre-Bid Meeting

2.3.1 The Bidders may seek clarifications or suggest amendments to the RFP by sending an email to the BPC at the email id indicated in Clause 2.14 within the date and time mentioned in Clause 2.7.2. For any such clarifications or amendments, the Bidders should adhere to the format as per **Annexure – 19**.

2.3.2 Only those Bidders or their authorized representatives, who have purchased the RFP documents, are invited to attend the pre-bid meeting(s), which will take place on date as specified in Clause 2.7.2, or any such other date as notified by the BPC. The time and address of this would be intimated later.

2.3.3 The purpose of the pre-bid meeting will be to clarify any issues regarding the RFP, including in particular, issues raised in writing by the Bidders as per the provisions of Clause 2.3.1.

2.3.4 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

2.3.5 The BPC is not under any obligation to entertain / respond to suggestions made or to incorporate modifications sought for.

2.3.6 In case Bidders need any further clarifications not involving any amendments in respect of final RFP, they should ensure that request for such clarification is submitted through e-mail to the BPC at least ten (10) days prior to the Bid Deadline as mentioned in Clause 2.7.1. The BPC may issue clarifications only, as per its sole discretion, which is considered reasonable by it. Any such clarification issued shall be sent to all the Bidders to whom the RFP has been issued. Clarifications sought after this date shall not be considered in any manner and shall be deemed not to have been received. There shall be no extension in Bid Deadline on account of clarifications sought as per this clause 2.3.6.

2.4 Amendment of RFP

2.4.1 At any time before the timeline mentioned in Clause 2.7.1, the BPC may, for any reason, whether at its own initiative or in response to clarifications requested by any Bidder modify or amend the RFP, including the timelines specified in Clause 2.7.2 by issuance of addendum/modification/errata and/or revised document. Such document shall be notified in writing through a letter or fax or e-mail to all the entities to whom the RFP has been issued and shall be binding on them. In order to ensure that Bidders have reasonable time to take the modification into account in preparing their Bid, or for any other reasons, BPC may at its discretion, extend the due date for submission of Bid. Late receipt of any addendum/modification/errata and/or revised document will not relieve the Bidder from being bound by that modification.

2.4.2 All modifications shall become part of the terms and conditions of this RFP. No interpretation, revision or communication regarding this RFP is valid, unless made in writing.

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2.4.3 The amendment to the RFP shall be notified to all the Bidders through the electronic bidding platform and shall be binding on them.

2.5 The Bidding Process

The entire bidding process shall be conducted on electronic bidding platform created by **MSTC Limited**. The Bid shall comprise of the Technical Bid and the Financial Bid. The Bidders shall submit the Technical Bid & Financial Bid through the electronic bidding platform. In addition to the online submission, the Bidder with lowest Final Offer will be required to submit original hard copies of Annexure 3, Annexure 4 (if applicable), Annexure 6 (if applicable) and Annexure 14 before issuance of LoI. There shall be no physical submission of the Financial Bid.

Evaluation of Technical Bid will be carried out considering the information and documents furnished by the Bidders as required under this RFP. This step would involve responsiveness check, technical and financial evaluation of the details/ documents furnished by the Bidding Company / Bidding Consortium in support of meeting the Qualification Requirements. Bidders meeting the Qualification Requirements, subject to evaluation as specified in Clause 3.2 to 3.4 shall be declared as "Qualified Bidders" and eligible for opening of Initial Offer. The BPC shall also upload the list of all Qualified Bidders and Non-Qualified Bidders on the bidding portal along with the reasons for non-qualification. Also, the Financial Bids of Qualified Bidders shall be opened after at least 24 hours from the date of declaration of the Technically Qualified Bidders.

The Financial Bid will comprise of two rounds. In the first round the Initial Offer (submitted online along with the Technical Bids) of the responsive bids would be opened and Quoted Transmission Charges of Initial Offer shall be ranked on the basis of ascending order for determination of the Qualified Bidders as provided in Section-III of RFP. The Qualified Bidders, in the first fifty per cent of the ranking (with any fraction rounded off to higher integer) or four Qualified Bidders, whichever is higher, shall qualify for participating in the electronic reverse auction stage and submit their Final Offer.

Provided however, in case only one Bidder remains after the evaluation of Technical Bid as per Clause 3.2, 3.3 and Clause 3.4, the Initial Offer of such Bidder shall not be opened and the matter shall be referred to the Government.

Provided that in the event the number of qualified Technical Bids is between two and four, then each of the qualified Bidder shall be considered as "Qualified Bidders".

Provided that in the event of identical Quoted Transmission Charges discovered from the Initial Offer having been submitted by one or more Bidders, all such Bidders shall be assigned the same rank for the purposes of determination of Qualified Bidders. In such cases, all the Qualified Bidders who share the same rank till 50% of the rank (with any fraction rounded off to higher integer) determined above, shall qualify to participate in the electronic e-reverse auction stage. In case 50% of the ranks (with any fraction rounded off to higher integer) is having less than 4 (four) Bidders and the rank of the fourth (4th) Bidder is shared by more than one (1) Bidder, then all such Bidders who share the rank of the fourth (4th) Bidder shall qualify to participate in the electronic reverse auction.

The applicable ceiling for electronic reverse bidding shall be the lowest Quoted Transmission Charges discovered from the Initial Offer received from the Qualified Bidders. The Qualified Bidders shall be permitted to place their Final Offer on the electronic bidding platform, which is lower than zero point two five (0.25) % of the prevailing lowest Quoted Transmission Charges.

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The initial period for conducting the e-reverse bidding should be 2 hours which will be extended by 30 minutes from the last received bid time, if the bid is received during the last 30 minutes of the scheduled or extended bid time. Subsequently, it will be extended again by 30 minutes from the latest received bid time.

The technical details with respect to access to such electronic platform are provided in **Annexure-A** (Technical Details with respect to electronic reverse auction).

In case of any technical clarification regarding access to the electronic reverse auction platform or conduct of the auction process, the Bidders may contact MSTC directly at the address provided in **Annexure-A.**

2.5.1 Bid Formats

The Bids in response to this RFP will be submitted online through the electronic bidding platform by the Bidders in the manner provided in Clause 2.9. The Bids shall comprise of the following:

2.5.2 Technical Bid comprising of:

1. Covering Letter (as per prescribed format enclosed as **Annexure 1**);

2. Letter of Consent from Consortium Members in **Annexure 2;**

3. Power of attorney issued by the Bidding Company or the Lead Member of the Consortium, as the case may be, in favour of the person signing the Bid, in the format attached hereto as **Annexure 3**.

   Additionally, in case of a Bidding Consortium, the power of attorney in favour of the Lead Member issued by the other Members of the Consortium shall be provided in as per format attached hereto as **Annexure 4**. Further, the Lead Member shall furnish Board resolution(s) from each Member of the Consortium other than the Lead Member in favour of their respective authorized representatives for executing the POA and signing of the requisite formats.

   Provided that in the event the Bidding Company or the Lead Member of the Consortium or any Member of the Bidding Consortium, as the case may be, is a foreign entity, it may issue Board resolutions in place of power of attorney for the purpose of fulfilling these requirements.

4. Bidder's composition and ownership structure in **Annexure 5**

5. Format for Authorization submitted in Non-Judicial stamp paper duly notarized as per **Annexure 5** from the Bidding Company / each Member of the Consortium authorizing the BPC to seek reference from their respective bankers & others.

6. In case of Bidding Consortium, the Consortium Agreement shall be provided in as per format attached hereto as **Annexure 6**

7. Format of Qualification Requirement **(Annexures 7A, 7B, 7C and 7D)**

8. Bidders Undertakings and details of equity investment in Project (as per prescribed formats 1 and 2 of **Annexure 8**);

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9. Authorization from Parent / Affiliate of Bidding Company / Member of Bidding Consortium whose technical / financial capability has been used by the Bidding Company / Member of Bidding Consortium **(Annexure 9)**.

10. Undertaking from the Technically / Financially Evaluated Entity(ies) **OR** Undertaking from the Ultimate Parent Company, for total equity investment commitment, in the prescribed format in **Annexure – 10**, to meet any shortfall in the equity investment by the Selected Bidder in the **SPV [which is under incorporation]**.

Note: The effective Equity holding of the Selected Bidder in the **SPV [which is under incorporation]**, as specified in Clause 2.5.8.1 shall be computed as per the provisions of Clause 2.5.8.3 of this RFP.

Provided further, in case the Bidding Company or Member of a Consortium, (as the case may be) holds at least twenty six percent (26%) equity in such Technically/ Financially Evaluated Entities, whose credentials have been considered for the purpose of meeting the Qualification Requirements as per the RFP, no such Undertaking shall be required from the Technically / Financially Evaluated Entities.

11. Board resolutions, as per prescribed formats enclosed as **Annexure – 11**, duly certified by the Company Secretary or any Whole-time Director / Manager (supported by a specific Board Resolution), as applicable to the Bidder and mentioned hereunder,

(a) Board resolution from the Bidding Company (and any investing Affiliate / Parent Company / Ultimate Parent Company) committing one hundred percent (100%) in aggregate of the equity requirement for the Project - Format-1 of **Annexure 11**;

(b) Board resolutions from each of the Consortium Member of the Bidding Consortium (and any investing Affiliate / Parent Company / Ultimate Parent Company) together committing to one hundred percent (100%) in aggregate of equity requirement for the Project, in case Bidder is a Bidding Consortium - Format-1 of **Annexure 11**;

(c) In either of the cases as in (a) or (b) above as applicable, Board resolutions as per Format 2 of **Annexure 11** for total equity investment commitment from the Technically / Financially Evaluated Entity(ies) whose technical / financial credentials had been considered for the purpose of meeting Qualification Requirements as per the RFP

OR

Board resolutions as per Format 2 of **Annexure 11** from the Parent Company or the Ultimate Parent Company for total equity investment commitment.

Provided that such Board resolutions, as specified in (a) or (b) or (c) above, in case of a foreign entity, shall be supported by an unqualified opinion issued by an independent legal counsel practicing in the relevant country, stating that the Board resolutions are in compliance with the applicable laws of the respective jurisdictions of the issuing company and the authorizations granted therein are true and valid.

For clarity sake, illustrations identifying which Board Resolution shall be applicable in typical cases are provided in **Annexure 11A**.

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12. Format for Illustration of Affiliates at the most seven (7) days prior to Bid Deadline, duly certified by Company Secretary and supported by documentary evidence **(Annexure 12)**.

    Certified copy of the Register of Members / Demat Account Statement, Share Certificate, Annual Return filed with ROC etc. submitted as documentary evidence along with **Annexure 12.**

13. Disclosure as per **Annexure 13** regarding participation of any related companies in this bidding process.

14. Bid Bond, as per the prescribed format at **Annexure 14.**

15. Checklist for Technical Bid submission requirements as per **Annexure 16.**

16. Last three (3) financial years' unconsolidated / consolidated audited annual accounts / statements, as the case may be, of the Financially Evaluated Entity / Technical Evaluated Entity.

17. Unconsolidated audited annual accounts of both the TEE and the Bidding Company/Lead member, as applicable, for the financial years in which financial closure was achieved and the financial year in which the said project was completed / commissioned.

18. Copy of the Memorandum and Articles of Association and certificate of incorporation or other organizational document (as applicable), including their amendments, certified by the Company Secretary of Bidding Company or each Member in case of a Consortium including Lead Member.

19. For each project listed in Annexure 7(D), certified true copy of the certificates of final acceptance and / or certificates of good operating performance duly issued by owners or clients for the project, duly signed by authorized signatory.

In addition to the online submission of above formats through the electronic platform, the Bidder with lowest Final Offer will be required to submit original hard copies of Annexure 3, Annexure 4 (if applicable), Annexure 6 (if applicable) and Annexure 14 before issuance of LoI. In case, there is a discrepancy between the online submission and physical documents, the bid would be out rightly rejected and the bidder shall be construed to have engaged in the fraudulent practice as defined in Clause 2.19.3 with consequences as mentioned in Clause 2.19.2.

2.5.3 Financial Bid (as per prescribed format at Annexure-21)

Financial Bid shall comprise of: (i) the Initial Offer; and (ii) the Final Offer. The Initial Offer is required to be submitted along with the Technical Bid. It is hereby clarified that the Financial Bid will comprise of two rounds. In the first round the Initial Offer of the responsive bids would be opened and Quoted Transmission Charges of Initial Offer shall be ranked on the basis of ascending order for determination of the Qualified Bidders as provided in Section-III of RFP.

In accordance with clause 2.5 of this RFP, the qualified Bidders shall be eligible to participate in the electronic reverse auction and submit their Final Offer.

The applicable ceiling for electronic reverse bidding shall be the lowest Quoted Transmission Charges discovered from the Initial Offer received from the Qualified Bidders. The Qualified Bidders shall be permitted to place their Final Offer on the electronic bidding platform, which is lower than zero point two five (0.25) % of the prevailing lowest Quoted Transmission Charges.

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The initial period for conducting the e-reverse bidding should be 2 hours which will be extended by 30 minutes from the last received bid time, if the bid is received during the last 30 minutes of the scheduled or extended bid time. Subsequently, it will be extended again by 30 minutes from the latest received bid time.

The Bidders shall inter-alia take into account the following while preparing and submitting the Initial Offer and Final Offer of Financial Bid:-

a. The Bidders shall quote single annual Quoted Transmission Charges for a period of 35 years commencing from the Scheduled COD of the Project.

b. The Quoted Transmission Charges as per the format at Annexure-21 shall be inclusive of all charges and no exclusions shall be allowed. The Bidders shall take into account all costs including capital and operating, statutory taxes, duties, levies. Availability of the inputs necessary for operation and maintenance of the Project should be ensured by the TSP at the Project site and all costs involved in procuring the inputs (including statutory taxes, duties, levies thereof) at the Project site must be included in the Quoted Transmission Charges.

c. **Annexure 21** duly digitally signed by authorized signatory.

2.5.4 Wherever information has been sought in specified formats, the Bidders shall fill in the details as per the prescribed formats and shall refrain from referring to any other document for providing any information required in the prescribed format.

2.5.5 Transmission Charges

2.5.5.1 The Transmission Charges shall be specified in the Transmission Service Agreement and shall be payable to the TSP in Indian Rupees only. The Bidders shall quote single Transmission Charges as per the format at **Annexure – 21**.

2.5.5.2 The Transmission Charges of the Selected Bidder shall be inserted in Schedule 5 of the Transmission Service Agreement.

2.5.6 Bidders may note that:

a) All the information and documents in Bid shall be submitted in English language only.

b) Bidders shall mention the name, designation, telephone number, fax number, email address of the authorized signatory and complete address of the Bidder in the covering letter.

c) All pages of the Bid submitted shall be initialed and stamped by the authorized signatory on behalf of the Bidder.

d) A Bidder shall submit only one Bid in the same bidding process, either individually as Bidding Company or as a Member of a Bidding Consortium.

e) The technical and financial capability of a particular company / particular project (Parent and/ or Affiliate) shall not be used directly or indirectly by more than one Bidder/ Member of a Bidding Consortium including Lead Member / Bidding Company.

f) This Request for Proposal (RFP) document is not transferable. The RFP document and the information contained therein is for the use only by the Bidder to whom it is issued. It may not be copied or distributed by the recipient to third parties (other than in confidence to the

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recipient's professional advisors). In the event that the recipient does not continue with its involvement in the Project, this RFP document must be kept confidential.

g) Though adequate care has been taken while preparing this RFP document, the Bidder shall satisfy himself that the document is complete in all respects. Intimation of any discrepancy shall be given to the BPC immediately. If no intimation is received from any Bidder within ten (10) days from the date of issue of RFP document, it shall be considered that the RFP document is complete in all respects and has been received by the Bidder.

h) Bids submitted by the Bidder and opened on scheduled date and time as stipulated in this RFP shall become the property of the BPC and BPC shall have no obligation to return the same to the Bidder.

i) If any Bidder conceals any material information or makes a wrong statement or misrepresents facts or makes a misleading statement in its Bid, in any manner whatsoever, the BPC reserves the right to reject such Bid or cancel the Letter of Intent, if issued. If such event is discovered after the Effective Date, consequences specified in Transmission Service Agreement shall apply.

j) If for any reason the Bid of the Bidder with the lowest Quoted Transmission Charges is not selected or Letter of Intent issued to such Selected Bidder is cancelled or such Bidder withdraws its Bids, the BPC may :-

i. Invite all the remaining Bidders to revalidate or extend their respective Bid Security, as necessary, and match the Bid of the Bidder with the lowest Quoted Transmission Charges (the "second round of bidding") with following cases:

- If in the second round of bidding, only one Bidder matches the Bid of the Bidder with lowest Quoted Transmission Charges, it shall be the Selected Bidder.

- If two or more Bidders match the Bid of the Bidder with the lowest Quoted Transmission Charges in the second round of bidding, then the Bidder whose Quoted Transmission Charges was lower as compared to other Bidder(s) in the first round of bidding shall be the Selected Bidder. For example, if the third and fifth lowest Bidders in the first round of bidding offer to match the Bid of the Bidder with lowest Quoted Transmission Charges in the second round of bidding, the said third lowest Bidder shall be the Successful Bidder.

- In the event that no Bidder offers to match the Bid of the Bidder with the lowest Quoted Transmission Charges in the second round of bidding, the BPC may, in its discretion, invite fresh Bids (the "third round of bidding") from all Bidders except the Bidder which quoted the lowest Quoted Transmission Charges in the first round of bidding. In case the Bidders are invited for the third round of bidding to revalidate or extend their Bid Security, as necessary, and offer fresh Bids, they shall be eligible for submission of fresh Bids provided, however, that in such third round of bidding only such Bids shall be eligible for consideration which are lower than the Quoted Transmission Charges of the second lowest Bidder in the first round of bidding; or;

ii. Annul the bid process; or

iii. Take any such measure as may be deemed fit in the sole discretion of the BPC[1]

[1] **BPC shall record reasons for the same.**

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k) The BPC may, at its sole discretion, ask for additional information / document and/or seek clarifications from a Bidder after the Bid Deadline, inter alia, for the purposes of removal of inconsistencies or infirmities in its Bid. However, no change in the substance of the Quoted Transmission Charges shall be sought or permitted by the BPC.

l) Non submission and/or submission of incomplete data/ information required under the provisions of RFP shall not be construed as waiver on the part of BPC of the obligation of the Bidder to furnish the said data / information unless the waiver is in writing.

m) Bidders shall familiarize itself with the procedures and time frames required to obtain all Consents, Clearances and Permits.

n) All Bidders are required to ensure compliance with the standards and codes mentioned in Clause 1.6.1.2.

o) BPC reserves the right to reject all Bids and/or annul the process of tariff based competitive bidding for selection of Bidder as TSP to execute the Project without assigning any reason. BPC shall not bear any liability, whatsoever, in this regard.

p) Foreign companies submitting the Bid are required to follow the applicable law in their country for execution of POA, Consortium Agreement and affixation of Common Seal (wherever required) and in such cases, their Bid should be supported by an unqualified opinion issued by an independent legal counsel practicing in the relevant country, stating that execution of such POA, Consortium Agreement and the authorizations granted therein are true and valid. Foreign companies executing POA outside India shall necessarily pay the adequate stamp charges in India as per the provisions of Stamp Act.

2.5.7 Bidders to inform themselves fully

2.5.7.1. The Bidders shall make independent enquiry and satisfy themselves with respect to all the required information, inputs, conditions and circumstances and factors that may have any effect on his Bid. Once the Bidders have submitted their Bids, the Bidders shall be deemed to have inspected and examined the site conditions (including but not limited to its surroundings, its geological condition and the adequacy of transport facilities to the site), the laws and regulations in force in India, the transportation facilities available in India, the grid conditions, the adequacy and conditions of roads, bridges, railway sidings, ports, etc. for unloading and/or transporting heavy pieces of material and has based its design, equipment size and fixed its price taking into account all such relevant conditions and also the risks, contingencies and other circumstances which may influence or affect the transmission of power. Accordingly, each Bidder acknowledges that, on being selected as Successful Bidder and on acquisition of one hundred percent (100%) of the equity shares of the **SPV [which is under incorporation]**, the TSP shall not be relieved from any of its obligations under the RFP Project Documents nor shall the TSP be entitled to any extension in Scheduled COD mentioned in this RFP or financial compensation for any reason whatsoever.

2.5.7.2. In their own interest, the Bidders are requested to familiarize themselves with all relevant laws of India, including without limitation, the Electricity Act 2003, the Income Tax Act 1961, the Companies Act, 1956 / Companies Act, 2013 (as the case may be), Environment Protection Act 1986 and Forest (Conservation) Act, 1980, the Customs Act, the Foreign Exchange Management Act, Land Acquisition Act, 1894, the Indian Telegraph Act 1885, Labour & Employment Laws of India, [Insurance Act] the regulations/standards framed by the Commissions and CEA, all other related acts, laws, rules and regulations prevalent in India, as amended from time to time.

In addition to the above, the Bidders are required to familiarize themselves with all relevant

technical codes and standards, including but not limited to the Grid Code / State Grid Code, Central Electricity Authority (Installation and Operations of Meters) Regulations, 2006, Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007, Central Electricity Regulatory Commission Grant of Connectivity, Long-term Access and Medium - Term Open Access in Inter-State Transmission and related matters) Regulations, 2009, Central Electricity Authority (Technical Standards for construction of Electrical Plants and Electric Lines) Regulation, 2010, Central Electricity Authority (Technical Standards for Communication System in Power System Operation) Regulations, 2020, Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 and other relevant Rules/ Regulations/ Guidelines issued by the Central Government, the CERC and the CEA and amendments thereof.

The BPC shall not entertain any request for clarifications from the Bidders regarding the above laws / acts / rules / regulations / standards. Non-awareness of the same shall not be a reason for the Bidder to request for extension in Bid Deadline. The Bidders undertake and agree that, before submission of their Bid, all such factors as generally brought out above, have been fully investigated and considered while submitting their Bids.

2.5.7.3. The Survey Report has been prepared in good faith, and on best endeavor basis. Neither BPC & Nodal Agency nor their employees or advisors/consultants make any representation or warranty, express or implied, or accept any responsibility or liability, whatsoever, in respect of any statements or omissions made in the Survey Report, or the accuracy, completeness or reliability of information contained therein, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of such Survey Report, even if any loss or damage is caused to the Bidders by any act or omission on their part.

2.5.7.4. Bidders shall make best efforts and carry out its own due diligence upon survey report provided by BPC and shall consider all possible techno-commercial factors before submission of Bid. Bidders may also visit the route of the Transmission Lines associated with the Project and the surrounding areas and obtain / verify all information which they deem fit and necessary for the preparation of their Bid. Bidders may also carry out required surveys and field investigation for submission of their Bid. Bidders may also opt for any other route and is not bound to follow the route suggested in survey report provided by BPC.

2.5.7.5. Failure to investigate, examine and to inspect site or subsurface conditions fully shall not be grounds for a Bidder to alter its Bid after the Bid Deadline nor shall it relieve a Bidder from any responsibility for appropriately eliminating the difficulty or costs of successfully completing the Project.

2.5.7.6. The Selected Bidder shall obtain all necessary Consents, Clearances and Permits as required. The Bidders shall familiarize itself with the procedures and time frame required to obtain such Consents, Clearances and Permits.

2.5.7.7. The technical requirements of integrated grid operation are specified in the Indian Electricity Grid Code (IEGC). The Bidders should particularly acquaint themselves with the requirements of connection conditions, operating code for regional grids, scheduling and dispatch instructions/codes, etc. The Bidders are also advised to fully familiarize themselves with the real time grid conditions in the country. Information regarding grid parameters such as voltage and frequency is available on the websites of Regional / State Load Dispatch Centres.

2.5.8 Minimum Equity holding/Equity Lock-in

2.5.8.1 (a) The aggregate equity share holding of the Selected Bidder, in the issued and paid up equity

share capital of **SPV [which is under incorporation]** shall not be less than Fifty one percent (51%) up to a period of (1) one year after COD of the Project;

(b) In case the Selected Bidder is a Bidding Consortium, then any Member (other than the Lead Member) of such Bidding Consortium shall be allowed to divest its equity as long as the other remaining Members (which shall always include the Lead Member) hold the minimum equity specified in (a) above.

(c) If equity is held by the Affiliates, Parent Company or Ultimate Parent Company, then subject to the second proviso of this Clause 2.5.8.1 (c), such Affiliate, Parent Company or Ultimate Parent Company shall be permitted to transfer its shareholding in **SPV [which is under incorporation]** to another Affiliate or to the Parent Company / Ultimate Parent Company. If any such shareholding entity, qualifying as an Affiliate / Parent Company / Ultimate Parent Company, is likely to cease to meet the criteria to qualify as an Affiliate / Parent Company / Ultimate Parent Company, the shares held by such entity shall be transferred to another Affiliate / Parent Company / Ultimate Parent Company.

Provided that in case the Lead Member or Bidding Company is holding equity through Affiliate/s, Ultimate Parent Company or Parent Company, such restriction shall apply to such entities.

Provided further, that the aggregate equity share holding of the Bidding Consortium or a Bidding Company in the issued and paid up equity share capital of **SPV [which is under incorporation]** shall not be less than fifty one percent (51%) up to a period of one (1) year after COD of the Project and the lead Member of the Consortium shall have the equity share holding not less than twenty six percent (26%). In case the Selected Bidder is a Bidding Consortium, then any Member (other than the Lead Member) of such Bidding Consortium shall be allowed to divest its equity as long as the other remaining Members (which shall always include the Lead Member) hold the minimum equity specified in (a) above.

(d) All transfer(s) of shareholding of **SPV [which is under incorporation]** by any of the entities referred to above, shall be after prior written intimation to the Nodal Agency.

2.5.8.2 The Selected Bidder may invest in the equity share capital of **SPV [which is under incorporation]** through its Affiliate(s) or Ultimate Parent Company or Parent Company. Details of such investment will have to be specified in the Technical Bid as per Format 2 of Annexure 8 of the RFP. If the Selected Bidder so invests through any Affiliate(s) or Ultimate Parent Company or Parent Company, the Selected Bidder shall be liable to ensure that minimum equity holding/lock-in limits specified in Clause 2.5.8.1 and as computed as per the provisions of Clause 2.5.8.3 are still maintained.

2.5.8.3 For computation of effective Equity holding, the Equity holding of the Selected Bidder or its Ultimate Parent Company in such Affiliate(s) or Parent Company and the equity holding of such Affiliate (s) or Ultimate Parent Company in **SPV [which is under incorporation]** shall be computed in accordance with the example given below:

If the Parent Company or the Ultimate Parent Company of the Selected Bidder A directly holds thirty percent (30%) of the equity in **SPV [which is under incorporation]** then holding of Selected Bidder A in **SPV [which is under incorporation]** shall be thirty percent (30%);

If Selected Bidder A holds thirty percent (30%) equity of the Affiliate and the Affiliate holds fifty percent (50%) equity in **SPV [which is under incorporation]**, then for the purposes of ascertaining the minimum equity/equity lock-in requirements specified above, the effective holding of Bidder A in **SPV [which is under incorporation]** shall be fifteen percent (15%), (i.e., 30%* 50%);

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2.5.8.4 The provisions as contained in this Clause 2.5.8 and Article 19.1 of the Transmission Service Agreement shall override the terms of the Consortium Agreement submitted by the Bidder as part of the RFP.

2.6 Project Schedule

2.6.1. All Elements of the Project are required to be commissioned progressively as per the schedule given in the following table;

Sl. No	Name of the Transmission Element	Scheduled COD as per Gazette Notification	% of Quoted Transmissio Charges recoverable on Scheduled COD of the Element of the Project	Element(s) which are pre-required for declaring the commercial operation (COD of the respective Element
1.	Establishment of 4x1500 MVA, 765/400 and 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level	24 months	100	Element at Sl. No. 2, 3 and 4
2.	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			Element at Sl. No. 1, 3 and 4
3.	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			Element at Sl. No. 1, 2 and 4
4.	± 300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR			Element at Sl. No. 1, 2 and 3

The payment of Transmission Charges for any Element irrespective of its successful commissioning on or before its Scheduled COD shall only be considered after successful commissioning of the Element(s) which are pre-required for declaring the commercial operation of such Element as mentioned in the above table.

2.7 Due dates

2.7.1 The Bidders should submit the Bids online through the electronic bidding platform before the Bid Deadline i.e. on or before **15:00 hours (IST) on December 19, 2024**. In addition to the online

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submission, the Bidder with lowest Final Offer will be required to submit original hard copies of Annexure 3, Annexure 4 (if applicable), Annexure 6 (if applicable) and Annexure 14 before issuance of LoI.

2.7.2 Important timelines are mentioned below:

Date	Event
15-10-2024	Issuance of RFP
04-11-2024	Submission of written clarifications/amendments, if any, on the RFP / RFP Project Documents by Bidders so as to reach BPC by 1700 hours. Such written clarifications/amendments shall be in the format provided in Annexure-20.
11-11-2024	Pre-Bid meeting(s)
22-11-2024	Issue of written clarifications and revised RFP documents
02-12-2024	Issue of final RFP Project Documents
19-12-2024	Submission of Bid (Online submission of Bid through electronic bidding portal)
19-12-2024	Opening of Technical Bid
27-12-2024	Shortlisting and announcement of Qualified Bidders on bidding portal
30-12-2024	Opening of Financial Bid - Initial Offer
31-12-2024	Electronic reverse auction (Financial Bid – Final Offer) for the Qualified Bidders.
03-01-2025	Submission of original hard copies of Annexure 3, Annexure 4, Annexure 6, as applicable and Annexure 14 by the bidder with lowest Final Offer
08-01-2025	Selection of Successful Bidder and issue of LOI
20-01-2025	Signing of RFP Project Documents and transfer of SPV [which is under incorporation]

To enable BPC to meet the schedule, all Bidders are expected to respond expeditiously during the bidding process. If any milestone/activity falls on a day which is not a working day or which is a public holiday then the milestone/activity shall be achieved/ completed on the next working day.

2.8 Validity of the Bid

2.8.1 The Bid shall remain valid for a period of one hundred and eighty (180) days from the Bid Deadline. The BPC reserves the right to reject any Bid which does not meet aforementioned validity requirement.

2.8.2 The BPC may solicit the Bidders' consent for an extension of the period of validity of the Bid. The request and the response, thereafter, shall be in writing. In the event any Bidder refuses to extend its Bid validity as requested by the BPC, the BPC shall not be entitled to invoke the Bid Bond. A Bidder accepting the BPC's request for validity extension shall not be permitted to modify its Bid and such Bidder shall, accordingly, extend the validity of the Bid Bond as

requested by the BPC within seven (7) days of such request, failing which the Bid shall not be considered as valid.

2.9 Method of Submission

2.9.1 Both the Technical and Financial Bids duly filled in, all formats and supporting shall be scanned and uploaded online through electronic bidding platform in the manner specified in **Annexure A.**

2.9.2 It may be noted that Technical Bid shall not contain any information/document relating to Financial Bid. If Technical Bid contains any such information/documents, the BPC shall not be responsible for premature opening of the Financial Bid.

All pages of the Bid, except for the Bid Bond (**Annexure 14**) and any other document executed on non-judicial stamp paper, forming part of the Bid and corrections in the Bid, if any, must be signed by the authorized signatory on behalf of the Bidder. It is clarified that the same authorized signatory shall sign all pages of the Bid. However, any published document submitted in this regard shall be signed by the authorized signatory at least on the first and last page of such document.

2.9.3 No change or supplemental information to a Bid already submitted will be accepted after the Bid Deadline, unless the same is requested for by the BPC as per Clause 2.5.6 (k).

Provided that a Bidder shall always have the right to withdraw / modify its Bid before the Bid Deadline. No Technical Bid or Initial Offer shall be modified, substituted or withdrawn by the Bidder on or after the Bid Deadline.

2.10 Preparation cost

2.10.1 The Bidders shall be responsible for all the costs associated with the preparation of the Bid and participation in discussions and attending pre-bid meetings, and finalization and execution of the RFP Project Documents (other than the TSA), etc. BPC shall not be responsible in any way for such costs, regardless of the conduct or outcome of the process of tariff based competitive bidding for selection of Bidder as TSP as per Bidding Guidelines.

2.10.2 The cost of this RFP is **Rupees Five Lakh (Rs.5,00,000/-) or U.S. Dollar Seven Thousand Only (US$7,000 /-) plus GST** as per applicable rate, which shall be non-refundable. This amount shall be paid via electronic transfer to the following Bank Account:

Bank Account Name	**: PFC Consulting Limited**
Account No.	**: 000705036117**
Bank Name	**: ICICI Bank**
IFSC	**: ICIC0000007**
Branch	**: Connaught Place, New Delhi-110001**

Immediately after issuance of RFP document, the Bidder shall submit the Pre-Award Integrity Pact in the format as prescribed in **Annexure B**, which shall be applicable for and during the bidding process, duly signed on each page by any whole-time Director / Authorized Signatory, duly witnessed by two persons, and shall be submitted by the Bidder in two (2) originals in a separate envelope, duly superscripted with Pre-Award Integrity Pact. The Bidder shall submit the Pre-Award Integrity Pact on non-judicial stamp paper of Rs. 100/- each duly purchased from the National Capital Territory of Delhi. In case the Bidder is in a consortium, the Pre-Award Integrity Pact shall be signed and submitted by each member of the Consortium separately.

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2.11 Bid Bond

2.11.1. Each Bidder shall submit the Bid accompanied by Bid Bond issued by any of the Banks listed in Annexure-17. The Bid Bond shall be valid for a period of thirty (30) days beyond the validity of the Bid.

2.11.2. Subject to the provisions of Clause 2.15.5, the Bid Bond may be invoked by the BPC or its authorized representative, without any notice, demure, or any other legal process upon occurrence of any of the following:

- Bidder withdraws during the period of Bid Validity as specified in this RFP or as extended by mutual consent of the respective Bidder(s) and the BPC
- Failure to execute the Share Purchase Agreement as per the provisions of Clause 2.15.2; or
- Failure to furnish the Contract Performance Guarantee as per Clause 2.12; or
- Failure to acquire one hundred percent (100%) equity shares of **SPV [which is under incorporation]**, along with all its related assets and liabilities, in accordance with the provisions of Clause 2.15.2; or
- Failure to comply with the provisions of Clause 2.15.5 and Clause 2.15.6, leading to annulment of the award of the Project.
- Bidders submitting any wrong information or making any misrepresentation in their Bid as mentioned in Clause 2.5.6.

Intimation of the reasons of the invocation of the Bid Bond shall be given to the Selected Bidder by the BPC within three (3) working days after such invocation.

2.11.3. The Bid Bond of the Selected Bidder shall be returned on submission of the Contract Performance Guarantee as per Clause 2.12 and the relevant provisions of the Transmission Service Agreement.

2.11.4. The Bid Bond of all the Bidders, whose Bids are declared non-responsive, shall be returned within a period of thirty (30) days after the date on which the Financial Bids are opened.

2.11.5. The Bid Bond of all unsuccessful Bidders shall be returned and released by the BPC on the same day on which the **SPV [which is under incorporation]** is transferred to the Selected Bidder. The Bid Bond of the Successful Bidder shall be returned on submission of Contract Performance Guarantee as per Clause 2.12 of this RFP and the provisions of the Transmission Service Agreement.

2.12 Contract Performance Guarantee

Within ten (10) days from the date of issue of the Letter of Intent, the Selected Bidder, on behalf of the TSP, will provide to the Nodal Agency the Contract Performance Guarantee for an amount of **Rs.128.75 Crore (Rupees One Hundred Twenty-Eight Crore Seventy-Five Lakh Only)**. The Contract Performance Guarantee shall be initially valid for a period up to three (3) months after the Scheduled COD of the Project and shall be extended from time to time to be valid for a period up to three (3) months after the COD of the Project and thereafter shall be dealt with in accordance with the provisions of the Transmission Service Agreement. The Contract Performance Guarantee shall be issued by any of the banks listed in Annexure-17.

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In case the Selected Bidder is unable to obtain the Contract Performance Guarantee for the total amount from any one bank specified in **Annexure-17**, the Selected Bidder may obtain the same from not more than three (3) banks specified in Annexure-17.

2.13 Opening of Bids

Technical Bid will be opened by the Bid Opening Committee as per the following time schedule and in the office of Central Electricity Authority, in the online presence of Bidders' representatives who wish to attend:

Opening of Envelope (Technical Bid): **15:30 hours (IST) on December 19, 2024** or such other dates as may be intimated by BPC to the Bidders.

In the event of any of above dates falling on a day which is not a working day or which is a public holiday, then the bids shall be opened on the next working day at the same venue and time.

Opening of Initial Offer: Initial Offer shall be opened by the Bid Opening Committee in presence of the Bid Evaluation Committee at **15:00 hours (IST) on December 30, 2024** in the office of CEA.

The following information from each Bid will be read out to all the Bidders at the time of opening of Technical Bid:

- Name of the Bidding Company / Consortium Members in case of Bidding Consortium.

Information to be provided after opening of Initial Offer:

Only the lowest Initial Offer (s) shall be communicated to all the Qualified Bidders to participate in the e-reverse bidding process. During the e-reverse bidding process only the lowest prevailing bid should be visible to all the bidders on the electronic platform.

2.14 Enquiries

Written clarifications on the RFP and other RFP Project Documents as per Clause 2.3 and 2.4 may be sought from:

General Manager
PFC Consulting Limited
9th Floor, Wing-A, Statesman House,
Connaught Place, New Delhi - 110001
Tel. + 91 11 23443996
Fax + 91 11 23443990
Email: pfccl.itp@pfcindia.com

2.15 Other Aspects

2.15.1 The draft of the Transmission Service Agreement has been attached to this RFP. In addition to above, the following documents have also been attached to this RFP:

a) Share Purchase Agreement

When the drafts of the above RFP Project Documents are provided by the BPC, these RFP Project Documents shall form part of this RFP as per **Formats – 1 & 2** of **Annexure 20.**

Upon finalization of the RFP Project Documents after incorporating the amendments envisaged in Clause 2.4 of this RFP, all the finalized RFP Project Documents shall be provided by BPC to the Bidders at least fifteen (15) days prior to the Bid Deadline.

The Transmission Service Agreement and Share Purchase Agreement shall be signed in required number of originals so as to ensure that one (1) original is retained by each party to the Agreement(s) on the date of transfer of SPV.

Note: Kindly check 2.15.2. (b) point from SBDs

2.15.2 Within ten (10) days of the issue of the Letter of Intent, the Selected Bidder shall:

a) Provide the Contract Performance Guarantee in favour of the Nodal Agency as per the provisions of Clause 2.12;

b) Execute the Share Purchase Agreement and the Transmission Service Agreement;

c) acquire, for the Acquisition Price, one hundred percent (100%) equity shareholding of **SPV [which is under incorporation]** from PFC Consulting Limited, who shall sell to the Selected Bidder, the equity shareholding of **SPV [which is under incorporation]**, along with all its related assets and liabilities;

Stamp duties payable on purchase of one hundred percent (100%) of the equity shareholding of **SPV [which is under incorporation]**, along with all its related assets and liabilities, shall also be borne by the Selected Bidder.

Provided further that, if for any reason attributable to the BPC, the above activities are not completed by the Selected Bidder within the above period of ten (10) days as mentioned in this Clause, such period of ten (10) days shall be extended, on a day for day basis till the end of the Bid validity period.

2.15.3 After the date of acquisition of the equity shareholding of **SPV [which is under incorporation]**, along with all its related assets and liabilities, by the Selected Bidder,

i. the authority of the BPC in respect of this Bid Process shall forthwith cease and any actions to be taken thereafter will be undertaken by the Nodal Agency,

ii. all rights and obligations of **SPV [which is under incorporation]**, shall be of the TSP,

iii. any decisions taken by the BPC prior to the Effective Date shall continue to be binding on the Nodal Agency and

iv. contractual obligations undertaken by the BPC shall continue to be fulfilled by the TSP.

v. Further, the TSP shall execute the Agreement(s) required, if any, under Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations as amended from time to time.

2.15.4 Within five (5) working days of the issue of the acquisition of the SPV by the Successful Bidder, the TSP shall apply to the Commission for grant of Transmission License and make an application to the Commission for the adoption of Transmission Charges, as required under Section – 63 of The Electricity Act 2003.

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2.15.5 If the Selected Bidder / TSP fails or refuses to comply with any of its obligations under Clauses 2.15.2, 2.15.3 and 2.15.4, and provided that the other parties are willing to execute the Share Purchase Agreement and PFC Consulting Limited is willing to sell the entire equity shareholding of **SPV [which is under incorporation]**, along with all its related assets and liabilities, to the Selected Bidder, such failure or refusal on the part of the Selected Bidder shall constitute sufficient grounds for cancellation of the Letter of Intent. In such cases, the BPC / its authorized representative(s) shall be entitled to invoke the Bid Bond of the Selected Bidder.

2.15.6 If the TSP fails to obtain the Transmission License from the Commission, it will constitute sufficient grounds for annulment of award of the Project.

2.15.7 The annulment of award, as provided in Clauses 2.15.5 and 2.15.6 of this RFP, will be done by the Government on the recommendations of National Committee on Transmission. However, before recommending so, National Committee on Transmission will give an opportunity to the Selected Bidder / TSP to present their view point.

2.15.8 The annulment of the award, under Clause 2.15.5 or 2.15.6 of this RFP, shall be sufficient grounds for blacklisting the bidder, whose award has been annulled, for a period of five years or more, as decided by the National Committee on Transmission, provided that the blacklisting shall be done only after giving the bidder an opportunity for showing cause.

2.16 Confidentiality

2.16.1 The parties undertake to hold in confidence this RFP and RFP Project Documents and not to disclose the terms and conditions of the transaction contemplated hereby to third parties, except:

a) to their professional advisors;

b) to their officers, contractors, employees, agents or representatives, financiers, who need to have access to such information for the proper performance of their activities;

c) disclosures required under Law, without the prior written consent of the other parties of the concerned agreements.

Provided that the TSP agrees and acknowledges that the Nodal Agency may at any time, disclose the terms and conditions of the RFP and RFP Project Documents to any person, to the extent stipulated under the Law or the Bidding Guidelines.

2.17 Right of the BPC to reject any Bid

BPC reserves the right to reject all or any of the Bids/ or cancel the RFP without assigning any reasons whatsoever and without any liability.

2.18 Non submission and/or submission of incomplete data/ information required under the provisions of RFP shall not be construed as waiver on the part of BPC of the obligation of the Bidder to furnish the said data / information unless the waiver is in writing.

2.19 Fraudulent and Corrupt Practices

2.19.1. The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bid process and subsequent to the issue of the LoI Notwithstanding anything to the contrary contained herein, or in the LoI, the BPC shall reject a

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Bid, withdraw the LoI, as the case may be, without being liable in any manner whatsoever to the Bidder, if it determines that the Bidder has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bid process. In such an event, the BPC shall forfeit the Bid Bond, without prejudice to any other right or remedy that may be available to the BPC hereunder or otherwise.

2.19.2. Without prejudice to the rights of the BPC under Clause 2.19.1 hereinabove and the rights and remedies which the BPC may have under the LoI, if a Bidder is found by the BPC to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bid process, or after the issue of the LoI, such Bidder & its Affiliates shall not be eligible to participate in any tender or RFP issued by any BPC for an indefinite period from the date such Bidder is found by the BPC to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practices, as the case may be.

2.19.3. For the purposes of this Clause 2.19, the following terms shall have the meaning hereinafter respectively assigned to them:

a) **"corrupt practice"** means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bid process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the BPC who is or has been associated or dealt in any manner, directly or indirectly with the Bid process or the LoI or has dealt with matters concerning the Transmission Service Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the BPC, shall be deemed to constitute influencing the actions of a person connected with the Bid Process); or (ii) engaging in any manner whatsoever, whether during the Bid Process or after the issue of the LoI or after the execution of the Transmission Service Agreement, as the case may be, any person in respect of any matter relating to the Project or the LoI or the Transmission Service Agreement, who at any time has been or is a legal, financial or technical adviser of the BPC in relation to any matter concerning the Project;

b) **"Fraudulent practice"** means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bid process;

c) **"Coercive practice"** means impairing or harming, or threatening to impair or harm, directly or indirectly, any person or property to influence any person's participation or action in the Bid process;

d) **"undesirable practice"** means (i) establishing contact with any person connected with or employed or engaged by the BPC with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bid process; or (ii) having a Conflict of Interest; and

e) **"Restrictive practice"** means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Bid process.

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SECTION - 3

EVALUATION OF THE TECHNICAL AND FINANCIAL BID

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SECTION 3

3. EVALUATION OF BID

3.1. The evaluation process of Technical Bid comprises the following five steps:

Step I – Responsiveness check
Step II- Compliance with submission requirements
Step III– Evaluation of Technical Bids
Step IV– Evaluation of Financial Bids
Step V – Bidder Selection

3.2. STEP I – Responsiveness check

The Technical Bid submitted by the Bidder shall be initially scrutinized to establish "Responsiveness". Subject to clause 2.5.6 (k), any of the following conditions shall cause the Technical Bid to be "Non-responsive":

a) Technical Bid that are incomplete.

b) Technical Bid not signed by authorized signatory and / or stamped in the manner indicated in this RFP.

c) All pages of the Technical Bid submitted but not initialed by the authorized signatories on behalf of the Bidder.

d) Technical Bid not including the covering letter as per **Annexure 1**.

e) Technical Bid submitted by a Bidding Consortium not including the Consortium Agreement.

f) Technical Bid contains material inconsistencies in the information and documents submitted by the Bidder, affecting the Qualification Requirements.

g) Bidder submitting or participating in more than one Bid either as a Bidding Company or as a Member of Bidding Consortium.

h) More than one Member of the Bidding Consortium or a Bidding Company using the credentials of the same Parent/Affiliate.

i) Information not submitted in formats specified in the RFP.

j) Applicable Board resolutions, or any other document, as provided in Clause 2.5.2, not being submitted;

k) Bid not accompanied by a valid Bid Bond;

l) Non submission of power of attorney, supported by a Board resolution;

m) Bid validity being less than that required as per Clause 2.8 of this RFP;

n) Bid not containing Format-1 (Bidders' Undertakings) of **Annexure-8;**

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o) Bidder having Conflict of Interest

p) The Bidder has not submitted a disclosure as per Annexure 13.

q) Bidders delaying in submission of additional information or clarifications sought by the BPC.

r) If the Bidder makes any misrepresentation as specified in Clause 3.7.

s) Bid being conditional in nature.

3.3. STEP II - Compliance with submission requirements

Each Bidder's Technical Bid shall be checked for compliance with the submission requirements set forth in this RFP before the evaluation of Technical Bid is taken up. **Annexure 16** and **Annexure 11A** shall be used to check whether each Bidder meets the stipulated requirements.

3.4. STEP III -Evaluation of Technical Bid

Evaluation of Technical Bid will be carried out considering the information and documents furnished by the Bidders as required under this RFP. This step would involve technical and financial evaluation of the details/ documents furnished by the Bidding Company / Bidding Consortium in support of meeting the Qualification Requirements.

3.4.1. Interpolation of Financial Data.

For the Qualification Requirements data provided by the Bidders in foreign currency, equivalent rupees of Networth will be calculated using bills selling exchange rates (card rate) USD/INR of State Bank of India prevailing on the date of closing of the accounts for the respective financial year as certified by their Banker.

For the purpose of calculating the aggregate capital expenditure/construction experience of the projects completed/ commissioned where such projects are executed outside India and capital expenditure is denominated in foreign currency, bills selling exchange rates (card rate) USD/INR of State Bank of India prevailing on the date of closing of the financial year in which the projects were completed and as certified by their Banker shall be considered.

For the projects executed in the current financial year bills selling (card rate) USD/INR of State Bank of India prevailing on seven (7) days prior to the last date of submission of Technical Bid and as certified by their Banker shall be considered.

For currency other than USD, Bidders shall convert such currency into USD as per the exchange rates certified by their Banker prevailing on the relevant date and used for such conversion. Such Bidders shall submit necessary certification from their Banker for the exchange rate used in the conversation.

If the exchange rate for any of the above dates is not available, the rate for the immediately available previous day shall be taken into account.

3.4.2. Bidders meeting the Qualification Requirements, subject to evaluation as specified in Clauses 3.2 to 3.4 shall be declared as Qualified Bidders and eligible for opening of Initial Offer.

3.4.3. The BPC shall upload the list of all Qualified Bidders and Non-Qualified Bidders on the bidding

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portal along with the reasons for non-qualification.

3.5. STEP IV - Evaluation of Financial Bids

3.5.1. The Bids which have been found Qualified by the BPC, based on the Steps I to III as specified above in Clauses 3.2.to 3.4, shall be opened and Quoted Transmission Charges of such Initial Offer shall be ranked on the basis of the ascending Initial Offer submitted by each Qualified Bidder.

Based on such ranking of the Qualified Bidders, in the first fifty per cent of the ranking (with any fraction rounded off to higher integer) or four Qualified Bidders, whichever is higher, shall qualify for participating in the electronic reverse auction.

Provided however, in case only one Bidder remains after the Evaluation of Technical Bid (Steps 1 to III) as per Clause 3.2 to 3.4, the Initial Offer of such Bidder shall not be opened and the matter shall be referred to the Government.

Provided that in the event the number of Qualified Bidders is between two and four, then each of the responsive Bidder shall be considered as Qualified Bidders.

Provided that in the event of identical Quoted Transmission Charges discovered from the Initial Offer having been submitted by one or more Bidders, all such Bidders shall be assigned the same rank for the purposes of determination of Qualified Bidders. In such cases, all Qualified Bidders who shares the same rank till 50% of the rank (with any faction rounded off to higher integer) determined above, shall qualify to participate in the electronic reverse auction stage. In case 50% of the rank is having less than four (4) Bidders and the rank of the fourth (4th) Bidder is shared by more than one Bidder, then all such all such Bidders who share the rank of the fourth Bidder shall qualify to participate in the electronic reverse auction.

3.5.2. The Financial Bids comprising of both Initial Offer and Final Offer submitted by the Bidders shall be scrutinized to ensure conformity with the provisions of Clause 2.5.3 of this RFP. Any Bid not meeting any of the requirements as per Clause 2.5.3 of this RFP may cause the Bid to be considered "Non-responsive", at the sole decision of the BPC. Financial Bid not in conformity with the requirement of Sl. No. (c) of Clause 2.5.3 of this RFP shall be rejected.

3.5.3 The Bidders shall quote the single annual Quoted Transmission Charges as specified in the format at Annexure – 21.

3.6. STEP V - Bidder Selection

3.6.1. The prevailing lowest Quoted Transmission Charges discovered from Final Offers shall only be displayed during the e-reverse bidding and the Bidder quoting such Final Offer will always remain anonymous during the e-reverse bidding. The Bidder with the prevailing lowest Quoted Transmission Charges discovered from Final Offers at the close of the scheduled or extended period of e-reverse bidding as mentioned in clause 2.5 shall be declared as the Successful Bidder, subject to verification of the original hard copies of Annexure 3, Annexure 4 (if applicable), Annexure 6 (if applicable) and Annexure 14. The Letter of Intent shall be issued to such Successful Bidder in two (2) copies.

However, if no bid is received during the e-reverse bidding stage then the Bidder with lowest quoted initial transmission charges ("Initial Offer") during e-bidding stage shall be declared as the Successful Bidder, subject to verification of the original hard copies of Annexure 3, Annexure 4 (if applicable),

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Annexure 6 (if applicable) and Annexure 14. The Letter of Intent shall be issued to such Successful Bidder in two (2) copies.

In case, there is a discrepancy between the online submission and physical documents, the bid would be out rightly rejected and the bidder shall be construed to have engaged in the fraudulent practice as defined in Clause 2.19.3 with consequences as mentioned in Clause 2.19.2. Further, in such a case, the provisions of Clause 2.5.6 (j) shall apply.

3.6.2. The Selected Bidder shall unconditionally accept the LoI, and record on one (1) copy of the LoI, "Accepted unconditionally", under the signature of the authorized signatory of the Successful Bidder and return such copy to the BPC within seven (7) days of issue of LoI.

3.6.3. If the Successful Bidder, to whom the Letter of Intent has been issued, does not fulfill any of the conditions specified in Clauses 2.15.2, 2.15.3 and Clause 2.15.4, then subject to Clause 2.15.5, the BPC reserves the right to annul the award of the Project and cancel the Letter of Intent. Further, in such a case, the provisions of Clause 2.5.6 (j) shall apply.

3.6.4. The BPC, in its own discretion, has the right to reject all Bids if the Quoted Transmission Charges are not aligned to the prevailing prices.

3.7. Misrepresentation by the Bidder

If the Bidder conceals any material information or makes a wrong statement or misrepresents facts or makes a misleading statement in the Technical Bid or Bid, as the case may be, in any manner whatsoever, in order to create circumstances for the acceptance of its Technical Bid/Bid, the BPC reserves the right to reject such Technical Bid/Bid, and/ or cancel the Letter of Intent, if issued. Further, in case Letter of Intent is cancelled, consequences as per provisions of the RFP shall follow.

3.8. Disposition of Technical Bid

3.8.1. Technical Bid found to be non-responsive as per Clause **3.2,** due to any of the following conditions, shall be liable for rejection.

- Technical Bid that is incomplete.
- Technical Bid not signed by authorized signatory and / or stamped in the manner indicated in this RFP.
- All pages of the Technical Bid submitted but not initialed by the authorized signatories on behalf of the Bidder.
- Technical Bid not including the covering letter as per **Annexure 1.**
- Technical Bid contains material inconsistencies in the information and documents submitted by the Bidder, affecting the Qualification Requirements.
- Information not submitted in formats specified in the RFP.
- The Bidder has not submitted a disclosure as per **Annexure 13.**
- Bidders delaying in submission of additional information or clarifications sought by the BPC.

3.8.2. Technical Bid found to be non-responsive as per Clause **3.2,** due to any of the following conditions, shall be rejected.

- Technical Bid not received by the scheduled date and time.
- Technical Bid submitted by a Bidding Consortium not including the Consortium Agreement.

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- Bidder submitting or participating in more than one response either as a Bidding Company or as a Member of Bidding Consortium.
- More than one Member of the Bidding Consortium or a Bidding Company using the credentials of the same Parent/Affiliate.
- Technical Bid having Conflict of Interest.
- If the Bidder makes any misrepresentation as specified in Clause **3.7.**

3.9. BPC reserves the right to interpret the Bid in accordance with the provisions of this RFP document and make its own judgment regarding the interpretation of the same. In this regard, BPC shall have no liability towards any Bidder and no Bidder shall have any recourse to BPC with respect to the qualification process.

BPC shall evaluate Bid using the process specified in Clause 3.1 to 3.6, at its sole discretion. BPC's decision in this regard shall be final and binding.

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SECTION - 4

ANNEXURES FOR BID

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SECTION – 4

I. **Formats for Bid**

The following formats are required to be included in the Bidder's Technical and Financial Bid. These formats are designed to demonstrate the Bidder's compliance with the Qualification Requirements set forth in Clause 2.1 of Section – 2.

Technical Bid

1. Format for the Covering Letter
2. Format for Letter of Consent from Consortium Members
3. Format for evidence of authorized signatory's authority (Power of Attorney)
4. Format for Power of Attorney from to be provided by each of the other Members of the Consortium in favour of the Lead Member
5. Format for Bidder's composition and ownership structure and Format for Authorization
6. Format for Consortium Agreement
7. Formats for Qualification Requirement
8. Format of Bidders Undertaking and details of Equity Investment
9. Authorization from Parent/Affiliate of Bidding Company/Member of Bidding Consortium whose technical/financial capability has been used by the Bidding Company/Member of Bidding Consortium.
10. Undertaking from the Technically / Financially Evaluated Entity(ies) or from Ultimate Parent Company for equity investment
11. Format of Board Resolutions
12. Format for Illustration of Affiliates
13. Format for Disclosure
14. Format for Bid Bond

14A. Format for Bid Security Declaration

15. Format for Contract Performance Guarantee
16. Checklist for Technical Bid submission requirements

22. Format for Affidavit

In addition to the online submission, the Bidder with lowest Final Offer will be required to submit original hard copies of Annexure 3, Annexure 4 (if applicable), Annexure 6 (if applicable) and Annexure 14 before issuance of LoI.

Financial Bid

21. Format for Financial Bid

II. The following formats are for the information to the Bidders to enable them to submit their Bid.

11A. Illustration for Applicable Board Resolution Requirements Under Clause 2.5.2

17. List of Banks
18. GRID Map of the Project
19. Format for clarification/amendments on the RFP/RFP Project Documents
20. Formats for RFP Project Documents

Bidder may use additional sheets to submit the information for its detailed Bid.

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ANNEXURE 1 - COVERING LETTER

(The covering letter should be on the Letter Head of the Bidding Company/ Lead Member of the Consortium)

Date: .....
From: .....
.....
.....
Tel. No.: .....
Fax No.: .....
E-mail address: .....

To,
PFC Consulting Limited
9thFloor, Wing-A, Statesman House,
Connaught Place, New Delhi - 110001

Dear Sir,

Sub: **Bid for selection of Bidder as Transmission Service Provider to establish Inter-State Transmission System for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" through tariff based competitive bidding process.**

1. Being duly authorized to present and act on behalf of M/s ..... (insert name of Bidding Company / Bidding Consortium) (hereinafter called the "Bidder") and having read and examined in detail the Request for Proposal (RFP) document, the undersigned hereby submit our Technical Bid with duly signed formats and Financial Bid (Initial Offer) as stipulated in RFP document for your consideration.

2. It is confirmed that our Bid is consistent with all the requirements of submission as stated in the RFP document and subsequent clarifications/amendments as per Clause 2.3 and 2.4 of RFP.

3. The information submitted in our Bid is complete, is strictly as per the requirements stipulated in the RFP document and is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our Bid.

4. We hereby agree and undertake to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide orders No. 11/5/2018 - Coord. dated 28.07.2020 for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard.

   We hereby also agree and undertake to comply with Department of Expenditure, Ministry of Finance vide Order (Public Procurement No 1) bearing File No. 6/18/2019-PPD dated 23.07.2020, Order (Public Procurement No 2) bearing File No. 6/18/2019-PPD dated 23.07.2020 and Order (Public Procurement No. 3) bearing File No. 6/18/2019-PPD, dated 24.07.2020, as amended from time to time, regarding public procurement from a bidder of a country, which shares land border with India.

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5. We hereby agree to comply with Ministry of Power order no. 25-11/6/2018 – PG dated 02.07.2020 as amended from time to time.

6. We are herewith submitting legally binding board resolution for the total equity requirement of the Project.

7. We hereby confirm that in accordance with Clause 2.1.4 of the RFP, we are herewith submitting legally binding undertaking supported by a board resolution from the .....(Insert name of Technically Evaluated Entity and/or Financially Evaluated Entity or its Ultimate Parent Company, as the case may be) that all the equity investment obligations of ..... (Insert name of the Bidding Company) shall be deemed to be equity investment obligations of the ..... (Insert name of Technically Evaluated Entity and/or Financially Evaluated Entity or its Ultimate Parent Company, as the case may be) and in the event of any default by..... (Insert name of the Bidding Company), the same shall be met by ..... (Insert name of Technically Evaluated Entity and/or Financially Evaluated Entity or its Ultimate Parent Company, as the case may be).

   [Sl. No 7 to be inserted only in case the Bidder is a Bidding Company / Lead Member of a Consortium and has sought qualification on the basis of technical and financial capability of its Affiliate(s) and/or its Parent]

8. We confirm that there are no litigations or disputes against us, which materially affect our ability to fulfill our obligations with regard to the Project.

9. We hereby confirm that we shall continue to maintain compliance with Qualification Requirements till the execution of the Transmission Service Agreement. Further, in case we emerge as Selected Bidder for the Project, we shall continue to maintain compliance with Qualification Requirements till the COD of the Project.

10. We confirm that we have studied the provisions of relevant Indian laws and regulations required to enable us to build, own, operate and transfer the said Project and to prepare this Bid.

11. We hereby confirm that we shall abide unreservedly with BPC's decision in the qualification process for selection of Qualified Bidder and further warrant that under no circumstances we shall challenge either the BPC's decision or its right to make such decision at any time in the future.

12. We confirm that the Bid shall remain valid for a period of one eighty (180) days from the Bid Deadline.

13. The details of contact person are furnished as under:

    Name: .....
    Designation: .....
    Name of the Company: .....
    Address of the Bidder: .....
    Phone Nos.: .....
    Fax Nos.: .....
    E-mail address: .....

14. **Bid Bond**

    We have enclosed a Bid Bond of Rupees ..... Crores (Rs. .....) only or US$ ..... (.....US Dollars), in the form of bank guarantee no ..... [Insert number of the Bank

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Guarantee] dated.....[Insert Date of the Bank Guarantee] as per your proforma (Annexure-14) from.....[Insert name of bank providing Bid Bond] and valid up to .....in terms of Clause 2.11 of the RFP.

15. Acceptance

We hereby unconditionally and irrevocably agree and accept that the decision made by the BPC on any matter regarding or arising out of the RFP shall be binding on us. We hereby expressly waive any and all claims in respect of Bid process.

16. Familiarity With Relevant Indian Laws & Regulations

We confirm that we have studied the provisions of relevant Indian laws and regulations as required to enable us to submit this Bid and execute the RFP Project Documents (other than TSA), in the event of our selection as the TSP. We further undertake and agree that all such factors as mentioned in Clause 2.5.7 of RFP have been fully examined and considered while submitting the Bid.

It is confirmed that our Bid is consistent with all the requirements of submission as stated in the RFP and subsequent communications from BPC.

The information submitted in our Bid is complete, strictly as per the requirements stipulated in the RFP and is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our Bid.

We confirm that we have not taken any deviation so as to be deemed non-responsive with respect to the provisions stipulated at Clause 2.5.1, of this RFP.

Thanking you,

Yours sincerely,

.....

(Name and Signature of the authorized signatory in whose name Power of Attorney/ Board Resolution as per Clause 2.5.2 is issued)

Name: .....
Designation: .....
Address: .....

Date: .....
Place: .....

Company Rubber Stamp

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ANNEXURE 2 - LETTER OF CONSENT FROM CONSORTIUM MEMBERS

(On the letter head of each Member of the Consortium including Lead Member)

Date: .....
From: .....
.....
.....
Tel. No.: .....
Fax No.: .....
E-mail address: .....

To,
PFC Consulting Limited
9thFloor, Wing-A, Statesman House,
Connaught Place, New Delhi - 110001

Dear Sir,

Sub: **Bid for selection of Bidder as Transmission Service Provider to establish Inter-State Transmission System for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" through tariff based competitive bidding process.**

We, the undersigned Member of ..... (Insert name of the Bidding Consortium) have read, examined and understood the RFP document for the short-listing of Bidders as prospective TSP to establish Inter-State Transmission System for "**Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)**" through tariff based competitive bidding process. We hereby confirm our concurrence with the Bid including in particular the Consortium Agreement submitted by ..... (Insert name of the Lead Member) in response to the RFP document.

We hereby confirm our commitment to participate in the said Bidding Consortium and invest ..... % of the total equity requirement for the Project as per the terms of the Consortium Agreement dated ..... and board resolution for such investment commitment is enclosed herewith.

We hereby confirm that in accordance with Clause 2.1.4 of the RFP, we are enclosing legally binding undertaking supported by a board resolution from the ..... (Insert name of Technically Evaluated Entity and / or Financially Evaluated Entity or its Ultimate Parent Company, as the case may be) that all the equity investment obligations of ..... (Insert name of the Member) shall be deemed to be equity investment obligations of the ..... (Insert name of Technically Evaluated Entity and / or Financially Evaluated Entity or its Ultimate Parent Company, as the case may be) and in the event of any default by..... (Insert name of the Member), the same shall be met by..... (Insert name of Technically Evaluated Entity and / or Financially Evaluated Entity or its Ultimate Parent Company, as the case may be). [Insert if applicable]

[To be inserted by the Lead Member only] We are also enclosing legally binding board resolution for the total equity requirement of the Project in case of any breach of any of the equity investment commitment by any of the Consortium Members, in line with the provisions of the Consortium Agreement dated ..... [Bidder to insert date of Consortium Agreement].

The details of contact person are furnished as under:
Name: .....
Designation: .....

Name of the Company: .....
Address: .....
Phone Nos.: .....
Fax Nos.: .....
E-mail address: .....

Dated the ..... day of ..... of 20...

Thanking you,

Yours faithfully,

.....
(Signature)

Name: .....
Designation: .....

(Signature, Name, Designation of Authorized Signatory of Consortium Member and Company's Seal)

T.C

ANNEXURE 3 - FORMAT FOR EVIDENCE OF AUTHORIZED SIGNATORY'S AUTHORITY (POWER OF ATTORNEY)

POWER OF ATTORNEY

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution. Foreign companies submitting bids are required to follow the applicable law in their country)

Know all men by these presents, We .....(name and address of the registered office of the Bidder) do hereby constitute, appoint and authorize Mr./Ms. .....(name and residential address) who is presently employed with us and holding the position of ..... as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our Bid for selection of Bidder as Transmission Service Provider to establish Inter-State Transmission System for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"** through tariff based competitive bidding process in the country of India, including signing and submission of all documents related to the Bid, including, undertakings, letters, certificates, acceptances, clarifications, guarantees, etc., making representations to the BPC, and providing information / responses to the BPC, representing us in all matters before the BPC, and generally dealing with the BPC in all matters in connection with our Bid for the said Project till the completion of the bidding process in accordance with the RFP and signing of the Share Purchase Agreement by all the parties thereto.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

All the terms used herein but not defined shall have the meaning ascribed to such terms under the RFP.

For ..... [Insert name of the Bidder on whose behalf PoA is executed]

.....
(Signature)

Name: .....
Designation: .....

Accepted

.....
(Signature of the Attorney)

Name: .....
Designation: .....
Address: .....
.....
(Name, Designation and Address of the Attorney)

Specimen signatures of attorney attested by the Executant

.....
(Signature of the Executant)

T.C

.....
(Signature of Notary Public)

Place: .....
Date: .....

Notes:

1) To be executed by Bidding Company or the Lead Member, in the case of a Bidding Consortium, as the case maybe.

2) The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal of the executant affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executant(s) in this regard.

3) Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a Board resolution / power of attorney, in favour of the Person executing this power of attorney for delegation of power hereunder on behalf of the executant(s).

4) In case of foreign Bidders, refer to clause 2.5.6 (p)

T.C

ANNEXURE 4 - FORMAT FOR POWER OF ATTORNEY TO BE PROVIDED BY EACH OF THE OTHER MEMBERS OF THE CONSORTIUM IN FAVOUR OF THE LEAD MEMBER

POWER OF ATTORNEY

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution. Foreign companies submitting bids are required to follow the applicable law in their country)

KNOW ALL MEN BY THESE PRESENTS THAT M/s....., having its registered office at ....., ... and M/s ..... having its registered office at ....., (Insert names and registered offices of all Members of the Consortium), the Members of Consortium, have formed a Bidding Consortium named ..... (insert name of the Consortium) (hereinafter called the **"Consortium"**) vide Consortium Agreement dated..... and having agreed to appoint M/s..... as the Lead Member of the said Consortium do hereby constitute, nominate and appoint M/s.....a company incorporated under the laws of .....and having its Registered / Head Office at .....as our duly constituted lawful Attorney (hereinafter called as **"Lead Member"**) which is one of the Members of the Consortium, to act as the Lead Member and our true and lawful attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of Consortium's Bid for the Project, including signing and submission of the Bid and all documents related to the Bid, including, undertakings, letters, certificates, acceptances, clarifications, guarantees, etc, making representations to the BPC, and providing information / responses to the BPC, representing us and the Consortium in all matters before the BPC, and generally dealing with the BPC in all matters in connection with our Bid for the said Project, till completion of the bidding process in accordance with the RFP and signing of the Share Purchase Agreement by all the parties thereto.

It is expressly understood that in the event of the Consortium being selected as Successful Bidder, this Power of Attorney shall remain valid, binding and irrevocable until the Bidding Consortium achieves execution of all RFP Project Documents.

We, as the Member of the Consortium, agree and undertake to ratify and confirm all whatsoever the said Attorney/Lead Member has done on behalf of the Consortium Members pursuant to this Power of Attorney and the same shall bind us and deemed to have been done by us.

All the terms used herein but not defined shall have the meaning ascribed to such terms under the RFP.

IN WITNESS WHEREOF M/s ....., as the Member of the Consortium have executed these presents on this..... day of .....

For and on behalf of
Consortium Member

.....
(Signature of the Authorized Signatory)

Name: .....
Designation: .....
Place: .....
Date: .....

Name: .....
Designation: .....

T. C

Place: .....
Date: .....

Accepted
Specimen signatures of attorney attested

.....
(Signature)

.....

.....
(Signature of Notary Public) .....
(Name, Designation and Address of the Attorney)

Place: .....
Date: .....

Notes:

1. The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal of the executant affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executant(s) in this regard.

2. Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a Board resolution / power of attorney, in favour of the Person executing this power of attorney for delegation of power hereunder on behalf of the executant(s).

3. In case of foreign Bidders, refer to clause 2.5.6 (p)

T.C

ANNEXURE 5 - FORMAT FOR BIDDER'S COMPOSITION AND OWNERSHIP STRUCTURE

1. **Corporate Details:**
Please provide the following information for the Bidder. If the Bidder is a Consortium, please provide this information for each Member including the Lead Member:

a. **Company's Name, Address, and Nationality:**

Name: .....

Address: .....
.....
.....

Website Address: .....

Country of Origin: .....

b. **Year Organized:** .....

c. **Company's Business Activities:** .....
.....

d. **Status as a Bidder:**
i. Bidding Company
ii. Lead Member of the Bidding Consortium
iii. Member of the Bidding Consortium
Note: tick the applicable serial number

e. **Company's Local Address in India (if applicable):**

.....
.....
.....

f. **Name of the Authorized Signatory:** .....

g. **Telephone Number:** .....

h. **Email Address:** .....

i. **Telefax Number:** .....

j. **Please provide the following documents:**

i. Copy of the Memorandum and Articles of Association and certificate of incorporation or other equivalent organizational document (as applicable), including their amendments, certified by the Company Secretary as **Attachment 1** for Bidding Company / each Member of Bidding Consortium including Lead Member.

ii. Authority letter (as per format for authorization given below) in favour of BPC from the Bidder/every Member of the Consortium authorizing BPC to seek reference

T.C

from their respective bankers & others as **Attachment 2** as per Clause 2.1.6 of the RFP.

2. **Details of Ownership Structure:**
Equity holding of Bidding Company/ each Member of Bidding Consortium including Lead Member owning 10% or more of total paid up equity.

Name of the Bidding Company / Consortium Member: .....
Status of equity holding as on .....

Name of the Equity Holder	Type and No. of Shares owned	Extent of Voting Control (%)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
....		

Notes:
1. The above table is to be filled in separately for each Consortium Member.
2. Status of equity holding should be provided not earlier than thirty (30) days prior to Bid Deadline.

For and on behalf of Bidding Company / Lead Member of the Bidding Consortium
M/s.....

.....
(Signature of authorized representative)
Name: .....
Designation: .....

.....
(Stamp)

Date: .....
Place: .....

T.C

FORMAT FOR AUTHORISATION

(In case of Bidding Consortium, to be given separately by each Member)
(On Non – judicial stamp paper duly attested by notary public. Foreign companies submitting bids are required to follow the applicable law in their country)

The undersigned hereby authorize(s) and request(s) all our Bankers, including its subsidiaries and branches, any person, firm, corporation or authority to furnish pertinent information deemed necessary and requested by **PFC Consulting Limited** to verify our Bid for selection of Bidder as Transmission Service Provider to establish Inter-State Transmission system for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"** through tariff based competitive bidding process or regarding our project development experience, financial standing and general reputation.

For and on behalf of M/s..... (Insert Name of Bidding Company or Member of the Consortium)

.....
(Signature)

Name of Authorized Signatory: .....

(Signature and Name of the authorized signatory of the Company)

Place: .....
Date: .....

.....
(Company rubber stamp/seal)

.....
(Signature of Notary Public)

Place: .....
Date: .....

T.C

ANNEXURE 6 - FORMAT FOR CONSORTIUM AGREEMENT

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution. Foreign companies submitting bids are required to follow the applicable law in their country)

THIS CONSORTIUM AGREEMENT executed on this..... day of .....Two thousand.....between M/s....., a company incorporated under the laws of ..... and having its Registered Office at ..... (hereinafter called the "Party 1", which expression shall include its successors, executors and permitted assigns) and M/s.....a Company incorporated under the laws of ..... and having its Registered Office at ..... (hereinafter called the "Party n", which expression shall include its successors, executors and permitted assigns) and for the purpose of submitting the Bid, acquisition of **SPV [which is under incorporation]** (in case of award) and entering into other Agreement(s) as specified in the RFP (hereinafter referred to as "Agreements") as may be entered into with the Nodal Agency.

WHEREAS, the BPC had invited Bid in response to RFP issued to ..... (insert the name of purchaser of RFP) for selection of the bidder as the Transmission Service Provider to establish Inter-State Transmission System for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"**.

AND WHEREAS, Clause 2.2.4 of the RFP document stipulates that the Bidders qualifying on the strength of a Bidding Consortium will have to submit a legally enforceable Consortium Agreement in a format specified in the RFP document wherein the Consortium Members have to commit equity of a specific percentage in the Project.

AND WHEREAS, Clause 2.2.4 of the RFP document also stipulates that the Bidding Consortium shall provide along with the Bid, a Consortium Agreement as per prescribed format whereby the Consortium Members undertake to be liable for raising the required funds for its respective equity investment commitment as specified in Consortium Agreement.

NOW THEREFORE, THIS INDENTURE WITNESSTH AS UNDER:

In consideration of the above premises and agreement all the parties in this Consortium do hereby mutually agree as follows:

1. In consideration of the selection of the Consortium as the selected bidder by the BPC, we the Members of the Consortium and parties to the Consortium Agreement do hereby unequivocally agree that M/s..... (Insert name of the Lead Member), shall act as the Lead Member as defined in the RFP for self and agent for and on behalf of ....., ..., ..., ... (the names of all the other Members of the Consortium to be filled in here).

2. The Lead Member is hereby authorized by the Members of Consortium and parties to the Consortium Agreement to bind the Consortium and receive instructions for and on behalf of the Members.

3. Notwithstanding anything contrary contained in this Consortium Agreement, the Lead Member shall always be liable for the equity investment obligations of all the Consortium Members, i.e., for both its own equity contribution as well as the equity contribution of other Members.

T.C

4. The Lead Member shall be liable and responsible for ensuring the individual and collective commitment of each of the Members of the Consortium in discharging all their respective equity obligations. Each Consortium Member further undertakes to be individually liable for the performance of its part of the obligations without in any way limiting the scope of collective liability envisaged in this agreement.

5. Subject to the terms of this agreement, the share of each Member of the Consortium in the "issued equity share capital of the project company" shall be in the following proportion: (if applicable)

Name	Percentage of equity holding in the Project
Party 1	.....
.....	.....
Party n	.....
Total	**100%**

[Note: The percentage equity holding for any Consortium Member in the Project cannot be zero in the above table]

6. The Lead Member shall inter alia undertake full responsibility for liaising with lenders and mobilizing debt resources for the Project and achieving financial closure.

7. In case of any breach of any of the equity investment commitment by any of the Consortium Members, the Lead Member shall be liable for the consequences thereof.

8. Except as specified in the Agreement, it is agreed that sharing of responsibilities as aforesaid and equity investment obligations thereto shall not in any way be a limitation of responsibility of the Lead Member under these presents.

9. It is further specifically agreed that the financial liability for equity contribution of Lead Member shall, not be limited in any way so as to restrict or limit its liabilities. The Lead Member shall be liable irrespective of their scope of work or financial commitments.

10. It is expressly understood and agreed between the Members that the responsibilities and obligations of each of the Members shall be as delineated as annexed hereto as **Appendix-I,** forming integral part of this Agreement. It is further agreed by the Members that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities and liabilities of the Members, with regards to all matters relating to the Project.

11. It is clearly agreed that the Lead Member shall ensure performance under the Agreements and if one or more Consortium Members fail to perform its /their respective obligations under the Agreement(s), the same shall be deemed to be a default by all the Consortium Members.

12. This Consortium Agreement shall be construed and interpreted in accordance with the Laws of India and courts at **Delhi** alone shall have the exclusive jurisdiction in all matters relating thereto and arising there under.

13. It is hereby agreed that, the Lead Member shall furnish the bid bond, as stipulated in the RFP, on behalf of the Consortium Members.

14. It is hereby agreed that in case of selection of Bidding Consortium as the selected bidder, the parties to this Consortium Agreement do hereby agree that they shall furnish the contract

T.C

performance guarantee on behalf of the TSP in favour of the Nodal Agency, as stipulated in the RFP and Transmission Service Agreement.

15. It is further expressly agreed that the Consortium Agreement shall be irrevocable and shall form an integral part of the RFP Project Document and shall remain valid till the execution of the Share Purchase Agreement, unless expressly agreed to the contrary by the Nodal Agency. Over the term of the Transmission Service Agreement, Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations as amended from time to time shall apply on the Consortium Members.

16. The Lead Member is authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Consortium Members respectively from time to time in response to the RFP and for the purposes of the Project.

17. It is hereby expressly agreed between the parties to this Consortium Agreement that neither party shall assign or delegate its rights, duties or obligations under this Agreement except with the prior written consent of the Nodal Agency.

THIS CONSORTIUM AGREEMENT:

a. has been duly executed and delivered on behalf of each party hereto and constitutes the legal, valid, binding and enforceable obligation of each such party,

b. sets forth the entire understanding of the parties hereto with respect to the subject matter hereof;

c. may not be amended or modified except in writing signed by each of the parties and with prior written consent of the Nodal Agency.

IN WITNESS WHEREOF, the parties to the Consortium Agreement have, through their authorized representatives, executed these present on the Day, Month and Year first mentioned above.

For and on behalf of Consortium Member 1 (Party 1)
M/s.....

.....
(Signature of authorized signatory)

Name: .....
Designation: .....
Place: .....
Date: .....

For and on behalf of Consortium Member n (Party n)
M/s.....

.....
(Signature of authorized signatory)

T.C

Name: .....
Designation: .....
Place: .....
Date: .....

Attested:

.....
(Signature)
(Notary Public)

Place: .....
Date: .....

Note: In case of foreign Bidders, refer to clause 2.5.6 (p)

T.C

Appendix 1 to the Consortium Agreement:

Name of the Consortium Member	Responsibilities under the Consortium Agreement
M/s ..... (Party 1)	
M/s	
M/s ..... (Party n)	

T. C

ANNEXURE 7 A - FORMAT FOR QUALIFICATION REQUIREMENT

A. NET WORTH

To,
PFC Consulting Limited
9thFloor, Wing-A, Statesman House,
Connaught Place, New Delhi - 110001

Dear Sir,

Sub: Bid for selection of Bidder as Transmission Service Provider to establish Inter-State Transmission System for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" through tariff based competitive bidding process

1. [Note: Applicable in case of Bidding Company]

We certify that the Financially Evaluated Entity (ies) had a Networth of Rs. ..... Crore or equivalent USD* computed as per instructions in this RFP based on unconsolidated audited annual accounts (refer Note-2 below) of any of the last three (3) financial years as provided in Clause 2.2.3, immediately preceding the Bid Deadline. Also, the Networth of any of the last three (3) financial years is not negative.

Name of Financially Evaluated Entity(ies)	Relationship with Bidding Company**	Financial Year	Networth (Rs. Crore)
1.			
2.			
3.			
....			
Total Networth			

*Equivalent USD shall be calculated as per provisions of Clause 3.4.1.
** The column for "Relationship with Bidding Company" is to be filled in only in case financial capability of Parent/Affiliate has been used for meeting Qualification Requirements.

2. [Note: Applicable in case of Bidding Consortium]

We certify that the Financially Evaluated Entity (ies) had a minimum Networth of Rs. ..... Crore or equivalent USD* computed as per instructions in the RFP and based on unconsolidated audited annual accounts (refer Note-2 below) of any of the last three (3) financial years as provided in Clause 2.2.3, immediately preceding the Bid Deadline. Also, the Networth of any of the last three (3) financial years is not negative.

T.C

Name of Consortium Member	Equity Commitment in the Project (%)	Networth of Member (Rs. Crore)	Networth Requirement to be met by Member in proportion to the Equity Commitment (Rs. Crore)	Whether the Member meets the Networth Requirement
(1)	(2)	(3) (As per table below)	(4)= (2 x Total Networth requirement for the Project)	(5)
1.				Yes / No
2.				Yes / No
..				Yes / No
Total Networth for financial requirement				

Member – I (Lead Member)

[Note: Similar particulars for each Member of the Consortium is to be furnished, duly certified by the Member's Statutory Auditors]

i. Name of Member: .....

ii. Total Networth requirement: Rs ..... Crore

iii. Percentage of equity commitment for the Project by the Member: .....%

iv. Networth requirement for the Member***: Rs. ..... Crore

v. Financial year considered for the Member: .....

Name of Financially Evaluated Entity(ies)	Relationship** with Member of Consortium	Financial Year	Networth (Rs. Crore)
1.			
2.			
3.			
Total Networth			

* Equivalent USD shall be calculated as per provisions of Clause 3.4.1;

** The column for "Relationship with Member of Consortium" is to be filled in only in case the financial capability of Parent / Affiliate has been used for meeting Qualification Requirements;

*** Networth requirement to be met by Member should be in proportion to the equity commitment of the Member for the Project.

T.C

Yours faithfully

.....

(Signature and name of the authorized signatory of the Company and Stamp)

Name : .....
Date : .....
Place : .....

.....

(Signature and Stamp of statutory Auditors of Bidding Company / each Member of Consortium)

Name : .....
Date : .....
Place : .....

Date : .....

Notes:

1. Along with the above format, in a separate sheet, please provide details of computation of Networth of last three (3) financial years duly certified by Statutory Auditor.

2. Audited consolidated annual accounts of the Bidder may be used for the purpose of financial criteria provided the Bidder has at least 26% equity in each company whose accounts are merged in the audited consolidated accounts and provided further that the financial capability of such companies (of which accounts are being merged in the consolidated accounts) shall not be considered again for the purpose of evaluation of the Bid.

3. In case Bidder or a Member of Consortium takes recourse to its Parent/Affiliate for meeting technical / financial requirements, then the financial years considered for such purpose should be same for the Bidder / Member of Consortium and their respective Parent / Affiliate.

ANNEXURE 7B - FORMAT FOR TECHNICAL REQUIREMENT

To,
PFC Consulting Limited
9th Floor, Wing-A, Statesman House,
Connaught Place, New Delhi - 110001

Dear Sir,

Sub: Bid for selection of Bidder as Transmission Service Provider to establish Inter-State Transmission System for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" through tariff based competitive bidding process

1. To be used by Bidder using the development experience in infrastructure sector

We certify that M/s. ..... (Insert name of Technically Evaluated Entity (ies)) have experience of development of projects in the infrastructure sector in the last five (5) years whose aggregate capital expenditure is Rs. ..... Crore or equivalent USD*. We further certify that the capital expenditure of any single project considered for meeting the technical Qualification Requirement is not less than **Rs.515 Crore (Rupees Five Hundred Fifteen Crore Only)** or equivalent USD*. For this purpose, capital expenditure incurred on projects which have been either wholly completed / commissioned or partly completed projects put under commercial operation and for which operation has commenced till at least seven (7) days prior to the Bid Deadline has been considered.

The project(s) considered for the purpose of technical experience (as per table given below) have been executed and owned to the extent as indicated in the table below (to be at least twenty – six percent (26%)) by the Bidding Company / Lead Member of the Consortium / our Parent / our Affiliate(s) [strike off whichever is not applicable] on operation of the projects.

This technical requirement has been calculated as per the instructions provided in the RFP on the basis of following projects:

Name of Company (which has executed the project at (3)) whose technical capability has been used for Qualification Requirement	Relationship** with Bidding Company / Lead Member	Project name	Nature of Project (BOOT, BOT, BOOM, DBFOT etc.)	Relevant Infrastructure sector	Date of Financial Closure of the Project (in DD / MM / YYYY)	Date of Completion / Commissioning / Commercial Operation of partly completed projects	Project cost (Rs. Crore)	Percentage Equity Holding of Company at (1) in Completed project(s)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
.....		..... (Project 1)						
.....		.....						
Total (Rs. Crore)								

* Equivalent USD shall be calculated as per provisions of Clause ____

** The column for "Relationship with Bidding Company / Lead Member" is to be filled in only in case technical capability of Parent/Affiliate has been used for meeting Qualification Requirements.

We further certify that the Company(ies) as indicated in column (1) of the above table, whose technical capability has / have been used for meeting the qualification requirement, has / have held shareholding respectively of at least twenty – six percent (26%) from the date of financial closure till the date of commissioning / completion of the above project(s).

2. To be used by Bidder using construction experience in infrastructure sector.

We certify that M/s. ..... (Insert name of Technically Evaluated Entity(ies)) have received aggregate payments not less than Rs. ..... Crore or equivalent USD (calculated as per provisions in Clause 3.4.1) from its client(s) for construction works fully completed during the last 5(five) financial years. We further certify that the payment received from each project shall not be less than Rs. ..... Crore or equivalent USD (calculated as per provisions in Clause 3.4.1). For this purpose, payments received on projects that have been commissioned/completed at least seven (7) days prior to the Bid Deadline shall be considered. Further only the payments (gross) actually received, during such 5 (five) financial years shall qualify for purposes of computing the technical capacity.

We also confirm that construction works does not include cost of land supply of goods or equipment except when such goods or equipment form part of a turn-key construction contract/ EPC contract for the project.

This technical requirement has been calculated as per the instructions provided in the RFP on the basis of following projects:

Name of Company (which has executed the project at (3)) whose technical capability has been used for Qualification Requirement	Relationship ** with Bidding Company / Lead Member	Project name	Nature of Project (EPC, Turnkey etc)	Relevant Infrastructure sector	Date of award of contract (in dd/mm/yy)	Date of Completion / Commissioning	Payment received (Rs. Crore)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
.....		..... Project 1					
.....		.....					
.....		.....					
	Total (Rs. Crore)						

T.C

Yours faithfully

.....

(Signature and name of the authorized signatory of the Company and stamp)

Name: .....
Date: .....
Place: .....

.....

(Signature and Stamp of statutory Auditors of Bidding Company/ Lead Member of Consortium)

Name: .....
Date: .....
Place: .....

Date: .....

Notes:

1. Along with the above format, in a separate sheet, please provide details of computation of capital expenditure of projects duly certified by Statutory Auditor of the project company. In addition, the Statutory Auditor of the project company should also certify that the capital expenditure of projects commissioned or completed 7 days prior to Bid Deadline has been capitalized in the books of accounts.

   Additionally, in case construction experience is used, a certificate(s) from the statutory auditors stating the payments received and the concerned client(s) stating the works commissioned during the past 5 years in respect of the projects specified above. In case a particular job/ contract has been jointly executed by the Bidder (as part of a consortium), it should further support its claim for the share in work done for that particular job/ contract by producing a certificate from its statutory auditor or the client.

2. In case the accounts for the financial year in which the project claimed for meeting qualification requirement has been commissioned are not audited, the Bidder shall give declaration in this regard duly certified by its statutory auditor. In such a case, Bidder shall provide details of computation of capital expenditure of such project(s) duly certified by Statutory Auditor of the project company and the Statutory Auditor of the project company should also certify that the capital expenditure of projects commissioned or completed shall be capitalized in the books of accounts upon finalization.

3. The unconsolidated audited annual accounts of both the TEE and the Bidding Company / Lead Member for the respective financial years (financial years in which financial closure was achieved to the financial year in which the said project was completed / commissioned) should be submitted.

T.C

ANNEXURE 7C - FORMAT FOR TECHNICAL & FINANCIAL REQUIREMENT – RELATIONSHIP & DETAILS OF EQUITY SHAREHOLDING

[To be filled by Bidding Company / each Member of the Bidding Consortium including Lead Member if credentials of Parent and / or Affiliates have been used by them]

To,
PFC Consulting Limited
9th Floor, Wing-A, Statesman House,
Connaught Place, New Delhi - 110001

Dear Sir,

Sub: Bid for selection of Bidder as Transmission Service Provider to establish Inter-State Transmission System for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" through tariff based competitive bidding process

We certify that M/s. ..... (insert name of the **Bidding Company / Consortium Members**) have considered the technical and financial capability of its Parent and / or Affiliates, for the purpose of meeting Qualification Requirements as per the instructions provided in the RFP. The name of Parent and / or Affiliate, nature of relationship(s) with such Parent and / or Affiliate and details of equity holding are as follows:

Name of Company whose credentials considered	Type of credentials considered (technical and / or financial)	Relationship with Bidding Company / Consortium Member (Parent / Affiliate)	Details of equity shareholding (refer notes below)
Company 1			
.....			
.....			
.....			
.....			

NOTES:

i. In case of Parent, the equity holding of the Parent in the Bidding Company / Member of the Bidding Consortium, including the Lead Member of the Consortium, need to be specified.

ii. In case of Affiliate under direct control of Bidder, the equity holding of the Bidding Company / Member of the Bidding Consortium, including the Lead Member of the Consortium in the Affiliate, needs to be specified.

iii. In case of Affiliate under common control of Parent, the equity holding of the Parent in the Affiliate of the Bidding Company / Member of the Bidding Consortium, including the Lead Member of the Consortium, needs to be specified.

iv. Relationship of Parent / Affiliate with Bidding Company / Member of Consortium to be at the most seven (7) days prior to the Bid Deadline (as per Clause 2.1.4 of RFP)

Yours faithfully

.....

(Signature and name of the authorized signatory of the Company and stamp)

Name: .....
Date: .....
Place: .....

.....
(Signature and Stamp of statutory Auditors of Bidding Company / each Member of Bidding Consortium)

Name: .....
Date: .....
Place: .....
Date: .....

T.C

ANNEXURE 7D - ADDITIONAL INFORMATION FOR VERIFICATION OF FINANCIAL AND TECHNICAL CAPABILITIES OF BIDDERS.

.....

(Name of Bidder (Bidding Company/ Bidding Consortium or Technically/Financially Evaluated Entity (ies))

(Note: In case of Consortium, details to be filled in by Lead Member for each Member of the Consortium including the Lead Member and in case of the qualification requirements of Technically / Financially Evaluated Entity (ies) being used, to be filled by each of such entity (ies)

i. **Financial capability (Attachment 1):**

1. Bidders shall attach unconsolidated / consolidated audited annual accounts, statements, as the case may be, (refer Clause 2.1.3) for the last three (3) financial years as Attachment 1. Such unconsolidated audited annual accounts shall include a Balance Sheet, Profit and Loss Account, Auditors Report and profit appropriation account.

ii. **Technical capability (Attachment 2):**

a. This attachment shall include details of projects completed/commissioned or partly completed projects for which commercial operation has commenced to be considered for the purpose of meeting Qualification Requirements.

1. To be used by Bidder using development experience in infrastructure sector

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Name(s) of project(s) from Infrastructure sectors					
Location(s) including country(s) where project was set up					
Nature of Project					
Voltage level (if any)					
Capital cost of project(s) Rs. in Crore					
*Status of the project					
% of equity owned in the project(s)					

***Note 1:** Date of completion/commissioning/commercial operation to be mentioned

Note 2: For each project listed in the table, the Bidder shall furnish an executive summary including the following information:

- Project model, i.e., BOO, BOOT, BOOM;
- Debt financing and equity raised and provided by Bidder/Bidder's Parent/Bidder's Affiliate for the project, including names of lenders and investors;
- Size and type of installation;
- Technical data/information on major equipment installed

T.C

- Description of role performed by the Bidder/Bidder's Parent/Bidder's Affiliate on the project
- Clearances taken by the Bidder/Bidder's Parent/Bidder's Affiliate including but limited to right-of-way (RoW), forest clearance and other statutory / Govt. clearances.
- Cost data (breakdown of major components)
- Name of EPC and/or other major contractor
- Construction time for the project
- Names, addresses and contact numbers of owners of the projects
- Operating reliability over the past five (5) years or since date of commercial operation
- Operating environmental compliance history
- Names of supervisory entities or consultant, if any
- Date of commercial operation
- Total duration of operation

2. To be used by Bidder using construction experience in infrastructure sector

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Name(s) of project(s) from Infrastructure sectors					
Location(s) including country(s) where project was set up					
Nature of Project					
Voltage level (if any)					
Revenue received Rs. in Crore					
*Status of the project					
% of equity owned in the project(s)					

***Note 1:** Date of completion/commissioning/commercial operation to be mentioned

Note 2: For each project listed in the table, the Bidder shall furnish an executive summary including the following information:

- Project model, i.e., EPC, Turnkey;
- Size and type of installation;
- Technical data/information on major equipment installed
- Description of role performed by the Bidder/Bidder's Parent/Bidder's Affiliate on the project
- Cost data (breakdown of major components)
- Name of sub-contractor
- Construction time for the project
- Names, addresses and contact numbers of owners of the projects
- Operating reliability over the past five (5) years or since date of commercial operation
- Operating environmental compliance history
- Names of supervisory entities or consultant, if any
- Date of commercial operation
- Total duration of operation

iii. Attachment-3:

a. For each project listed in Attachment 2 above, certificates of final acceptance and/or certificates of good operating performance duly issued by owners for the project and the same shall be certified as true by authorized signatory of the Bidding Company or the Lead

Member of Consortium). In case the project listed in Attachment 2 is under BOOT / DBFOT mechanism, the certificates of final acceptance and/or certificates of good operating performance must be issued by the authority / independent engineer of the project as defined in the respective project agreement.

For and on behalf of Bidding Company/Consortium

M/s.....

.....

(Signature of authorized signatory)

Name: .....
Designation: .....
Date: .....
Place: .....

T. C

ANNEXURE 8 -UNDERTAKING AND DETAILS OF EQUITY INVESTMENT

Format 1: Bidders' Undertakings

[On the Letter Head of the Bidding Company/Lead Member of Bidding Consortium]

Date: .....

To,

PFC Consulting Limited
9thFloor, Wing-A, Statesman House,
Connaught Place, New Delhi - 110001

Dear Sir,

Sub: Bidders' Undertakings in respect of Bid for selection of Bidder as TSP to establish Inter-State transmission system for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"

We hereby undertake on our own behalf and on behalf of the TSP, that if selected as the Successful Bidder for the Project:

1. The Project shall comply with all the relevant electricity laws, codes, regulations, standards and Prudent Utility Practices, environment laws and relevant technical, operational and safety standards, and we shall execute any agreements that may be required to be executed as per law in this regard.

2. We confirm that the Project shall also comply with the standards and codes as per Clause 1.6.1.2 of the RFP and the TSP shall comply with the provisions contained in the Central Electricity Regulatory Commission Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-state Transmission and related matters Open Access) Regulations, 2009.

3. We give our unconditional acceptance to the RFP dated **October 15, 2024** issued by the BPC and the RFP Project Documents, as amended, and undertake to ensure that the TSP shall execute all the RFP Project Documents, as per the provisions of this RFP.

4. We have submitted the Bid on the terms and conditions contained in the RFP and the RFP Project Documents. Further, the Financial Bid submitted by us is strictly as per the format provided in Annexure 21 of the RFP, without mentioning any deviations, conditions, assumptions or notes in the said Annexure.

5. Our Bid is valid up to the period required under Clause 2.8 of the RFP.

6. Our Bid has been duly signed by authorized signatory and stamped in the manner and to the extent indicated in this RFP and the power of attorney / Board resolution in requisite format as per RFP has been enclosed with this undertaking.

7. We have assumed that if we are selected as the Successful Bidder, the provisions of the Consortium Agreement, to the extent and only in relation to equity lock in and our liability thereof shall get modified to give effect to the provisions of Clause 2.5.8 of this RFP and Article 18.1 of the Transmission Service Agreement. ***(Note:** This is applicable only in case of a Bidding Consortium).*

T. C

8. *We confirm that our* Bid *meets the Scheduled COD of each transmission Element and the Project as specified below:*

Sl. No	Name of the Transmission Element	Scheduled COD as per Gazette Notification	% of Quoted Transmissio Charges recoverable on Scheduled COD of the Element of the Project	Element(s) which are pre-required for declaring the commercial operation (COD of the respective Element
1.	Establishment of 4x1500 MVA, 765/400 and 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level	24 months	100	Element at Sl. No. 2, 3 and 4
2.	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			Element at Sl. No. 1, 3 and 4
3.	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			Element at Sl. No. 1, 2 and 4
4.	± 300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR			Element at Sl. No. 1, 2 and 3

We agree that the payment of Transmission Charges for any Element irrespective of its successful commissioning on or before its Scheduled COD shall only be considered after the successful commissioning of Element(s) which are pre - required for declaring the commercial operation of such Element as mentioned in the above table.

Scheduled COD for the Project: 24 Months from Effective Date.

9. We confirm that our Financial Bid conforms to all the conditions mentioned in this RFP, and in particular, we confirm that:

   a. Financial Bid in the prescribed format of Annexure 21 has been submitted duly signed by the authorized signatory.

T.C

b. Financial Bid is unconditional.

c. Only one Financial Bid has been submitted.

10. We have neither made any statement nor provided any information in this Bid, which to the best of our knowledge is materially inaccurate or misleading. Further, all the confirmations, declarations and representations made in our Bid are true and accurate. In case this is found to be incorrect after our acquisition of **SPV [which is under incorporation]**, pursuant to our selection as Selected Bidder, we agree that the same would be treated as a TSP's Event of Default under Transmission Service Agreement, and relevant provisions of Transmission Service Agreement shall apply.

11. We confirm that there are no litigations or other disputes against us which materially affect our ability to fulfill our obligations with regard to the Project as per the terms of RFP Project Documents.

12. Power of attorney/ Board resolution as per Clause 2.5.2 is enclosed.

Signature and name of the authorized signatory of the Company and stamp of Bidding Company or Lead member of Consortium

Note:

1. In case of foreign Bidders, refer to clause 2.5.6 (p)

T.C

Format 2: Details of equity investment in Project

1.1.a Name of the Bidding Company/ Bidding Consortium:

1.1.b Name of the Lead Member in the case of a Bidding Consortium:

1.2 Investment details of the Bidding Company/Member of the Bidding Consortium investing in **SPV [which is under incorporation]** as per Clause 2.5.8.2.

S. No.	Name of the Bidding Company/ Member in case of a Bidding Consortium	Name of the Company investing in the equity of the _____[Name of SPV]	Relationship with Bidding Company /Member of the Bidding Consortium	% of equity participation in the _____[Name of SPV]
(1)	(2)	(3)	(4)	(5)
TOTAL				100%

* In case the Bidder proposes to invest through its Affiliate(s) / Parent Company / Ultimate Parent Company, the Bidder shall declare shareholding pattern of such Affiliate(s) / Parent Company / Ultimate Parent Company and provide documentary evidence to demonstrate relationship between the Bidder and the Affiliate(s) / Parent Company / Ultimate Parent Company. These documentary evidences could be, but not limited to, demat account statement(s) / Registrar of Companies' (ROC) certification / share registry book, etc duly certified by Company Secretary.

Members of the Consortium or the Bidding Company making investment in the equity of the _____[Name of SPV] themselves to fill in their own names in the column (3)

Signature and Name of authorized signatory in whose name power of attorney has been issued

Signature of authorized signatory

Name: .....

Designation: .....

Date.....

Company rubber stamp

T. C

ANNEXURE 9 -AUTHORISATION FROM PARENT/ AFFILIATE OF BIDDING COMPANY/ MEMBER OF BIDDING CONSORTIUM WHOSE TECHNICAL/ FINANCIAL CAPABILITY HAS BEEN USED BY THE BIDDING COMPANY/ MEMBER OF BIDDING CONSORTIUM.

[On the Letter Head of the Parent /Affiliate]

Name: .....
Full Address: .....
Telephone No.: .....
E-mail address: .....
Fax / No.: .....

To

PFC Consulting Limited
9th Floor, Wing-A, Statesman House,
Connaught Place, New Delhi - 110001

Dear Sir,

Sub: Authorization for use of Technical / Financial Capability of M/s..... (Insert name of Parent / Affiliate) by M/s ..... (Insert name of Bidding Company / Member of Bidding Consortium).

We refer to the RFP dated **October 15, 2024** ('RFP') issued by you for selection of Bidder as Transmission Service Provider for establishing the Inter-State Transmission System for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"**.

We confirm that M/s. ..... (Insert name of Bidding Company/ Consortium Member) has been authorized by us to use our technical and/or financial capability [strikeout whichever is not applicable] for meeting the Qualification Requirements for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"**.

We have carefully read and examined in detail the RFP including in particular, Clause 2.1.4 of the RFP, and we are also submitting legally binding undertaking supported by a board resolution that **all** the equity investment obligations of M/s..... (Insert Name of Bidding Company / Consortium Member), shall be deemed to be our equity investment obligations and in the event of any default the same shall be met by us.
For and on behalf of M/s..... (Insert Name of Parent / Affiliate)

.....
(Signature and Name of the authorized signatory of the Company and stamp)

Name: .....
Date: .....
Place: .....

Notes:

T. C

1. The above undertaking can be furnished by Ultimate Parent of Technically Evaluated Entity or Financially Evaluated Entity, as the case maybe, if legally binding undertaking is also furnished by the Ultimate Parent on behalf of such Financially Evaluated Entity/Technically Evaluated Entity.

ANNEXURE 10- FORMAT OF UNDERTAKING BY TECHNICALLY / FINANCIALLY EVALUATED ENTITY / ULTIMATE PARENT COMPANY

[On the Letter Head of the Technically / Financially Evaluated Entity / Ultimate Parent Company]

Name: .....

Full Address: .....

Telephone No.: .....

E-mail address: .....

Fax/No.: .....

To:

Chief Executive Officer
PFC Consulting Limited
9thFloor, Wing-A, Statesman House,
Connaught Place, New Delhi - 110001

Sub: Undertaking for equity investment

Dear Sir,

We refer to the Request for Proposal dated **October 15, 2024** ('RFP') issued by you regarding setting up of Inter-State transmission system for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"** Project on build, own, operate and transfer basis.

We have carefully read and examined in detail the RFP and the RFP Project Documents, including in particular, Clause 2.1.4 of the RFP and Clauses 2.5.2 and 2.5.8 of the RFP, regarding submission of an undertaking regarding the investment in the equity share capital of **SPV [which is under incorporation]** and provisions for minimum equity holding and equity lock-in. We have also noted the amount of the equity investment required to be made in **SPV [which is under incorporation]** by the ..... [Insert the name of the Bidder or the Consortium Member] for the Project.

In view of the above, we hereby undertake to you and confirm that in the event of failure of .....[Insert the name of the Bidder or the Consortium Member] to invest in full or in part, in the equity share capital of **SPV [which is under incorporation]** as specified in the Bid, we shall invest the said amount not invested by.....[Insert the name of the Bidder or the Consortium Member] in **SPV [which is under incorporation]** by purchase of existing shares or subscribing to the new shares of **SPV [which is under incorporation]**, as stipulated by you.

We have attached hereto certified true copy of the Board resolution whereby the Board of Directors of our Company has approved issue of this Undertaking by the Company.

All the terms used herein but not defined, shall have the meaning as ascribed to the said terms under the RFP.

Certified as true.

.....

T.C

(Signature and Name of the authorized signatory of the Company and stamp)

Note:

1. Wherever required, extract of the charter documents and documents such as a Board resolution should be submitted for verification.

ANNEXURE 11 - FORMATS FOR BOARD RESOLUTIONS

Format 1

Format of the Board resolution for the Bidding Company / each Member of the Consortium / investing Affiliate / Parent Company / Ultimate Parent Company, where applicable

[Reference Clause 2.5.2 of the RFP and the illustrations in Annexure 11A]

[**Note:** The following resolution no.1 needs to be passed by the Boards of each of the entity/ (ies) making equity investment]

The Board, after discussion, at the duly convened Meeting on ..... [Insert date], with the consent of all the Directors present and in compliance of the provisions of the Companies Act, 1956/2013, passed the following Resolution:

1. **RESOLVED THAT** pursuant to the provisions of the Companies Act, 1956 / Companies Act 2013 (as the case may be) and compliance thereof and as permitted under the Memorandum and Articles of Association of the company, approval of the Board be and is hereby accorded for investment of.....% (.....per cent) of the total equity share capital of **SPV [which is under incorporation]** representing the entire amount proposed to be invested by the company for the transmission system for "**Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)**", partly by acquisition of the existing equity shares from PFC Consulting Limited and / or partly by subscribing to the new equity shares, as per the terms of the RFP.

[**Note:** Equity investment obligations by the Bidding Company/each Member of the Bidding Consortium/investing Affiliate or Parent or Ultimate Parent should add up to 100%.]

[**Note:** In the event the Bidder is a Bidding Consortium, the following Board resolution no. 2 also needs to be passed by the Lead Member of the Bidding Consortium]

2. **RESOLVED THAT** approval of the Board be and is hereby accorded to contribute such further amount over and above the;..... percentage (__%) limit to the extent becoming necessary towards the total equity share in the **SPV [which is under incorporation]**, obligatory on the part of the company pursuant to the terms and conditions contained in the Consortium Agreement dated .....executed by the company as per the provisions of the RFP.

[**Note:** In the event, the investing entity is an Affiliate or Parent or Ultimate Parent of the Bidder, the following Board resolution no. 3 shall also be passed by the Bidder]

3. **FURTHER RESOLVED THAT** the Board hereby acknowledges the Board Resolution(s) passed by the..... [Name of the Affiliate(s)/ Parent / Ultimate Parent] regarding the investment of.....(....%) of the equity share capital requirements of **SPV [which is under incorporation]**, which is to be invested by the .....[Name of the Affiliate(s)/ Parent / Ultimate Parent] for the **SPV [which is under incorporation]**, partly by acquisition of the existing equity shares from PFC Consulting Limited and partly by subscribing to the new equity shares, as per the terms of the RFP.

[**Note:** The following resolution no. 4 is to be provided by the Bidding Company / Lead Member of the Consortium only]

4. FURTHER RESOLVED THAT MR/MS .....be and is hereby authorized to take all the steps required to be taken by the Company for submission of the Bid, including in particular, signing of the Bid, making changes thereto and submitting amended Bid, all the documents related to the Bid, certified

T.C

copy of this Board resolution or letter or undertakings etc, required to be submitted to BPC as part of the Bid or such other documents as may be necessary in this regard.

Certified True Copy

Company rubber stamp to be affixed

[Notes:

1) This certified true copy should be submitted on the letterhead of the Company, signed by the Company Secretary or any Whole Time Director/ Manager (supported by a specific board resolution) of the Bidding Company or the Lead Member of Consortium.

2) The contents of the format may be suitably re-worded indicating the identity of the entity passing the resolution, i.e., the Bidding Company, each Member of the Bidding Consortium.

3) This format may be modified only to the limited extent required to comply with the local regulations and laws applicable to a foreign entity submitting this resolution. For example, reference to Companies Act 1956 / Companies Act 2013 (as the case may be) may be suitably modified to refer to the law applicable to the entity submitting the resolution. However, in such case, the foreign entity shall submit an unqualified opinion issued by the legal counsel of such foreign entity, stating that the Board resolutions are in compliance with the applicable laws of the respective jurisdictions of the issuing company and the authorizations granted therein are true and valid.]

T.C

Format 2

Format for the Board resolution of Technically / Financially Evaluated Entity / Ultimate Parent Company (in case credentials of such TEE/ FEE has been utilized by the Bidding Company or Bidding Consortium)

The Board, after discussion, at the duly convened Meeting on ..... [Insert date], with the consent of all the Directors present and in compliance of the provisions of the Companies Act, 1956 / 2013, passed the following Resolution:

RESOLVED THAT pursuant to the provisions of the Companies Act, 1956 / Companies Act, 2013 (as the case may be) and compliance thereof and as permitted under the Memorandum and Articles of Association of the company, approval of the Board be and is hereby accorded for issuing an Undertaking to the BPC, in the format specified in the RFP issued by the BPC, draft of which is attached hereto and initialed by the Chairman whereby the company undertakes to invest .....percent (.... %) of the total equity share capital of **SPV [which is under incorporation]** representing the entire amount proposed to be invested by .....[insert the name of the Bidder or Member] for the said Project, in case of failure of .....[Insert the name of the Bidder or Member] to make such investment".

FURTHER RESOLVED THAT ..... ,be and is hereby authorized to take all the steps required to be taken by the Company, including in particular, signing the said Undertaking, submitting the same to the BPC through .....[Insert name of Bidding Company/Lead Member of the Consortium] of all the related documents, certified copy of this Board resolution or letter, undertakings etc, required to be submitted to BPC as part of the Bid or such other documents as may be necessary in this regard.

Certified True Copy

Company rubber stamp to be affixed

Note:

1. This certified true copy should be submitted on the letterhead of the Company, signed by the Company Secretary or any Whole-time Director/Manager (supported by a specific board resolution) of Bidding Company or Lead Member of the Consortium.

2. The contents of the format may be suitably re-worded indicating the identity of the entity passing the resolution.

3. This format may be modified only to the limited extent required to comply with the local regulations and laws applicable to a foreign entity submitting this resolution. For example, reference to Companies Act 1956 / Companies Act 2013 (as the case may be) may be suitably modified to refer to the law applicable to the entity submitting the resolution. However, in such case, the foreign entity shall submit an unqualified opinion issued by the legal counsel of such foreign entity, stating that the Board resolutions are in compliance with the applicable laws of the respective jurisdictions of the issuing company and the authorizations granted therein are true and valid.

T.C

ANNEXURE 11A – ILLUSTRATION FOR APPLICABLE BOARD RESOLUTION REQUIREMENTS UNDER CLAUSE 2.5.2

Investor in the TSP	Entities (other than Bidder) whose credentials (financial and/or technical) used by the Bidder for meeting RFP criteria	Applicable Board Resolutions	Requirement of Undertaking (Annexure 10)
Bidder himself for 100% equity	None	a) Format 1 of Annexure 11 - Resolution: 1, 2 and 4 from the Bidder	None
Bidder himself for 100% equity	Affiliate and/or Parent Company and/or Ultimate Parent	a) Format 1 of Annexure 11 - Resolution: 1, 2, and 4 from the Bidder b) Format 2 of Annexure 11 by either Technically/ Financially Evaluated Entity(ies) whose credentials have been used, or Ultimate Parent. Provided, if the Bidder himself is the Ultimate Parent, then Format 2 need not be provided.	Yes, by either Technically / Financially Evaluated Entity(ies) Affiliate(s) whose credentials have been used, or Ultimate Parent. Provided, if the Bidder himself is the Ultimate Parent, then the undertaking need not be provided.
Bidder himself + others (Affiliate and/or Parent Company and/or Ultimate Parent) in aggregate holding 100% equity	None	a) Format 1 of Annexure 11 - Resolution: 1,2, 3 and 4 from the Bidder. b) Format 1 of Annexure 11 - Resolution: 1 from the Affiliate and /or Parent and /or Ultimate Parent investing in the equity	None
Bidder himself + others (Affiliate and/or Parent Company and/or Ultimate Parent) in	Affiliate and/or Parent Company and/or Ultimate Parent	a) Format 1 of Annexure 11 - Resolution: 1,2, 3 and 4 from the Bidder.	Yes, by either Parent/ Affiliate(s) whose credentials have been used, or Ultimate Parent

T.C

Investor in the TSP	Entities (other than Bidder) whose credentials (financial and/or technical) used by the Bidder for meeting RFP criteria	Applicable Board Resolutions	Requirement of Undertaking (Annexure 10)
Aggregate holding 100% equity		b) Format 1 of Annexure 11 - Resolution: 1 from the Affiliate and/or Parent and/or Ultimate Parent investing in the equity c) Format 2 of Annexure 11 by either Parent / Affiliate(s) whose credentials have been used and /or Ultimate Parent investing in the equity	

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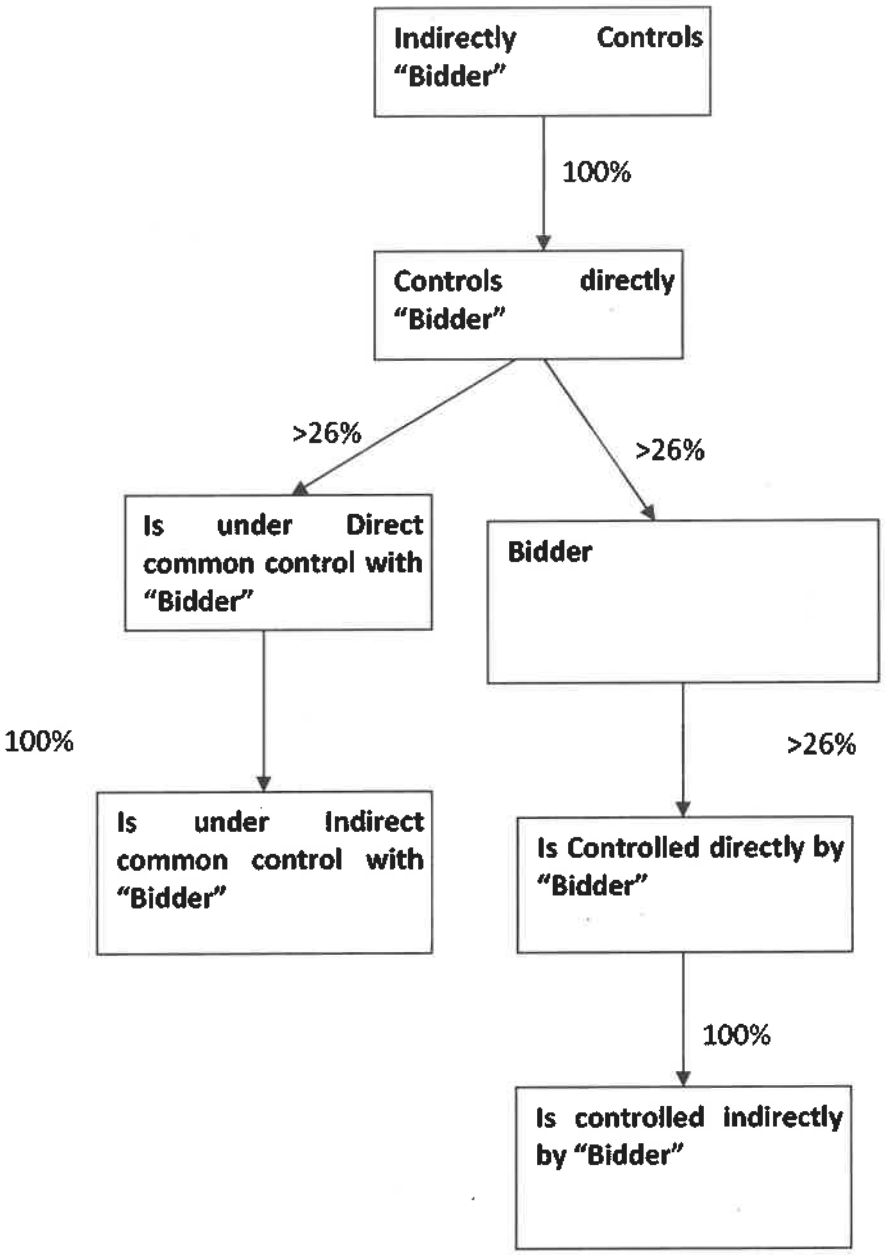
ANNEXURE 12 - FORMAT FOR ILLUSTRATION OF AFFILIATES



NOTE: **Bidder to provide the illustration, as applicable in their case, duly certified by the Company Secretary and supported by documentary evidence in this regard.**

ANNEXURE 13 - FORMAT FOR DISCLOSURE

[On the letter head of Bidding Company / Each Member in a Bidding Consortium]

Date: .....

DISCLOSURE

We hereby declare that the following companies with which we/ have direct or indirect relationship are also separately participating in this Bid process as per following details

S. No.	Name of the Company	Relationship
1.		
2.		
3.		

In case there is no such company please fill in the column "name of the company" as Nil.

Further we confirm that we don't have any Conflict of Interest with any other company participating in this bid process.

Certified as True

.....
(Signature)

Name: .....

Signature & Name of authorized signatory of the Company and Stamp

The above disclosure should be signed and certified as true by the authorized signatory of the Bidding Company or of the Member, in case of a Consortium).

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ANNEXURE 14 - FORMAT OF THE BID BOND

FORMAT OF THE UNCONDITIONAL AND IRREVOCABLE BANK GUARANTEE FOR BID BOND

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.)

In consideration of the .....[Insert name of the Bidder] submitting the Bid inter alia for establishing the Inter-State transmission system for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"** on build, own, operate and transfer basis, in response to the RFP dated **October 15, 2024** issued by PFC Consulting Limited, and the Bid Process Coordinator (hereinafter referred to as BPC) agreeing to consider such Bid of ..... [Insert the name of the Bidder] as per the terms of the RFP, the [Insert name and address of the bank issuing the Bid Bond, and address of the Head Office] (hereinafter referred to as "Guarantor Bank") hereby agrees unequivocally, irrevocably and unconditionally to pay to PFC Consulting Limited or its authorized representative at _____[Address of BPC] forthwith on demand in writing from PFC Consulting Limited or any representative authorized by it in this behalf, any amount up to and not exceeding Rupees_____ Only (Rs _____ Crore),on behalf of M/s.....[Insert name of the Bidder].

This guarantee shall be valid and binding on the Guarantor Bank up to and including ..... [Date to be inserted on the basis of Clause 2.11 of this RFP] and shall not be terminable by notice or any change in the constitution of the Guarantor Bank or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between concerned parties.

Our liability under this Guarantee is restricted to Rupees _____ Only (Rs ____ Crore). Our Guarantee shall remain in force until ..... [Date to be inserted on the basis of Clause 2.11 of this RFP]. PFC Consulting Limited or its authorized representative shall be entitled to invoke this Guarantee until ..... [Insert Date, which is three sixty-five days (365) days after the date in the preceding sentence]. The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand from PFC Consulting Limited or its authorized representative, made in any format, raised at the above-mentioned address of the Guarantor Bank, in order to make the said payment to PFC Consulting Limited or its authorized representative.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection, disputes, or disparities raised by the Bidder or any other person. The Guarantor Bank shall not require PFC Consulting Limited or its authorized representative to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against PFC Consulting Limited or its authorized representative in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly PFC Consulting Limited or its authorized representative shall not be obliged before enforcing this BANK

GUARANTEE to take any action in any court or arbitral proceedings against the Bidder, to make any claim against or any demand on the Bidder or to give any notice to the Bidder to enforce any security held by PFC Consulting Limited or its authorized representative or to exercise, levy or enforce any distress, diligence or other process against the Bidder.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rupees _____ Only (Rs ____ Crore) and it shall remain in force until ..... [Date to be inserted on the basis of Clause 2.11 of RFP], with an additional claim period of three hundred sixty-five (365) days thereafter. We are liable to pay the guaranteed amount or any part thereof under this BANK GUARANTEE only if PFC Consulting Limited or its authorized representative serves upon us a written claim or demand.

In witness whereof the Bank, through its authorized officer, has set its hand and stamp on this..... day of .....at.....

Witness:

1.....
Name and Address

2. .....
Name and Address

Signature: .....
Name: .....

Designation with Stamp:

Signature .....

Attorney as per power of attorney
No.....

For:
..... [Insert Name of the Bank]

Banker's Stamp and Full Address:

Dated this ..... day of ..... 20.....

Notes:
The Stamp Paper should be in the name of the Executing Bank.

ANNEXURE 15 - FORMAT FOR CONTRACT PERFORMANCE GUARANTEE

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution. Foreign entities submitting Bids are required to follow the applicable law in their country)

In consideration of the ..... [Insert name of the SPV or Selected Bidder on behalf of SPV or Lead Member in case of the Consortium, with address] agreeing to undertake the obligations under the Transmission Service Agreement dated ..... and the other RFP Project Documents and the Nodal Agency and PFC Consulting Limited, agreeing to execute the RFP Project Documents with the Selected Bidder, regarding setting up the Project, the.....[Insert name and address of the bank issuing the guarantee and address of the head office] (hereinafter referred to as "Guarantor Bank") hereby agrees unequivocally, irrevocably and unconditionally to pay to the Nodal Agency at..... [Insert Place and Address of the Nodal Agency indicated in TSA] forthwith on demand in writing from the Nodal Agency or any Officer authorized by it in this behalf, any amount up to and not exceeding Rupees.....Crores (Rs.....) only [Insert the amount of the bank guarantee] on behalf of M/s..... [Insert name of the Selected Bidder / SPV].

This guarantee shall be valid and binding on the Guarantor Bank up to and including .....and shall not be terminable by notice or any change in the constitution of the Bank or the term of the Transmission Service Agreement or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective agreement.

Our liability under this Guarantee is restricted to Rupees ..... Crores (Rs.....) only. Our Guarantee shall remain in force until..... [Insert the date of validity of the Guarantee as per Clause 2.12.1 of the RFP]. The Nodal Agency shall be entitled to invoke this Guarantee up to three hundred sixty five (365) days of the last date of the validity of this Guarantee.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand from the Nodal Agency, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to the Nodal Agency.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by **SPV [which is under incorporation]**, ... [Insert name of the Selected Bidder], ... [Insert name of the TSP] and/or any other person. The Guarantor Bank shall not require the Nodal Agency to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against the Nodal Agency in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring, liquidation, winding up, dissolution or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly the Nodal Agency shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against **SPV [which is under incorporation]** or the Selected Bidder, to make any claim against or any demand on **SPV [which is under incorporation]** or the Selected Bidder, as the case may be, or to give any notice to **SPV [which is under incorporation]** or the Selected Bidder, as the case may be, or to enforce any security held by the Nodal Agency or to exercise, levy or enforce any distress, diligence or other process against **SPV [which is under incorporation]** or the Selected Bidder, as the case may be.

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The Guarantor Bank acknowledges that this BANK GUARANTEE is not personal to the Nodal Agency and may be assigned, in whole or in part, (whether absolutely or by way of security) by Nodal Agency to any entity to whom the Nodal Agency is entitled to assign its rights and obligations under the Transmission Service Agreement.

The Guarantor Bank hereby agrees and acknowledges that the Nodal Agency shall have a right to invoke this Bank Guarantee either in part or in full, as it may deem fit.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rupees .....Crore (Rs .....) only and it shall remain in force until [Date to be inserted on the basis of Article 3.1.2 of TSA], with an additional claim period of three hundred sixty five (365) days thereafter. This BANK GUARANTEE shall be extended from time to time for such period, as may be desired by..... [Insert name of the Selected Bidder or Lead Member in case of the Consortium or SPV]. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if the Nodal Agency serves upon us a written claim or demand.

In witness where of:

Signature.....

Name: .....

Power of attorney No.: .....

For:

..... [Insert Name of the Bank]

Banker's Seal and Full Address, including mailing address of the Head Office

Notes:

1. The Stamp Paper should be in the name of the Executing Bank.

ANNEXURE 16 – FORMAT OF CHECKLIST FOR TECHNICAL BID SUBMISSION REQUIREMENTS

[This format needs to be duly filled in, signed by the authorized signatory of the Bidder (Bidding Company / Lead Member in case of a Bidding Consortium) and submitted along with the Bidder's Technical Bid]

	Technical Bid Submission Requirements	Response (Yes / No)
1.	Format for the Covering Letter on the letterhead of Bidding Company or Lead Member of the Consortium, as applicable;	
2.	Format for Letter of Consent from each Consortium Member, including Lead Member, on their respective letterheads;	
3.	Format for evidence of authorized signatory's authority;	
4.	Board resolution from the Bidding Company / Lead Member of the Consortium in favour of the person executing the Power of Attorney as per Annexure 3;	
5.	Power of Attorney from each Consortium Member in favour of Lead Member to be provided by each of the other Members of the Consortium as per Annexure 4;	
6.	Board Resolution from each Member of the Consortium, other than the Lead Member, in favour of their respective authorized representatives for executing the POA, Consortium Agreement and signing of the requisite formats;	
7.	Format for Bidder's composition and ownership structure, along with status of equity holding (owning ten percent or more of the total paid up equity) not earlier than thirty (30) days prior to the Bid Deadline as per Annexure 5;	
8.	Consortium Agreement duly signed as per Annexure 6, along with Appendix-1, indicating the responsibilities and obligations of each Member of the Consortium;	
9.	Format for Qualification Requirement:	
	a. Calculation sheets, detailing computation of Networth considered for meeting Qualifying Requirements, duly signed and stamped by the Statutory Auditor of the Bidding Company / each Member in case of a Bidding Consortium / FEE in cases where credentials of FEE are taken;	
	b. Calculation sheets, detailing computation of capital expenditure of projects and revenue received in construction projects considered for meeting Qualification Requirements, duly signed and stamped by the Statutory Auditor of the Bidding Company / Lead Member in case of Bidding Consortium / TEE in cases where credentials of TEE are taken;	
	c. Last financial year unconsolidated / consolidated audited annual accounts / statements, as the case may be, of the Financially Evaluated Entity / Technical Evaluated Entity	
	d. Unconsolidated audited annual accounts of both the TEE and the Bidding Company/Lead member, as applicable, from the financial years in which financial closure was achieved till the financial year in	

	Technical Bid Submission Requirements	Response (Yes / No)
	which the said project was completed / commissioned.	
10.	Copy of the Memorandum and Articles of Association and certificate of incorporation or other organizational document (as applicable), including their amendments, certified by the Company Secretary of Bidding Company or each Member in case of a Consortium including Lead Member.	
11.	Attachment of Annexure 7(D), detailing projects completed / commissioned and for which commercial operation has commenced including Executive Summary for each project.	
12.	For each project listed in the attachment above, certified true copy of the certificates of final acceptance and / or certificates of good operating performance duly issued by owners or clients for the project, duly signed by authorized signatory in support of technical capability as defined in Clause 2.1.2 of RFP.	
13.	Authority letter in favour of BPC from the Bidder/every Member of the Consortium authorizing the BPC to seek reference from their respective bankers & others.	
14.	Authorization from Parent / Affiliate of Bidding Company / Member of Bidding Consortium whose technical / financial capability has been used by the Bidding Company / Member of Bidding Consortium.	
15.	Initialing of all pages of Technical Bid by the Authorized Signatory in whose favour the POA (Annexure 3) has been executed.	
16.	Format for Illustration of Affiliates at the most seven (7) days prior to the Bid Deadline, duly certified by Company Secretary and supported by documentary evidence.	
17.	Certified copy of the Register of Members / Demat Account Statement, Share Certificate, Annual Return filed with ROC etc. submitted as documentary evidence along with Annexure 12.	
18.	Format for Disclosure by Bidding Company / each Member of the Consortium.	
19.	Format for Affidavit by the Bidding Company / each Member of the Consortium	
20.	Format for Authorization submitted in Non-Judicial stamp paper duly notarized.	
21.	Bidders Undertaking and details of Equity Investment	
22.	Proof of Payment of RFP Fees	
23.	Bid Bond	
24.	Board Resolution as per Annexure 11 (If required)	

[Note: The checklist is not exhaustive. Bidders are required to submit all the information/documents as per requirement of RFP]

For and on behalf of Bidder

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M/s. .....

.....
(Signature of authorized signatory)

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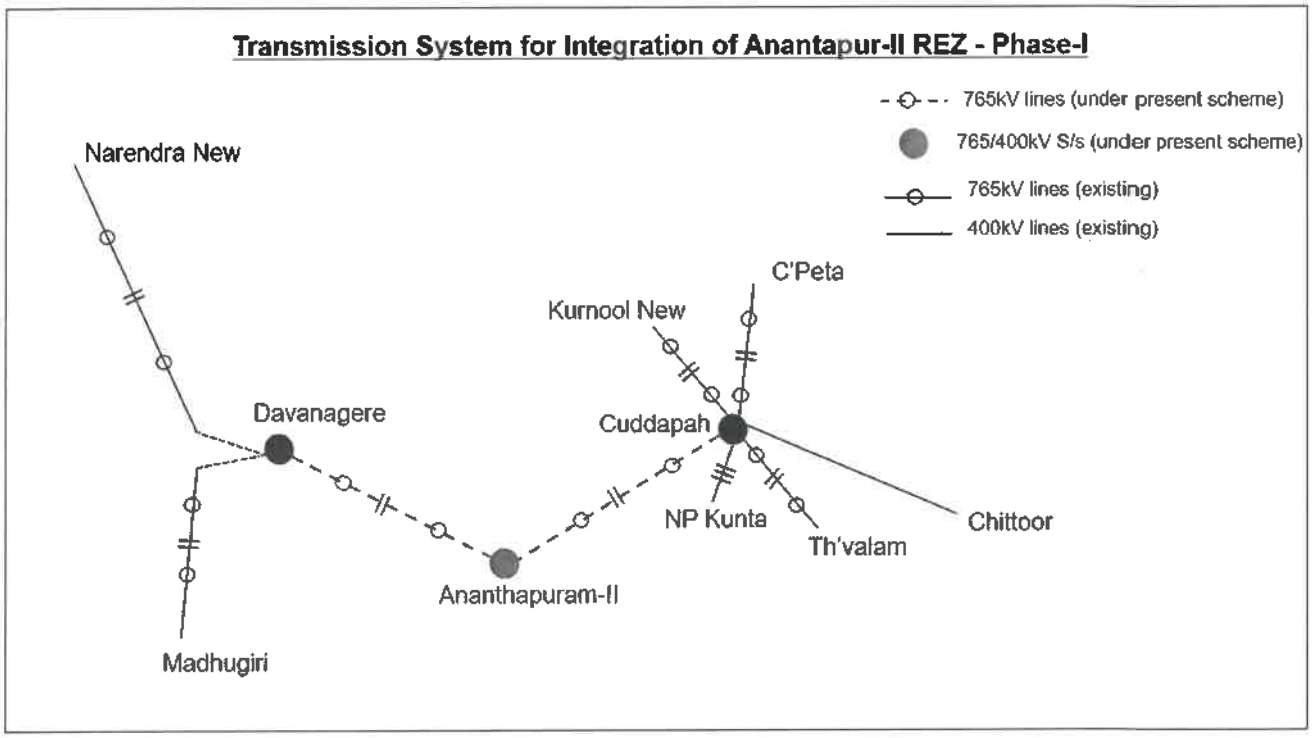
ANNEXURE 17 – LIST OF BANKS

The list of banks shall include all Scheduled Commercial Banks as per Second Schedule of RBI Act-1934 and any amendments thereof.

Note:
The above list of banks is indicative and can be modified by the BPC as required and any such change shall not be construed as a deviation from this document.

T.C

ANNEXURE 18 - GRID MAP OF THE PROJECT



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ANNEXURE 19 - FORMAT FOR CLARIFICATIONS / AMENDMENTS ON THE RFP / RFP PROJECT DOCUMENTS

S. No.	Name of the Document	Clause No. and Existing provision	Clarification required	Suggested text for the amendment	Rationale for the Clarification or Amendment

Signature .....

Name.....

For

Bidder's Rubber Stamp and Full Address.

(Note: This format shall be used for submission of requests for clarifications/ amendments on the draft RFP Project Documents as per the provisions of Clause 2.3.1)

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ANNEXURE 20 - LIST FOR RFP PROJECT DOCUMENTS

ENCLOSURE 1: **TRANSMISSION SERVICE AGREEMENT (Provided separately)**

ENCLOSURE 2: **SHARE PURCHASE AGREEMENT (Provided Separately)**

.....

ANNEXURE 21 - FORMAT FOR FINANCIAL BID

[To be uploaded online]

Quoted Transmission Charges .....

Notes

1. The Bidders are required to ensure compliance with the provisions of Clause 2.5.3 of this RFP.
2. Quotes to be in Rupees Millions and shall be up to two (2) decimal points.
3. The contents of this format shall be clearly typed.
4. The Financial Bid shall be digitally signed by the authorized signatory in whose name power of attorney as per Clause 2.5.2 is issued.
5. Ensure only one value for annual Transmission Charges is quoted. The same charge shall be payable every year to TSP for the term of TSA.

T.C

ANNEXURE 22 – FORMAT FOR AFFIDAVIT

[On non-judicial stamp paper. Foreign companies submitting bids are required to follow the applicable law in their country]

AFFIDAVIT

We [including any of our Affiliate and Consortium Member & any of its Affiliate], hereby declare that as on Bid Deadline:

a. the Bidder & any of its Affiliate including any Consortium Member & any of its Affiliate, their directors or key personnel have not been barred or included in the blacklist by any government agency or authority in India, the government of the jurisdiction of the Bidder or Members where they are incorporated or the jurisdiction of their principal place of business, any international financial institution such as the World Bank Group, Asian Development Bank, African Development Bank, Inter-American Development Bank, Asian Infrastructure Investment Bank etc. or the United Nations or any of its agencies; or

b. the Bidder & any of its Affiliate including any Consortium Member & any of its Affiliate or their directors have not been convicted of any offence in India or abroad.

We further declare that following investigations are pending / no investigation is pending [strike off whichever is not applicable] against us [including any of our Consortium Member or Affiliate or Parent or Ultimate Parent or Affiliate] or CEO or any of our directors/ manager/key managerial personnel of the Applicant /Consortium Member or their Affiliates.

We further undertake to inform the BPC of any such matter as mentioned above on its occurrence after the date of this affidavit till the Effective Date.

We undertake that, in case, any information provided in relation to this affidavit is found incorrect at any time hereafter, our BID / Letter of Intent / contract (if entered) would stand rejected / recalled / terminated, as the case may be.

.....

Signature and Name of the authorized signatory of the Bidding Company / Lead Member of the Bidding Consortium

.....

(Signature of Notary Public)

Place: .....

Date: .....

Note: In case any investigation is pending against the Applicant, including any Consortium Member or Affiliate, or CEO or any of the directors/ manager/key managerial personnel of the Applicant /Consortium /Member or their Affiliates, full details of such investigation including the name of the investigating agency, the charge/offence for which the investigation has been launched, name and

designation of persons against whom the investigation has been launched and other relevant information should be disclosed under this affidavit.

T.C

ANNEXURE A
Technical Details with respect to electronic bidding

Registration Methodology

In order to submit online bids in the e-bidding process for selection of Transmission Service Provider, interested Bidders are required to register themselves with the e-procurement website of MSTC limited namely www.mstcecommerce.com/eprochome/tsp/index.jsp. To register with the website, the Bidder is required to fill up the online form available under the link Register as Vendor in the above website and fill up the same and click on Submit.

During this process, the Bidder shall create his user id and password and keep note of the same. The Bidder shall ensure that the secrecy of his user id and password is maintained at all time and he/she shall alone be responsible for any misuse of the user id and password.

The Bidder may check the details entered by it before final submission. On successful submission of the online registration Form, the Bidder shall receive a confirmation mail in the registered email address advising the Bidder to submit the following documents.

i. Self-attested Income Tax PAN Card. In case of a registered Company or Firm, the Firm's PAN card and in case of a proprietorship firm, proprietor's personal PAN card is required. In case of partnership firm, PAN of the firm and that of the authorized partner are to be submitted.

ii. Copy of the confirmation email Letter received from MSTC after successful completion of on-line registration.

iii. A non-refundable registration fee of Rs.10,000/- plus GST as per applicable rate to be paid online. The account details will be available in the System generated email sent by MSTC post registration.

Please provide details of payment made like UTR No, remitting bank name, date of payment and amount in the covering letter.

The Bidder shall have to submit all the above documents to MSTC Limited for verification and activation of their login ids. The Bidders should send scanned copies of the above documents to the designated email id only which is given below.

tsp@mstcindia.co.in

It may be noted that Bidders need not visit any of the offices of MSTC Limited for submission of the documents.

Contact persons of MSTC Limited:

Ms. Rupali
9458704037

Mr. Setu Dutt Sharma

T.C

7878055855

Once the complete set of documents and requisite registration fee are received from a Bidder, MSTC shall activate the Bidder's login after verification / scrutiny of the documents. MSTC Limited reserves the right to call for additional documents from the Bidder if needed and the Bidder shall be obliged to submit the same.

On completion of the above stated registration process, a Bidder shall be able to login to MSTC's website.

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ANNEXURE B
Draft Pre-Award Integrity Pact

GENERAL

This pre-bid contract Agreement (herein after called the Integrity Pact) is made on ..... day of the month of ..... 20....., between, on one hand, ... [Insert name of BPC] through Shri ..... [Insert Name & designation of representative of BPC] (hereinafter called the "Bid Process Coordinator/ BPC", which expression shall mean and include, unless the context otherwise requires, his successors in the office and assigns) of the First Part and M/s ..... represented by Shri ..... [Insert Name & Designation of Authorized Signatory of the Bidder/ Lead Member of Consortium] (hereinafter called the "Bidder" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BPC is conducting the bidding process for selection of bidder as Transmission Service Provider (TSP) for "**Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)**", who will be responsible to set up the transmission project on build, own, operate and transfer (BOOT) basis and to provide Transmission Service.

WHEREAS the Bidder is a Private Company/Public Company/Government Undertaking/ Partnership, constituted in accordance with the relevant law in the matter and the BPC is a Public Sector Undertaking (PSU) performing its function on behalf of the Ministry of Power, Government of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings during the complete bidding process with a view to: -

Enabling the BPC to select the bidder as TSP in conformity with the defined procedures by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling Bidder to abstain from bribing or indulging in any corrupt practice in order to emerge as selected bidder by providing assurance to them that their competitors will also abstain from bribing and other practices and the BPC will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

Commitments of BPC

11 The BPC undertakes that no official of the BPC, connected directly or indirectly with the bidding process, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person,

T.C

organization or third party related to the bidding process in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

12 The BPC will, during the bidding stage, treat all bidders alike, and will provide to all bidders the same information and will not provide any such information to any particular bidder which could afford an advantage to that particular bidder in comparison to the other bidders.

13 All the officials of the BPC will report the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2. In case of any such preceding misconduct on the part of such official(s) is reported by the Bidder to the BPC with the full and verifiable facts and the same is *prima facie* found to be correct by the BPC, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BPC and such a person shall be debarred from further dealings related to the bidding process. In such a case while an enquiry is being conducted by the BPC the proceedings under the bidding process would not be stalled.

Commitments of Bidder

3. The Bidder commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre award stage in order to emerge as Selected Bidder or in furtherance to secure it and in particular commits itself to the following: -

3.1 The Bidder will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BPC, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the bidding process in exchange for any advantage in the bidding, evaluation, contracting and implementation of the bidding process.

3.2 The Bidder further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BPC or otherwise in bidding process or for bearing to do or having done any act in relation to bidding process or any other contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the bidding process or any other contract with the Government.

3.3 The Bidder shall disclose the name and address of agents and representatives and Indian Bidder shall disclose their foreign principals or associates.

T.C

3.4 The Bidder shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid.

3.5 The Bidder further confirms and declares to the BPC that the Bidder has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BPC or any of its functionaries, whether officially or unofficially for selection of Bidder as TSP, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

3.6 The Bidder, either while presenting the bid or during pre-award negotiations or before signing the Share Purchase Agreement, shall disclose any payments he has made, is committed to or intends to make to officials of the BPC or their family members, agents, brokers or any other intermediaries in connection with the bidding process and the details of services agreed upon for such payments.

3.7 The Bidder will not collude with other parties interested in the bidding process to impair the transparency, fairness and progress of the bidding process.

3.8 The Bidder will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

3.9 The Bidder shall not use improperly, for purpose of competition or personal gain, or pass on to others, any information provided by the BPC as part of the business relationship, regarding plans, technical proposal and business details, including information contained in any electronic data carrier. The Bidder also undertakes to exercise due and adequate care lest any such information is divulged.

3.10 The Bidder commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.11 The Bidder shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.12 The Bidder shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BPC.

4. Previous Transgression

4.1 The Bidder declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify Bidder's

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exclusion from the bidding process.

4.2 The Bidder agrees that if it makes incorrect statement on this subject, Bidder can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. **Bid Bond (Security Deposit)**

5.1 Along with the technical bid, the Bidder shall submit Bid Bond for an amount of **Rs.51.50 Crore (Rupees Fifty-One Crore Fifty Lakh Only)** issued by any Banks from the list provided in RFP Document] as Earnest Money/Security Deposit, with the BPC.

5.2 The Earnest Money/Security Deposit shall be valid & retained by the BPC for such period as specified in the RFP Document.

5.3 No interest shall be payable by the BPC to the Bidder on Earnest Money/Security Deposit for the period of its currency.

6. **Sanctions for Violations**

6.1 Any breach of the aforesaid provisions by the Bidder or any one employed by it or acting on its behalf (whether with or without the knowledge of the Bidder) shall entitle the BPC to take all or anyone of the following actions, wherever required:-

(i) To immediately call off the pre-award negotiations without assigning any reason or giving any compensation to the Bidder. However, the proceedings with the other Bidder (s) would continue.

(ii) The Bid Bond (in pre-award stage) shall stand forfeited either fully or partially, as decided by the BPC and the BPC shall not be required to assign any reason therefore.

(iii) To immediately cancel the award, if already awarded, without giving any compensation to the Bidder.

(iv) To cancel all or any other contracts with the Bidder. The Bidder shall be liable to pay compensation for any loss or damage to the BPC resulting from such cancellation/rescission.-

(v) To debar the Bidder from participation in any tender or RFP issued by any BPC for an indefinite period.

(vi) To recover all sums paid in violation of this Pact by Bidder to any middleman or agent or broker with a view to securing the award.

6.2 The BPC will be entitled to take all or any of the actions mentioned at para 6.1 (i) to (vi) of

T.C

this Pact also on the Commission by the Bidder or anyone employed by it or acting on its behalf (whether with or without the knowledge of the Bidder), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the BPC to the effect that a breach of the provisions of this Pact has been committed by the Bidder shall be final and conclusive on the Bidder. However, the Bidder can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. **Independent Monitors**

7.1 The BPC has appointed Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission (Names and Addresses of the Monitors to be given).

Shri Rajiv Ranjan
No. 170, 11th Cross, 3rd Main,
RMV Stage 2, Dollars Colony
Bengaluru North
Bengaluru- 560094
Mob No – 9448147003
Email ID- rranjan68@gmail.com

Shri Jeyakodi Virusankulam Kumarasamy, IAS (Retd.)
R/o 3F, Orchid Villa, 6" Avenue,
Harrington Road, Chetpet,
Chennai-600031
Mob No – 9176699444
Email ID- jeyakodivk@gmail.com

7.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

7.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

7.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.

7.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BPC.

7.6 The Bidder accepts that the Monitors has the right to access without restriction to all Project documentation of the BPC including that provided by the Bidder. The Monitor shall be under contractual obligation to treat the information and documents of the Bidder /Subcontractors(s) with confidentially. [As all the bid documents are with BPC only]

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7.7 The BPC will provide to the Monitors sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the monitor the option to participate in such meetings.

7.8 The Monitor will submit a written report to the designated Authority of the BPC/Secretary in the Department within 8 to 10 weeks from the date of reference or intimation to him by the BPC / Bidder and, should the occasion arise, submit proposals for correcting problematic situations.

8. **Facilitation of Investigation**

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BPC or its agencies shall be entitled to examine all the documents including the Books of Accounts of the Bidder and the Bidder shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

9. **Law and Place of Jurisdiction**

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BPC.

10. **Other Legal Actions**

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the any extent law in force relating to any civil or criminal proceedings.

11. **Validity**

11.1 The validity of this Integrity Pact shall be from date of its signing and up to 6 months from the date of transfer of project specific SPV i.e., signing of Share Purchase Agreement with BPC. In case Bidder is unsuccessful, this Integrity Pact shall expire after 15 days from the date of transfer of project specific SPV to successful bidder.

11.2 Should one or several provisions of this Pact turn out to be invalid, the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

12. The Parties hereby sign this Integrity Pact at _____on

T. C

ANNEXURE-C

LOCATION DETAILS OF EXISTING / PROPOSED SUBSTATIONS

a) **765/400/220 kV Ananthapuram-II PS:**

New substation which is to be implemented under present scheme.

b) **765 kV Davangere S/s:**

Yet to be finalized by developer.

c) **765 kV Cuddapah S/s:**14°22'48.56"N, 78°47'54.10"E

Note: *The above coordinates/location of substation indicated is approximate in the substation area. Exact coordinates for the corresponding bays/gantry for termination of the respective line may be verified and finalized in coordination with actual site.*

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SPECIFIC TECHNICAL REQUIREMENTS FOR TRANSMISSION LINE

The design, routing and construction of transmission lines shall be in accordance with Chapter V, Part A of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022, as amended from time to time. Other CEA Regulations/ guidelines as amended up to date and MoP guidelines, as applicable, shall also be followed.

A.1.0 Selection of tower type shall be made as per CEA Regulations, however, in case lattice type towers are used, the following shall also be applicable:

A.2.0 Steel section of grade E 250 and/or grade E 350 as per IS 2062, only are permitted for use in towers, extensions, gantry structures and stub setting templates. For towers in snowbound areas, steel sections shall conform to Grade-C of IS-2062.

A.3.0 Towers shall be designed as per IS-802:2015, however the drag coefficient of the tower shall be as follows: -

Solidity Ratio	Drag Coefficient
Upto 0.05	3.6
0.1	3.4
0.2	2.9
0.3	2.5
0.4	2.2
0.5 and above	2.0

A.4.0 Transmission Service Provider (TSP) shall adopt any additional loading/design criteria for ensuring reliability of the line, if so desired and /or deemed necessary.

A.5.0 Transmission line shall be designed considering wind zones as specified in wind map given in National Building Code 2016, Vol.1. The developer shall also make his own assessment of local wind conditions and frequent occurrences of High Intensity Winds (HIW) due to thunderstorms, dust storms, downburst etc. along the line route and wherever required, higher wind zone than that given in wind map shall be considered for tower design for ensuring reliability of line. Further, for transmission line sections passing within a distance of 50 km from the boundary of two wind zones, higher of the two wind zones shall be considered for design of towers located in such sections.

A.6.0 Selection of reliability level for design of tower shall be as per CEA Regulation (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022, as amended from time to time.

A.7.0 **A)** For power line crossing of 400 kV or above voltage level, large angle and dead end towers (i.e. D/DD/QD) shall be used on either side of power line crossing.

B) For power line crossing of 132 kV and 220 kV (or 230 kV) voltage level, angle towers (B/C/D/DB/DC/DD/ QB/QC/QD) shall be used on either side of power line crossing depending upon the merit of the prevailing site condition and line deviation requirement.

C) For power line crossing of 66 kV and below voltage level, suspension/tension towers shall be provided on either side of power line crossing depending upon the merit of the prevailing site condition and line deviation requirement.

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D) For crossing of railway tracks, national highways and state highways, the rules/ regulations of appropriate authorities shall be followed.

A.8.0 The relevant conductor configuration for 765 kV shall be as follows: -

i. **Ananthapuram-II – Davangere 765 kV D/C line**

ii. **Ananthapuram-II – Cuddapah 765 kV D/C line**

Type of conductor: ACSR / AAAC / AL59

Basic Parameters:

Transmission line	**ACSR Conductor specified**	**Equivalent AAAC conductor based on 53.5% conductivity of Al Alloy**	**Equivalent minimum size of AL59 conductor based on 59% conductivity of AL Alloy***	**Sub-conductor Spacing**
765 kV D/C (Hexa Bundle) Transmission Lines	**Zebra : Stranding** 54/3.18 mm-Al + 7/3.18 mm-Steel, 428 mm^2, Aluminium area, 28.62 mm diameter Maximum DC Resistance at 20°C (Ω/km): 0.06868 Minimum UTS: 130.32 kN	**Stranding details:** 61/3.19 mm, 487.5 mm^2 Aluminium alloy area 28.71 mm diameter Maximum DC Resistance at 20°C (Ω/km): 0.06815 Minimum UTS: 135.6 kN	**Stranding details:** 61/3.08 mm, 454 mm^2 Aluminium alloy area 27.72 mm diameter Maximum DC Resistance at 20°C (Ω/km): 0.0653 Minimum UTS: 108 kN	457 mm

Note:

1. **To select any size above the minimum, the sizes mentioned in the Indian standard IS-398(part-6) shall be followed.*
2. *The transmission lines shall have to be designed for a maximum operating conductor temperature of 85 deg C.*

A.9.0 The required phase to phase spacing and horizontal spacing for 765 kV line shall be governed by the tower design as well as minimum live metal clearances for 765 kV voltage level under different insulator swing angles. However, the phase to phase spacing for 765 kV line shall not be less than 15 m.

A.10.0 All electrical clearances including minimum live metal clearance, ground clearance and minimum mid span separation between earth wire and conductor as given below shall be considered:

Minimum live metal clearances for 765 kV line:

a) (i) Under stationary conditions

From tower body: For 765 kV D/C: 6.1 m

For 765 kV S/C: 5.6 m·

(ii) Under swing conditions

Wind Pressure Condition	Minimum Electrical Clearance
a) Swing angle (25º)	4.4 m
b) Swing angle (55º)	1.3 m

b) Minimum ground clearance for 765 kV line: 18 m

c) Minimum mid span separation between earth-wire and conductor for 765 kV line: 9.0 m

A.11.0 The shielding angle shall not exceed 10 deg for 765 kV D/C transmission line.

A.12.0 The Fault current for design of line shall be 50 kA for 1 sec for 765 kV.

A.13.0 In case of 400 kV and above voltage class lines, at least one out of two earth wires shall be OPGW and second earth wire, if not OPGW, shall be either of Galvanized Standard Steel (GSS) or Aluminum Alloy Conductor Steel Reinforced (AACSR) or any other suitable conductor type depending upon span length and other technical consideration.

A.14.0 Each tower shall be earthed such that tower footing impedance does not exceed 10 ohms. Pipe type or Counterpoise type earthing shall be provided in accordance with relevant IS. Additional earthing shall be provided on every 7 to 8 km distance for direct earthing of both shield wires. If site condition demands, multiple earthing or use of earthing enhancement compound shall be used.

A.15.0 Pile type foundation shall be used for towers located in river or creek bed or on bank of river having scourable strata or in areas where river flow or change in river course is anticipated, based on detailed soil investigation and previous years' maximum flood discharge of the river, maximum velocity of water, highest flood level, scour depth and anticipated change in course of river based on river morphology data of at least past 20 years to ensure availability and reliability of the transmission line.

A.16.0 Transmission line route shall be finalized, in consultation with appropriate authorities so as to avoid the habitant zones of endangered species and other protected species. Bird diverters, wherever required, shall be provided on the line. In order to optimize the route, use of GATISHAKTI platform shall also be made.

A.17.0 Wherever, transmission lines are passing through cyclone prone areas i.e., areas upto 60 km from coast following shall also be applicable:

a) Terrain category-I, with terrain roughness factor (K2) of 1.08 shall be considered for tower design for exposed open terrain with few or no obstruction, which also includes open sea coasts, open stretch of water, desert and flat treeless plains.

b) Importance factor for cyclonic region (K4) of 1.3 shall be considered for tower design.

c) The number of consecutive spans between the section points/ angle point shall not exceed 10 spans or 3 km instead of conventional practice of 15 spans or 5 km, in order to reduce the failure of such towers in coastal areas due to cascading effect. The section shall be terminated with tension tower/ angle tower and angle of deviation should be based on the site requirement.

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A.18.0 Wherever, transmission lines are passing through cyclone prone areas (i.e. areas upto 60 km from coast)/ creek regions/ aggressive soil areas following shall also be applicable:

a) The fabricated tower parts and stubs shall have a minimum overall zinc coating of 900 g/m^2 of surface area except for plates and sections below 5 mm which shall have a minimum overall zinc coating of 610 g/m^2 of surface area. The average zinc coating for all sections and plates 5 mm and above shall be maintained as 127 microns and that for plates and sections below 5 mm shall be maintained as 87 microns.

b) Ready mix concrete of M30 Grade shall be used to avoid use of locally available saline water. However, design mix concrete of M30 Grade conforming to IS 456 with potable water can be used at locations where transportation of ready-mix concrete is not feasible. Minimum cement content in any case shall not be less than 330kg/m^3.

c) The surface of the reinforced steel shall be treated with epoxy-based coating to enhance corrosion performance of foundation. Use of epoxy coated reinforcement in foundation shall be as per IS 13620. In addition, two (2) coats of bituminous painting of minimum 1.6 kg/m^2 per coat shall be applied on all exposed faces of foundation (i.e. pedestal and base slab).

d) Double coat 20 mm thick cement plaster shall be provided on all exposed concrete surface as well up to 300 mm below ground level to give protection to concrete surface from environmental and saline effect.

e) Before coping of chimney top portion, three coats of anti-corrosive paint of minimum 30-35 microns dry film thickness each shall be applied on the stub in the 50 mm coping portion as well as up to 350 mm above CL portion.

A.19.0 The raised chimney foundation is to be provided in areas prone to flooding/water stagnation like paddy field /agricultural field and undulated areas to avoid direct contact of water with steel part of tower. The top of the chimney of foundation should be at least above HFL (High Flood Level) or the historical water stagnation/ logging level (based on locally available data) or above High Tide Level or 500 mm above Natural Ground level (whichever is higher).

A.20.0 Routing of transmission line through protected areas of India shall be avoided to the extent possible. In case, it is not possible to avoid protected areas, the towers of the transmission line upto 400 kV level, which are installed in protected areas shall be designed for Multi-circuit (4 circuits) configuration of same voltage level considering reliability level of at least two (2). The top two circuits of these multi-circuit towers shall be used for stringing of the transmission line under present scope and the bottom two circuits shall be made available for stringing of any future transmission line of any transmission service providers/ State transmission utilities/Central transmission utilities passing through the same protected area. Further, the configuration and coordinates of such transmission towers shall be submitted to CEA, CTU and BPC by the TSP.

A.21.0 The TSP shall abide by the Guidelines of CEA w.r.t. shifting of transmission lines for NHAI projects and other projects.

A.22.0 Safety precautions in regards to gas/oil pipelines in vicinity of Transmission lines shall be taken in coordination with gas/ petroleum authorities.

SPECIFIC TECHNICAL REQUIREMENTS FOR SUBSTATION

The proposed **Ananthapuram-II PS** shall be conventional Air Insulated Switchgear (AIS) type conforming to the requirements of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022, as amended from time to time.

Extension of proposed **Davangere S/s** shall be conventional AIS type conforming to the requirements of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022, as amended from time to time.

Extension of proposed **Cuddapah S/s** shall be Gas Insulated Switchgear GIS type conforming to the requirements of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022, as amended from time to time.

Other CEA Regulations/guidelines as amended up to date and MoP guidelines, as applicable, shall also be followed.

B.1.0 Salient features of Substation Equipment and Facilities

The design and specification of substation equipment are to be governed by the following factors:

B.1.1 Insulation Coordination

The system design parameters for substations/switchyards shall be as given below:

Sl. No.	Description of parameters	765/400/220 kV Ananthapuram-II PS (AIS)			765 kV Davangere S/s Extn.	765 kV Cuddapah S/s Extn.
		765 kV System	400 kV System	220 kV System	765 kV System	765 kV System
1.	System Operating Voltage	765 kV	400 kV	220 kV	765 kV	765 kV
2.	Maximum voltage of the system (rms)	800 kV	420 kV	245 kV	800 kV	800 kV
3.	Rated Frequency	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
4.	No. of Phases	3	3	3	3	3
5.	Rated Insulation Levels					
i)	Lightning Impulse Withstand Voltage for (1.2/50 micro sec.) - for Equipment other than Transformer and Reactor - for Insulator String	2100 kVp 2100 kVp	1425 kVp 1550 kVp	1050 kVp 1050 kVp	2100 kVp 2100 kVp	2100 kVp 2100 kVp
ii)	Switching Impulse Withstand Voltage	1550 kVp	1050 kVp	--	1550 kVp	1425 kVp

Sl. No.	Description of parameters	765/400/220 kV Ananthapuram-II PS (AIS)			765 kV Davangere S/s Extn.	765 kV Cuddapah S/s Extn.
		765 kV System	400 kV System	220 kV System	765 kV System	765 kV System
	(250/2500 micro sec.) dry and wet					
iii)	One minute power frequency dry withstand voltage (rms)	830 kV	630 kV	--	830 kV	960 kV
iv)	One minute power frequency dry and wet withstand voltage (rms)	--	--	460 kV	--	--
6.	Corona Extinction Voltage	508 kV	320 kV	--	508 kV	508 kV
7.	Max. radio interference voltage for frequency between 0.5 MHz and 2 MHz	2500 micro-volts at 508 kV rms	1000 micro-volts at 266 kV rms	1000 micro-volts at 156 kV rms	2500 micro-volts at 508 kV rms	2500 micro-volt at 508 kV rms
8.	Minimum creepage distance for insulator string/ long rod insulators/ outdoor bushings	24800 mm (31 mm/kV)	13020 mm (31 mm/kV)	7595 mm (31 mm/kV)	24800 mm (31 mm/kV)	24800 mm (31 mm/kV)
9.	Minimum creepage distance for switchyard equipment	20000 mm (25 mm/kV)	10500 mm (25 mm/kV)	6125 mm (25 mm/kV)	20000 mm (25 mm/kV)	20000 mm (25 mm/kV)
10.	Max. Fault Current	50 kA	63 kA	50 kA	50 kA	50 kA
11.	Duration of fault	1 sec	1 sec	1 sec	1 sec	1 sec

B.1.2 Switching Scheme

The switching schemes, as mentioned below, shall be adopted at various voltage levels of substation/switchyard:

Substation	765 kV side	400 kV side	220 kV side
765/400/220 kV Ananthapuram-II PS (AIS)	One and Half breaker	One and Half breaker	Double Main and Transfer
765 kV Davangere S/s Extn. (AIS)	One and Half breaker	---	---
765 kV Cuddapah S/s Extn. (GIS)	One and Half breaker	---	---

Notes: -

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i) *For one and half breaker switching scheme, any double circuit line consisting of two numbers of feeders and originating from the same transmission or generating switchyard shall not be terminated in one diameter.*

ii) *Two transformers of same HV rating shall not be connected in the same diameter and similarly two bus reactors of same HV rating shall also not be connected in the same diameter.*

iii) *A diameter in one and half breaker scheme is a set of 3 circuit breakers with associated isolators, earth switches, current transformers etc for controlling 2 (two)numbers of feeders.*

iv) *In case of GIS substation where the bus scheme is One and Half breaker scheme, the diameters shall be complete with feeder/line side isolator and GIS duct of the future bay shall be brought outside the GIS hall/building with extension/interface module suitably.*

v) *Connection arrangement of Switchable Line reactors shall be such that it can be used as Line reactor as well as Bus reactor with suitable NGR bypass arrangement.*

vi) *Space for 765 kV and 400 kV future line bays shall be kept considering provision of switchable line reactors.*

vii) ***Provision for Bus sectionalizer:***

Space for One (1) set of future bus sectionalizer for 400 kV shall comprise Two (2) Nos. of bus sectionalizer bays with associated Circuit Breakers, Isolators and Current Transformers for both buses.

Space/provision for One (1) set of bus sectionalizer for 220 kV shall comprise Two (2) Nos. of bus sectionalizer bays with associated Circuit Breakers, Isolators and Current Transformers for both buses.

viii) *TSP shall plan connectivity of line and transformer feeders to bus bar in such a way that all power can be evacuated successfully without crossing thermal limit at any point of bus-bar.*

ix) *For AIS type substation, TSP shall keep space provisions for future elements such that interconnection arrangement to the corresponding future bays can be done with overhead AIS type connection without any cable/ GIS duct.*

x) **765/400/220 kV Ananthapuram-II PS :**

765 kV bay configurations (One and Half breaker scheme) shall be as follows:

Configuration	Numbers
ICT- Tie- Line	*4 (four)*
Bus Reactor- Tie- Future(Line)	*2 (two)*

400kV bay configurations (One and Half breaker scheme) shall be as follows:

Configuration	Numbers
ICT (400 kV side of 765/400 kV ICT)- Tie- 400 kV ICT	*4 (four)*
400 kV ICT - Tie- 400 kV STATCOM	*1(one)*
400 kV ICT - Tie- Future (Line)	*1 (one)*

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(i) 400 kV Bus Sectionalization shall be with the following feeder distribution.

400 kV Bus Section-1	*400 kV Bus Section-2 (Future)*
a) 3 Nos. of 765/400 kV ICT b) 6 Nos. of 400/220 kV ICT c) 1 Nos. of STATCOM *d) 3 Nos. of Future 400/220 kV ICT* *e) 6 Nos. of Future 400 kV Lines (with provision for Switchable line reactor)*	a) 1 No. of 765/400 kV ICT *b) 2 Nos. of Future 765/400 kV ICT* *c) 9 Nos. of Future 400/220 kV ICT* *d) 6 Nos. of Future 400 kV Lines (with provision for Switchable line reactor)*

TSP shall implement 400 kV bays keeping the space provision for providing 400 kV Bus Sectionalizer in between section 1 and section 2 in future meeting the requirements of feeder distribution as mentioned above.

(ii) 220 kV Bus Sectionalization shall be with the following feeder distribution.

220kV Bus Section-1	*220kV Bus Section-2*
a) 4 Nos. of present 400/220 kV ICTs b) 5 Nos. of present 220 kV Lines	a) 2 No. of present 400/220 kV ICTs b) 1 No. of present 220 kV Line *c) 2 No. of future 400/220 kV ICT* *d) 04 Nos. future 220 kV Line.*
220kV Bus Section-3 (Future)	***220kV Bus Section-4 (Future)***
a) 05 Nos. future 400/220 kV ICT. *b) 08 Nos. future 220 kV Lines.*	*a) 05 Nos. future 400/220 kV ICT.* *b) 08 Nos. future 220 kV Lines.*

xi) **765 kV Davangere S/s Extn. (AIS):**

Ananthapuram-II – Davangere 765 kV D/C line shall be terminated in two new diameters for which Main and Tie Bays shall be constructed.

xii) **765 kV Cuddapah S/s Extn. (GIS):**

Ananthapuram-II – Cuddapah 765 kV D/C transmission line shall be terminated in existing bay numbers 713 and 716.

765 kV Bay module along with GIB brought outside of the GIS hall for bay numbers 713 and 716 is available for termination of **Ananthapuram-II – Cuddapah 765 kV D/C transmission line** at **Cuddapah**. Line side equipment such as 765 kV GIS duct, SF6 to Air Bushings, LA, CVT, Wave Trap, gantry, protection panel etc. shall be provided under the present scope by the TSP for the line termination.

xiii) Further, all associated interconnection work shall also be in the present scope of TSP.

B.2.0 Substation Equipment and Facilities (Voltage level as applicable):

The switchgear shall be designed and specified to withstand operating conditions and duty requirements. All equipment shall be designed considering the following capacity.

Sl.No	Description of Bay	765/400/220 kV	765 kV	765 kV

		Ananthapuram-II PS			Davangere S/s	Cuddapah S/s
		765 kV	400 kV	220 kV	765 kV	765 kV
1.	Bus Bar	4000 A	4000 A	3000 A	As per existing	As per existing
2.	Line Bay	3150 A	N/A	1600 A	3150 A	3150 A
3.	ICT Bay	3150 A	3150 A	1600 A	N/A	N/A
4.	Reactor Bay	3150 A	N/A	N/A	N/A	N/A
5.	Bus Sectionaliser Bay	N/A	N/A	3000 A	N/A	N/A
6.	Bus Coupler Bay	N/A	N/A	3000 A	N/A	N/A
7.	Transfer Bus coupler Bay	N/A	N/A	1600 A	N/A	N/A
8.	STATCOM Bay	N/A	3150 A	N/A	N/A	N/A

B.2.1 (765/√3)/(400/√3)/33 kV, Single Phase Autotransformer

500 MVA, (765/√3)/(400/√3)/33 kV, 1-phase autotransformer (including arrangement for 3-phase bank formation of 1500 MVA) shall conform to CEA's "Standard Specifications and Technical Parameters for Transformers and Reactors (66 kV and above voltage class)" as amended upto date available on CEA's website.

Spare 1-phase Transformer unit shall be placed and connected in such a way that the spare unit can be utilized to replace any unit of any of the transformer banks (including for future transformer banks) without physically moving it.

B.2.2 400/220/33 kV, 3-phase Autotransformer

500 MVA, 400/220/33 kV, 3-phase autotransformer shall conform to CEA's "Standard Specifications and Technical Parameters for Transformers and Reactors (66 kV and above voltage class)" as amended up to date available on CEA website.

B.2.3 (765/√3) kV, Single Phase Shunt Reactor

80 MVAr and 110 MVAr, 765/√3 kV, 1-Phase Reactor (including arrangement for 3-phase bank formation of 240 MVAr and 330 MVAr, respectively) shall conform to CEA's "Standard Specifications and Technical Parameters for Transformers and Reactors (66 kV and above voltage class)" as amended upto date available on CEA website.

Spare 1-phase Shunt Reactor unit shall be placed and connected in such a way that the spare unit can be utilized for all the bus and switchable line reactor banks (including for future reactor banks) without its physical movement.

Neutral Grounding Reactor and Surge Arrester for 765 kV Switchable Line Reactors (as applicable):

The neutral of the switchable line reactors (wherever provided) shall be grounded through adequately rated Neutral Grounding Reactors (NGR) to facilitate single phase auto-reclosure, provided that the NGR shall be provided with suitable bypass arrangement so that the

switchable line reactor can be used as bus reactor as and when required. The neutral of bus reactor shall be solidly grounded.

NGR shall be oil filled or dry type air core for outdoor application. NGR shall conform to CEA's "Standard specifications and technical parameters of transformers and reactors (66kV and above Voltage Class)", as amended upto date. Technical parameters of NGR shall be as specified in Annexure-A of above-mentioned document.

The surge arresters (rated voltage of arrester in co-ordination with ohmic value of NGR shall be decided by the TSP) shall be provided and physically located between the neutral of shunt reactor (brought out at 145 kV class bushing) and neutral grounding reactor. The surge arresters shall be of Station Medium (SM) class duty gapless Metal Oxide (ZnO) type conforming in general to IEC-60099-4. Arresters shall be hermetically sealed units, of self-supporting construction, suitable for mounting on structures.

The Ohmic value of NGR for Line Reactors shall be as follows:

Sl. No.	Line Name	Substation Name	NGR value (Ohm)
1.	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertble) at Ananthapuram-II end on both circuits.	Ananthapuram-II PS	500
2.	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertble) at Ananthapuram-II end on both circuits.	Ananthapuram-II PS	600

B.2.4 765 kV, 400 kV and 220 kV AIS and GIS Substation equipment (as applicable)

B.2.4.1 Circuit Breakers (AIS)

The circuit breakers and accessories shall conform to IEC: 62271-100, IEC: 62271-1 and shall be of SF_6 Type. The circuit breakers shall be of class C2-M2 (as per IEC) with regard to restrike probability during capacitive current breaking and mechanical endurance. The rated break time shall not exceed 40 ms for 765 kV and 400 kV circuit breakers and 60 ms for 220 kV circuit breakers. The 765 kV, 400 kV and 220 kV circuit breakers shall be provided with single phase and three phase auto reclosing. Each breaker would have two sets of trip circuits, which would be connected to separate DC supplies for greater reliability. The circuit breakers controlling 765 kV lines shall be provided with pre-insertion closing resistor of about 450 ohm maximum with 9 ms insertion time or Controlled Switching Device. The Circuit breakers controlling 400 kV lines shall be provided with pre insertion closing resistor of about 400 ohm with 8 ms insertion time or Controlled Switching Device (CSD) for lines longer than 200 km length. The short line fault capacity shall be same as the rated capacity and this is proposed to achieve without use of opening resistors. The controlled switching device shall be provided in circuit breakers of switchable line reactor bay and in Main and Tie bay circuit breakers of line with non-switchable line reactors, Bus Reactors and Transformers of voltage class 400 kV and above.

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B.2.4.2 Isolators (AIS)

The isolators shall comply with IEC 62271-102 in general. 765kV Isolator design shall be double break or vertical break or knee-type. 400 kV and 220 kV isolators shall be double break type. All isolators and earth switches shall be motor operated. Earth switches shall be provided at various locations to facilitate maintenance. Isolator rated for 400 kV and 220 kV shall be of extended mechanical endurance class – M2 as per IEC-62271-102. Isolator rated for 220 kV shall be suitable for bus transfer current switching duty as per IEC-62271-102. Main blades and earth blades shall be interlocked and interlock shall be fail safe type. The 765 kV, 400 kV and 220 kV earth switch for line isolator shall be suitable for induced current switching duty as defined for Class-B.

B.2.4.3 Current Transformers (AIS)

Current Transformers shall comply with IEC 61869 in general. All ratios shall be obtained by secondary taps only. Generally, Current Transformers (CT) for 765 kV and 400 kV shall have six cores (four for protection and two for metering) and 220 kV Current Transformers shall have five cores (four for protection and one for metering). The burden and knee point voltage shall be in accordance with the requirements of the system including possible feeds for telemetry. The accuracy class for the protection core shall be PX and for the metering core it shall be 0.2S. The rated burden of cores shall be closer to the maximum burden requirement of the metering and protection system (not more than 20 VA for metering core) for better sensitivity and accuracy. The instrument security factor shall be less than five (5) for CTs upto 400 kV and less than ten (10) for CTs of 765 kV voltage class.

B.2.4.4 Capacitive Voltage Transformers (AIS)

Capacitive Voltage Transformers shall comply with IEC 61869 in general. These shall have three secondaries out of which two shall be used for protection and one for metering. The Accuracy class for protection cores shall be 3P and for metering core shall be 0.2. The Capacitive Voltage Transformers on lines shall be suitable for Carrier Coupling. The Capacitance of CVT for 400 kV and 220 kV shall be of 4400/8800 pF depending on PLCC requirements whereas the Capacitance of CVT for 765 kV shall be 8800 pF. The rated burden of cores shall be closer to the maximum burden requirement of metering and protection system (not more than 50 VA for metering core) for better sensitivity and accuracy.

B.2.4.5 Surge Arresters (AIS)

624 kV, 336 kV Station High (SH) duty and 216 kV Station Medium (SM) duty gapless type Surge Arresters with thermal energy (W_{th}) of minimum 13 kJ/kV, 12 kJ/kV and 7 kJ/kV conforming to IEC 60099-4 in general shall be provided for 800 kV, 420 kV and 245 kV systems respectively. Other characteristics of Surge Arrester shall be chosen in accordance with system requirements. Surge arresters shall be provided at line entrances, near transformers and reactors so as to achieve proper insulation coordination. Surge Arresters shall be provided with porcelain/ polymer housing fitted with pressure relief devices. A leakage current monitor with surge counter shall be provided with each surge arrester.

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B.2.4.6 765 kV GIS Duct

The layout of Gas Insulated Bus Ducts shall be properly planned to optimize the length of bus ducts and for easy accessibility for maintenance. The length of busbars, bus ducts, isolator sections shall be optimized considering effects of fast transient voltage due to isolator operations.

B.2.4.7 SF_6 to Air Bushing

Outdoor bushings, for the connection of conventional external conductors to the SF_6 metal enclosed switchgear, shall be provided. Bushings shall generally be in accordance with the requirements of IEC-60137. The creepage distance over the external surface of outdoor bushings shall not be less than 31 mm/ kV. SF_6 to air Bushing shall be of Polymer/ Composite type and shall be robust and designed for adequate cantilever strength to meet the requirement of seismic conditions. The electrical and mechanical characteristics of bushings shall be in accordance with IEC-60137. Polymer/Composite insulator shall be seamless sheath of silicon rubber compound. The housing and weather sheds should have silicon content of minimum 30% by weight. It should protect the bushing against environmental influences, external pollution and humidity. The hollow silicon composite insulators shall comply with the requirements of IEC 61462 and the relevant parts of IEC-62217.

B.2.5 Protection Relaying and Control System

The protective relaying system proposed to be provided for transmission lines, auto-transformers, reactors and bus bars to minimize the damage to the equipment in the events of faults and abnormal conditions, is dealt in this section. All main protective relays shall be numerical type with IEC 61850 communication interface and should have interoperability during integration of numerical relays to communicate over IEC 61850 protocol with RTU/SAS/IEDs of different OEMs. All numerical relays shall have built in disturbance recording feature.

The protection circuits and relays of transformer and reactor shall be electrically and physically segregated into two groups each being independent and capable of providing uninterrupted protection even in the event of one of the protection groups failing, to obtain redundancy, and to take protection systems out for maintenance while the equipment remains in service.

a) Transmission Lines Protection

765 kV and 220 kV lines shall have Main-I numerical three zone distance protection scheme with carrier aided inter-tripping feature. 765 kV and 220 kV lines shall also have Main-II numerical distance protection scheme like Main-I but from different make that of Main-I. The Main-I and Main-II protection relays of same make may be provided only if they are of different hard ware and manufacturing platform or different principle of operation.

However, Line Current Differential Relay (with back up distance protection feature) as Main–I and Main-II shall be considered at both ends for short lines (line length below 30km) having Fibre Optic Communication Link. Differential relay at remote end shall be provided by the TSP. The associated power and control cabling and integration with SAS at remote end shall be provided by respective bay owners.

In case of 220 kV line bays for RE Generators, Line Current differential relay (with back up distance protection feature) as Main-I and Main-II shall be provided. Further, in such cases, the matching line current differential relay for remote end shall be provided by the TSP as loose

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supply.

In case of loop in loop out of transmission lines, the existing protection scheme shall be studied and suitable up-gradation (if required) shall be carried out.

Further, all 765 kV and 220 kV lines shall be provided with single and three phase auto- reclosing facility to allow reclosing of circuit breakers in case of transient faults. These lines shall also be provided with distance to fault locators to identify the location of fault on transmission lines.

All 765 kV and 220 kV lines shall also be provided with two stage over voltage protection. The over voltage protection and distance to fault locator may be provided as in-built feature of Main-I and Main-II protection relays. Auto reclose as built-in function of Bay Control Unit (BCU) is also acceptable.

The Main-I and Main-II protection relays shall be fed from separate DC sources and shall be mounted in separate panels.

For 765 kV and 220 kV transmission lines, directional IDMT earth fault relay should be provided as standalone unit or in-built feature of Main-I and Main -II feature.

b) AutoTransformer Protection

These shall have the following protections:

i) Numerical Differential Protection

ii) Numerical Restricted Earth Fault Protection

iii) Numerical Back-up Over-Current and Earth Fault Protection on High Voltage (HV) and Intermediate Voltage (IV) side

iv) Numerical Over Fluxing Protection on HV and IV side

v) Numerical Overload Alarm

Further, Numerical Back-up Over-current and earth fault protection on HV and IV side of autotransformer shall not be combined with other protective functions in the main relays and shall be independent relays. Besides these, power transformers shall also be provided with Buchholz relay, Magnetic Oil Gauge (MOG) with low oil level alarm, protection against high oil and winding temperature and pressure relief device etc.

Suitable monitoring, control (operation of associated circuit breaker and isolator) and protection for LT auxiliary transformer connected to tertiary winding of auto-transformer for the purpose of auxiliary supply shall be provided. The over current and other necessary protection shall be provided for the auxiliary transformer. These protection and control may be provided as built-in feature either in the bay controller to be provided for the auxiliary system or in the control and protection IEDs to be provided for autotransformer.

c) Reactor Protection

Reactor shall be provided with the following protections:

i) Numerical Differential Protection.

ii) Numerical Restricted Earth Fault Protection

iii) Numerical Back-up impedance protection

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Besides these, reactors shall also be provided with Buchholz relay, Magnetic Oil Gauge (MOG) with low oil level alarm, protection against oil and winding temperatures and pressure relief device, etc.

d) Bus bar Protection

The high-speed low impedance type bus bar differential protection, which is essential to minimize the damage and maintain system stability at the time of bus bar faults, shall be provided for 765 kV, 400 kV and 220 kV buses. Duplicated bus bar protection is envisaged for 765 kV and 400 kV bus-bar protection. Bus bar protection scheme shall be such that it operates selectively for each bus and incorporate necessary features required for ensuring security. The scheme shall have complete bus bar protection for present as well as envisaged future bays i.e. input / output modules for future bays shall also be provided.

Bus Bar protection system for new substation shall be de-centralized(distributed) type.

The scheme shall have complete bus bar protection for present as well as envisaged future bays i.e. input/ output modules for future bays for the bus sections under present scope and PUs shall be provided by the respective bay owners. In case, the bus section is provided, then each side of bus section shall have separate set of bus bar protection schemes.

For existing substations, the existing bus bar protection shall be augmented as per requirement.

e) Local Breaker Back up Protection

This shall be provided for each 765 kV, 400 kV and 220 kV circuit breakers and will be connected to de-energize the affected stuck breaker from both sides.

Notes:

1. *LBB and REF relays shall be provided separately from transformer differential relay.*
2. *LBB relay may also be provided as built-in protection function of distributed bus bar protection scheme; however in such case separate LBB relay shall be provided for tie bays (in case of One and Half breaker scheme).*
3. *Over fluxing and overload protection can be provided as built-in feature of differential relay.*
4. *In 765 kV and 400 kV switchyard, if spare bay of half diameter is identified as future, Tie CB relay panel shall be with Auto-reclosure feature.*

B.2.6 Substation Automation System

a) For all the new substations, state of art Substation Automation System (SAS) conforming to IEC-61850 shall be provided. The distributed architecture shall be used for Substation Automation System, where the controls shall be provided through Bay Control Units. The Bay Control Unit is to be provided bay wise for voltage level 220 kV and above. All Bay Control Units as well as protection units are normally connected through an Optical fibre high speed network. The control and monitoring of circuit breaker, dis-connector, re-setting of relays etc. can be done from Human Machine Interface (HMI) from the Control Room.

The functions of control, annunciation, disturbance recording, event logging and measurement of electrical parameters shall be integrated in the Substation Automation System.

At new substations, the Substation Automation System (SAS) shall be suitable for operation and monitoring of the complete substation including proposed future bays/elements.

In existing substations with Substation Automation System (SAS), augmentation of existing SAS shall be done for bays under present scope.

In existing Substations where Substation automation is not provided, control functions shall be done through control panels.

Necessary gateway and modems (as required) shall be provided to send data to RLDC/SLDC as per their requirement and shall be provisioned with 2+2 redundancy i.e. 2 channels for Main Control Centre and 2 channels for Backup Control Centre. In order to meet this requirement, suitable redundancy at port and card level need to be ensured by the TSP to avoid any single point of failure which may lead to interruption in real-time grid operation. Accordingly, all the hardware for communication services of station as stated above shall support dual redundancy for data transmission of station to respective main and backup RLDCs. Any augmentation work at RLDC/SLDC is excluded from TSP's scope. However, all the configuration work at substation end required to send data to RLDC/SLDC shall be in the scope of TSP.

b) Time Synchronization Equipment

Time Synchronization Equipment complete in all respect including antenna, cable, processing equipment required to receive time signal through GPS or from National Physical Laboratory (NPL) through INSAT shall be provided at new substations. This equipment shall be used to synchronize SAS and IEDs etc.

B.3.0 Substation Support Facilities

Certain facilities required for the operation and maintenance of substations as described below shall be provided at the new substation. In existing substation, these facilities have already been provided and would be extended/ augmented as per requirement.

B.3.1 AC and DC power supplies

For catering the requirements of three phase and single phase AC supply and DC supply for various substation equipment (for present and future scope), the following arrangement is envisaged:-

i) For LT Supply at each new Substation, two (2) Nos. of LT Transformers (minimum 800 kVA for substations with highest voltage rating as 765 kV) shall be provided which shall be fed from two independent sources as per the CEA (Technical Standards for Connectivity to the Grid) Regulations, 2007.

Metering arrangement with Special Energy Meters(SEMs) shall be provided by TSP at 33 kV tertiary of Transformer for drawing auxiliary supply at new substation. Such SEMs shall be provided by CTU at the cost of the TSP. Accounting of such energy drawn by the TSP shall be done by RLDC/RPC as part of Regional Energy Accounting.

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Additionally, Active Energy Meters may be provided at the same point in the 33 kV tertiary of Transformer by local SEB/DISCOM for energy accounting.

ii) 2 sets of 220V battery banks for control and protection and 2 sets of 48V battery banks for PLCC/ communication equipment shall be provided at each new Substation. Each battery bank shall have a float-cum-boost charger.

At new substation, sizing of 220 V battery and battery charger shall be done based on the number of bays specified (including future bays) as per CEA Regulations and relevant IS. 2 sets of 48 V battery banks for PLCC and communication equipment for present and future scope shall be provided at each new Substation with at least 10-hour battery backup and extended backup, if required. 48 V DC can be achieved from 220 V DC battery bank using adapter, if so desired by TSP, without compromising backup time.

iii) Suitable AC and DC distribution boards and associated LT Switch gear shall be provided at new substation.

iv) For new substation, following switch boards shall be considered with duplicate supply with bus coupler/ sectionalizer and duplicate outgoing feeders except for Emergency lighting distribution board which shall have only one in coming feeder:

(a) 415V Main Switchboard–1 No.
(b) AC distribution board– 1 No.
(c) Main lighting distribution board– 1 No.
(d) Emergency lighting distribution board – 1 No.
(e) 220 Volt DC distribution board –2 Nos.
(f) 48 Volt DC distribution board –2 Nos.

Sizing of LT Switchgear shall be suitable to cater the requirement for all present and future bays. AC and DC distribution boards shall have equipped modules for all the feeders(including future as specified).

v) At new Substation, one No. of DG set (minimum 500 kVA for substations with highest voltage rating as 765 kV) shall be provided for emergency applications.

vi) For substation extensions, existing facilities shall be augmented as required.

B.3.2 Fire Fighting System

Fire-fighting system for substation including Transformer and Reactor shall conform to CEA (Measures Relating to Safety and Electric Supply) Regulations, 2023 as amended time to time Further, adequate water hydrants and portable fire extinguishers shall be provided in the substations. The main header of the firefighting system shall be suitable for extension to bays covered under the future scope; necessary piping interface in this regard shall be provided.

At existing substations, the fire-fighting systems as available shall be extended to meet the additional requirements.

B.3.3 Oil evacuating, Filtering, Testing and Filling apparatus

To monitor the quality of oil for satisfactory performance of transformers, shunt reactors and for periodical maintenance necessary oil evacuating, filtering, testing and filling apparatus would

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be provided at new substations. Oil storage tanks of adequate capacities for storage of transformer oil would be provided.

Online Transformer Oil Drying Out System shall be provided in line with the provisions of Standard Specification and Technical Parameters for Transformers and Reactors (66 kV and above Voltage Class) as amended up to date available on CEA website.

B.3.4 Illumination

Normal and emergency AC and DC illumination shall be provided adequately in the control room and other buildings of the substation. The switchyard shall also be provided with adequate illumination.

The lighting of the entire control room building, fire-fighting pump house, other building (if any) and switchyard shall be done by LED based low power consumption luminaries.

B.3.5 Control Room

For the new substation, substation control room shall be provided to house substation work stations for station level control (SAS) alongwith its peripheral and recording equipment, AC and DC distribution boards, DC batteries and associated battery chargers, Fire Protection panels, Telecommunication panels and other panels as per requirements. Air conditioning shall be provided in the building as functional requirements. Main cable trenches from the control room shall have adequate space provision for laying of cables from the control room for all the future bays also.

At existing substations, the adequacy of size of control room shall be ascertained and the same shall be augmented as per requirement.

B.3.6 Control Concept

All the EHV circuit breakers in substation/switching stations shall be controlled and synchronized from the switchyard control room/remote control center. All the isolators shall have control from remote/local whereas the earth switches shall have local control only.

B.3.7 Visual MonitoringSystem (VMS) for watch and ward of substation premises:

Visual Monitoring System for effective watch and ward of substation premises shall cover all the transformers and reactors, all other major AIS Equipment (such as CB, isolators, CT, CVT, SA etc. as applicable), panel room, all the gates of switchyard and all entry and exit points of control room building and accordingly the location of cameras shall be decided. In addition to the gates of the switchyard, the cameras shall also be located around the boundaries at suitable locations. The camera shall be high-definition color CCD camera with night vision feature. The VMS data partly/completely shall be recorded (minimum for 15 days) at least @25fps (or better) and stored on network video recorder. The system shall use video signals from various cameras installed at different locations, process them for viewing on workstations/monitors in the control room and simultaneously record all the cameras. The VMS data should go only to the intended personnel/facility and not to the remote server of the Camera (VMS supplier).

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Mouse/keyboard controllers shall be used for pan, tilt, zoom and other functions of the desired camera. The Visual Monitoring System shall have provision of WAN connectivity for remote monitoring.

All camera recordings shall have Camera ID and location/area of recording as well as date/time stamp. The equipment should generally conform to Electromagnetic compatibility requirement for outdoor equipment in EHV substation.

Advisory on deployment of CCTV issued by Ministry of Electronics and Information Technology (MEITY) shall be followed.

At existing substations, the Visual Monitoring System if available shall be augmented as per existing or better specification as required.

B.4 General Facilities

a) Line Gantry/Towers are envisaged for bays under the present scope only. However, for adjacent future line bay, gantry/tower shall be designed for extension (considering Hexa conductors for 765 kV and Quad conductors for 400 kV future lines and Twin conductor for 220 kV future lines) wherever applicable.

b) Bay extension works at existing substation shall be executed by TSP in accordance with the requirement/provisions mentioned above. However, interface points shall be considered keeping in view the existing design/arrangement at the substation.

c) TSP has to arrange for construction power and water on its own.

d) All outdoor steel structures including anchor/foundation bolts shall be fully galvanized. The weight of the zinc coating shall be at least 610 g/m^2, however, for coastal/creek regions it shall be at least 900 g/m^2. (if applicable)

e) In 765 kV and 400 kV switchyard, if spare bay of half diameter is identified as future, all the equipment for Tie and Future bay shall be designed considering the current rating of line bay i.e. 3150A.

f) Boundary wall shall be brick masonry wall with RCC frame or Stone masonry wall or Precast RCC wall under present scope along the property line of complete substation area including future switchyard area to prevent encroachment and unauthorized access. Minimum height of the boundary wall shall be of 1.8 m from Finished Ground Level (FGL).

g) All electrical equipment shall be installed above the Highest Flood Level and where such equipment is not possible to be installed above Highest Flood Level, it shall be ensured that there is no seepage or leakage or logging of water.

h) As per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines)

Regulations 2022/CEA Manual on Transmissions Planning criteria 2023, line approaching substation shall normally be perpendicular to the substation boundary for a stretch of 2-3 km. Accordingly, TSP shall ensure that line terminations at substations are arranged in a manner to avoid hindrance to future line terminations at the substations.

B.5 EXTENSION OF EXISTING SUBSTATION

The following drawings/details of existing substation are attached with the RfP documents for further engineering by the bidder.

Sl. No.	Drawing Title	Drawing No./Details	Rev. No.
A.	**765 kV Davangere S/s**		
1.0	Single Line Diagram	The drawings shall be obtained from the developer on finalization.	
2.0	General Arrangement		
3.0	Earthmat Layout		
4.0	Visual Monitoring System		
5.0	Bus Bar Protection		
6.0	Substation Automation System (SAS)		
B.	**765 kV Cuddapah S/s**		
1.0	Single Line Diagram	PG/PGCIL/CDP.EXTN./SLD-drg/001	R2
2.0	General Arrangement	TCE-XXXXX-4007-GA-40001	R0
3.0	Earthmat Layout		
4.0	Visual Monitoring System		
5.0	Bus Bar Protection		
6.0	Substation Automation System (SAS)		

Note: Bidder is also advised to visit the substation sites and acquaint themselves with the topography, infrastructure such as the requirement of roads, cable trench, drainage etc. and also the design philosophy.

SPECIFIC TECHNICAL REQUIREMENTS FOR STATCOM

The proposed STATCOMs shall be conforming to the requirements of CEA (Technical Standards for Connectivity to Grid) Regulations, 2007 including amendments and CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022, as amended from time to time. Other CEA Regulations and MoP guidelines, as applicable, shall also be followed and complied with.

Note: These specifications are general in nature applicable to a STATCOM in combination of MSC and MSR. Since, ±300 MVAr STATCOM along with 2x125 MVAr MSR has been specified under the present Scope of work at Ananthapuram-II PS, the specification may be read accordingly.

C.1 Introduction:

This technical specification for a STATCOM Station consists of STATCOM, MSCs (Mechanically Switched Capacitors) and MSRs (Mechanically Switched Reactors) (to be installed at MV bus) including associated coupling Transformer (rated 400/xx kV) and other equipment connected to the 400 kV bus. MV voltage level (xx kV) of the coupling Transformer can be chosen by the TSP to optimize the offered solution which meets functional requirement of this Technical Specification.

The STATCOM station shall operate asymmetrically in the leading and lagging MVAr regions as applicable to reach the dynamic range specified. The purpose of the STATCOM station is to regulate the voltage of 400 kV Bus Point of Common Coupling (PCC). The Configuration and the nominal rating of the STATCOM station is specified in this document.

The main building block of the STATCOM should be single phase Voltage Source Converter (VSC) based convertor valve (multi-level) operating in a way to eliminate or minimize AC filter requirement to High pass filter only and connected to the xx kV bus through air core reactors.

C.1.1 Definitions and Abbreviations

For the purpose of this specification, the following definitions / abbreviations are used:

PCC: Point of Common Coupling (herein also called as Point of Interconnection (POI)). The connection point between the STATCOM and the ISTS at which performance requirements are defined.

Reference Voltage (Vref): The Point on the voltage/current (V/I) characteristics where the static synchronous compensator (STATCOM) is at zero output (i.e. where no reactive power is absorbed from, or supplied to, the transmission system where the voltage is controlled)

MV: Medium Voltage.

STATCOM Unit: Static Synchronous Compensator based on Multi-Module technology and including air cored reactors as needed, Valve cooling, switchgear and its control and protection.

STATCOM: Static Synchronous Compensator consisting of STATCOM Unit(s) connected to a common Coupling Transformer. A static synchronous generator operated as a shunt connected compensator, whose capacitive or inductive output current can be controlled independently of the AC system voltage.

MSC: Mechanically Switched Capacitor (Including Switchgear). A shunt-connected circuit containing a mechanical power-switching device in series with a capacitor bank and a current limiting reactor.

MSR: Mechanically Switched Reactor (Including Switchgear). A shunt-connected circuit containing a mechanical power-switching device in series with a reactor.

Sub Module: Basic single power module of a Multi Module STATCOM unit Valve. It is a Part of a STATCOM unit valve comprising controllable switches and diodes connected in full bridge arrangement, together with their immediate auxiliaries, and storage capacitor, if any, where each controllable switch consists of one or more switched valve device(s) connected in series.

Valve: Electrically and mechanically combined assembly comprising of forced commutated devices [for example insulated-gate bipolar transistor(IGBT)] assembled in levels, complete with all connections, auxiliary components, and mechanical structures, which can be connected in series with each phase of the reactor of a STATCOM unit.

Valve Section: Electrical assembly defined for test purposes, comprising one of several sub-modules.

Valve Structure: Physical structure holding valve(s), which is insulated to the full system voltage above earth potential.

STATCOM Station: STATCOM Station includes 400 kV Switchgear, Coupling Transformer, STATCOM, MSCs (as applicable), MSRs (as applicable) along with its switchgear and complete integrated control and protection whose outputs are coordinated. (Complete turnkey delivery at site).

CT: Current Transformer.

VT: Voltage Transformer.

SAS: Substation Automation System.

Response Time: the duration from a step change in control signal until the voltage changes by 90% of its final change, before any overshoot.

Settling Time: The duration from a step change in control signal input until the STATCOM output settles to within ±5% of the required control output.

Slope: The ratio of the voltage change to the current change over a defined controlled range of the STATCOM, normally the full (inductive plus capacitive) range at nominal voltage, expressed as a percentage.

VSC: Voltage Source Convertor, A forced commutated device (for example, IGBT) based self-commutated convertor that is capable of generating AC voltage from DC capacitor.

Voltage/Current (V/I) Characteristic: The relationship between the current of the STATCOM and the voltage at the point of connection.

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Lagging Operation: Inductive operation or reactive power absorption of the STATCOM similar to a shunt reactor.

Leading Operation: Capacitive operation or reactive power generation of the STATCOM similar to a shunt Capacitor.

TSP: Transmission Service Provider

C.2 Relevant Standard:

STATCOM Station shall comply with the following standards (latest edition):

Sl. No.	Description	Standards
1	Voltage source converter (VSC) valves for STATCOM	IEC- 62927 IEEE- 1052 IEC-60747
2	Control, protection and monitoring	IEC-61000 IEC-60255
3	Valve Hall for housing the equipment as above comprising of: - wall bushings for connection between converter phases and decoupling reactors, - piping and tubing connections of the cooling system to converter - connection of the control cabinet with the converter through optical fibers - internal lighting, auxiliary power supply (AC and DC) and power socket system - internal HVAC system	IEC-60071 IEC-60270 IEC-60137
4	X kV, dry insulated, air core and air self-cooled decoupling reactors. Mechanically Switched Reactors (MSRs), half-reactors stacked on above the other, Outdoor installation, Complete with supporting structures	IEC- 60076
5	Power Capacitors (MSC etc.)	IEC-60871-1
6	400 kV Power transformer (Coupling Transformer)	IEC-60076 IEC-60354
7	CT's and VT's	IEC- 61869
8	Dis-connectors and Earthing Switches	IEC- 62271
9	HV and MV Circuit Breakers	IEC- 62271
10	Surge Arresters	IEC- 60099
11	Auxiliary and grounding transformer	IEC- 60076 IEEE C57.32 IS- 5553 (Part 6)
12	Neutral Grounding Resistor, charging resistor	IEEE- C57.32
13	UPS, SMPS and Other Power supply units	IEC- 62040 IEC- 61558

Sl. No.	Description	Standards
14	Cyber Security	IEC-62243

C.3 Scope of work for STATCOM

The scope of work with regard to the works associated with the STATCOM shall comprise ±300 MVAr Modular Multi-level Voltage Source Converter (MMC-VSC) based STATCOM along with 2x125 MVAr MSR (Mechanically Switched Reactors).

STATCOM can either be Single/ multiple units. The minimum size of a unit allowed is 150 – 200 MVAr. TSP shall ensure that there are no coordination issues between multiple STATCOM branches of STATCOM station. Further complete Dynamic range for STATCOM may also be installed based on appropriate studies instead of combination of VSC with MSC/MSR technology. Minimum MV bus voltage is to be decided by OEMs.

The TSP shall be responsible for the complete installation of STATCOM station along with the substation works as specified in the complete scope of work.

The TSP shall also perform the system studies (steady state and dynamic) according to the requirement mentioned and documentation of the same shall be preserved by TSP and to be submitted to CEA/CTU/GRID-INDIA, as per their request.

TSP shall carry out a detailed study on prevailing system conditions before interconnection of the STATCOM to assess the performance of the STATCOM. Parameters tuning to avoid any adverse impact on the grid with integration of the STATCOM shall also be identified and implemented at this stage. TSP shall carry out tuning of Power Oscillation Damping (POD) along with an interaction study with nearby HVDC/FACTS controllers.

TSP shall ensure interconnection study at the time of commissioning and shall also be responsible for tuning the POD during the license period as per relevant standards (e.g. IEEE 1052).

The switchgear for connection of STATCOM units, MSCs and MSRs provided on the secondary side of the coupling transformer shall be of standard voltage rating as per relevant IEC. The switchgear, structure, control, protection and substation automation on the 400 kV side shall be as per applicable Technical Specification of the substation equipment.

Generally, the purpose of STATCOM is to improve system stability, provide damping, and smooth out the step voltage change associated with MSCs, MSRs and external compensating equipment (i.e. any existing capacitor and reactor banks) switching and provide steady state VARs as needed to support the 400 kV bus voltage.

In order to get optimum control of MVAr, the control of MSCs and MSRs, as well as reactor banks connected on the 400 kV HV side, may be integrated along with STATCOM control to provide steady state 400 kV bus voltage control in a smooth manner. MSRs and MSCs are to be switched to relieve the STATCOM from high level operation, reduce its continuous losses and

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maximize its dynamic control potential. There should be a provision for the independent operation of MSC/MSR after delinking it with STATCOM controls when STATCOM is out of service due to any reason. Switching of MSC/MSR shall be based on value of external bus voltage.

The operating functions of the STATCOM Station shall include:

- Steady state voltage control of 400 kV bus,
- Balance steady state voltage at 400 kV bus,
- Dynamic over-voltage control,
- Transient and Dynamic stability control
- Damping of Power Oscillations

It is assumed that the arresters will limit any transient and switching surge over voltages and may also, by design, limit dynamic over voltages.

The requirement of reactive power compensation (as defined above) guaranteed by the TSP shall not be less than the levels specified considering following.

- The total cumulative Capacitive (+) and Inductive (-) MVAr rated Capacity of STATCOM Station as defined above comprising of STATCOM, MSCs (as applicable), MSRs (as applicable) coupling transformer, coupling reactor or any filter (if applicable) shall be rated at 1 p.u. voltage, 1 p.u. frequency and 50 °C (Celsius) ambient temperature at 400 kV Bus (Referred to as "Point of Common Coupling" or PCC).

- Capacity of one or more branches of MSC, MSR in STATCOM Station can be included in the STATCOM with equivalent capacity. Accordingly, ratings of STATCOM Unit/Branch equipment may be designed.

Example of equivalent acceptable solutions for each STATCOM Station is given below:

For +300 MVAr STATCOM:

Option 1: ±300 MVAr STATCOM, 2x125 MVAr Mechanically switched Shunt Reactor (MSR).

Option 2: +300/-425 MVAr STATCOM, 1x125MVAr Mechanically switched Shunt Reactor (MSR).

Option 3: +300/-550 MVAr STATCOM,

- The rated capability of STATCOM, MSC (as applicable) and MSR (as applicable) shall be at 400 kV (Referred to as "Point of Common Coupling" or PCC) and in the steady state frequency range of 48.5 Hz-50.5 Hz.

- The STATCOM Station including STATCOM Units, MSCs and MSRs shall be designed to operate continuously under the worst possible combination of steady state voltage

range of 360-440 kV and frequency range of 47.5 Hz – 52.5 Hz respectively and transient and temporary over voltages defined in Clause C.6.1-f).

- The AC voltage unbalance at fundamental frequency shall be assumed equivalent to a negative phase sequence component of 1.5% for equipment rating purposes.

- The reactive power compensation levels shall be determined by manufacturing tolerances of the components and measurements carried out using metering accuracy instrumentation at the 400 kV feed points to the STATCOM Station.

- The reactive power capability shall also be determined by calculations based on test values of appropriate quantities at the discretion of the owner.

- In calculations of capability and availability, the owner shall assume the most unfavourable combinations of control, manufacturing and measurement tolerances.

- In case more than one STATCOM Station are installed in a particular substation, each STATCOM Station shall be connected to 400 kV bus individually with complete separate downstream system. Each individual STATCOM station shall have complete independent yet coordinated control system to avoid simultaneous tripping of both STATCOM Stations. The system shall be design in such a way that single common contingency (other than loss of 400kV voltage, abnormal system events) will not cause tripping of both STATCOM Stations.

- Operation of STATCOM Station shall not excite any resonance condition in connected Power System.

- Control of STATCOM Station shall be designed to prevent hunting between MSRs, MSCs and STATCOM.

C.3.1 STATCOM building

The STATCOM station shall have an independent building including a separate control room different from the main control room building of the 765/400 kV Substation.

The STATCOM Building shall comprise of following facilities:

1. Control and Relay Panel room
2. ACDB and DCDB room
3. Battery room
4. Service Room cum workshop
5. Conference room
6. Valve hall
7. Cooling system room
8. Lobby
9. Corridor with minimum width of 1600 mm

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10. Portico
11. Common Toilet
12. Provision of shaft for electrical, sanitary, water supply facilities
13. Other facilities as per functional requirement of building
14. AHU Room

C.4 Ambient Condition

STATCOM Station should be designed to perform at 50° C ambient temperature.

C.5 Power System Characteristic

The following AC power system characteristics apply at the point of connection i.e. point of common coupling in this case (PCC). STATCOM station operation is required within the parameter value and duration given in following table:

S. No	Power System Characteristic	Value	unit
1.	Nominal ac system voltage, line-to-line	400	kV
2.	Maximum continuous ac system voltage, line-to line	420	kV
3.	Minimum continuous ac system voltage, line-to line	380	kV
4.	Maximum short-term ac system voltage, line-to line	448	kV
5.	Maximum duration of item 4	10	s
6.	Continuous negative-sequence voltag component (used for performance calculation)	1	%
7.	Continuous negative-sequence voltag component (used for rating calculation)	1.5	%
8.	Continuous zero-sequence voltage component	1	%
9.	Nominal ac system frequency	50	Hz
10.	Maximum continuous ac system frequency (fo rated output)	50.5	Hz
11.	Minimum continuous ac system frequency (fo rated output)	48.5	Hz
12.	Maximum short-term ac system frequency	52.5	Hz
13.	Minimum short-term ac system frequency	47.5	Hz
14.	Basic Insulation Level (BIL)	1550	kV peak
15.	Switching impulse level (SIL)	1050	kV peak
16.	Power Frequency Withstand voltage	630	kV
17.	Maximum three-phase fault current		

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S. No	Power System Characteristic	Value	unit
	a) for performance requirements b) for rating of STATCOM X/R (Positive/Negative Seq)* X/R (Zero Seq)* Clearing time - normal Clearing time – backup	a) 63 b) 63 20.70 38.40 0.10 0.75	kA kA for 1s s s
18.	Maximum three-phase fault current	63	kA
19.	Minimum three-phase fault current # -for performance requirements -for safe operation	 20 20	 kA kA
20.	Maximum single-phase fault current	63	kA
21.	Minimum single-phase fault current#	11	kA
22.	Harmonic impedance sectors for each harmonic number up to the 49th harmonic or system impedance data as R-X values with frequency steps not larger than 1 Hz (for performance and/or STATCOM system component rating)	Chapter 7.3 of CIGRE Publication 139	
23.	Background harmonic voltage (or current) spectrum (for STATCOM components rating) (Distortion up to 15th Harmonic	5th Harmonic 1.5% 7th Harmonic 1.0% Other Harmonics 0.5% (each)	
24.	Power System Phase Rotation	CCW	

The STATCOMs shall remain connected to the grid and shall be able to operate at rated reactive power capability when voltage at the interconnection point, on single phase or three phases dips up to the level depicted by the thick lines in the following curve (for specified time) and up to at least 0.3 p.u. in case of two phase faults:

VT : Actual Voltage; Vn: Nominal Voltage

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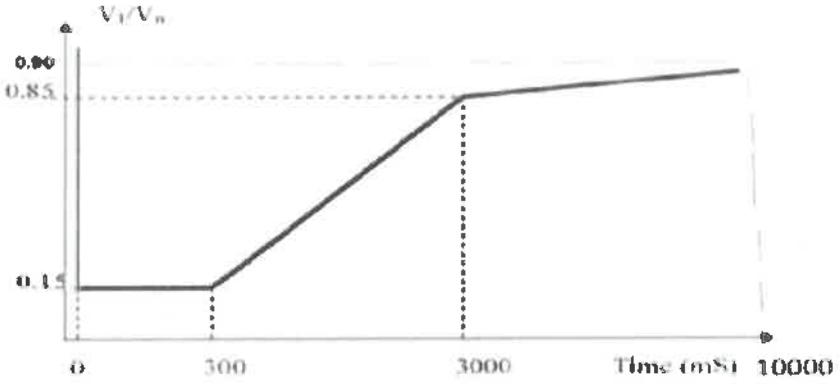

C.6 STATCOM Station Characteristics

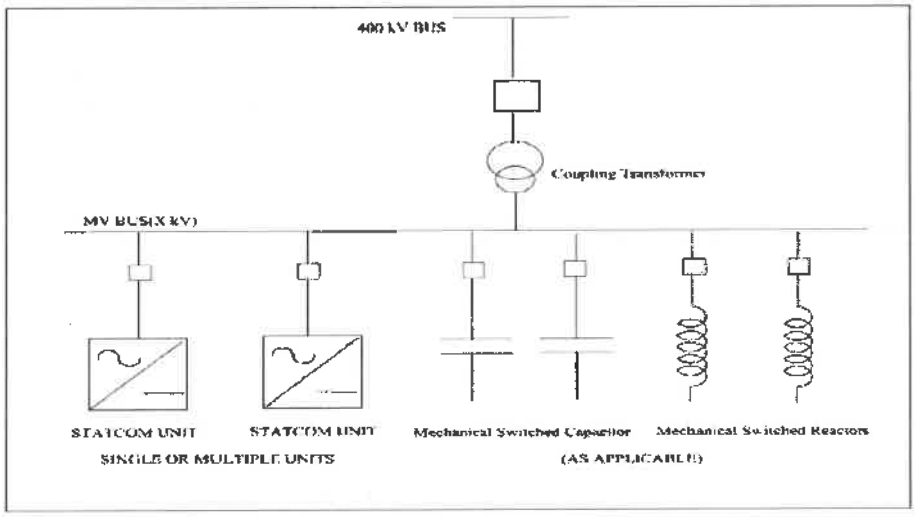

Figure-1: Conceptual Indicative Schematic diagram of STATCOM Station

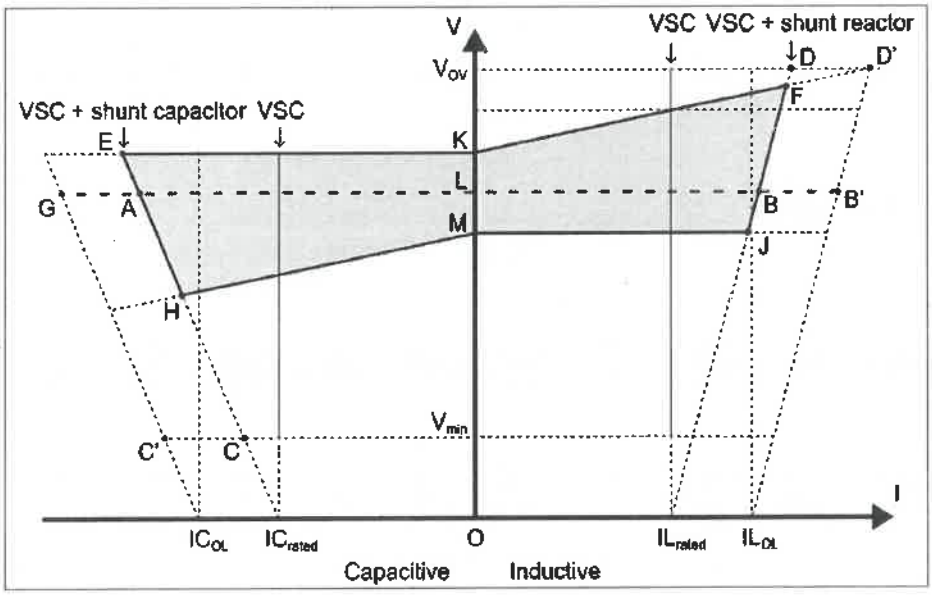

Figure-2: VI Curve of the VSC Portion

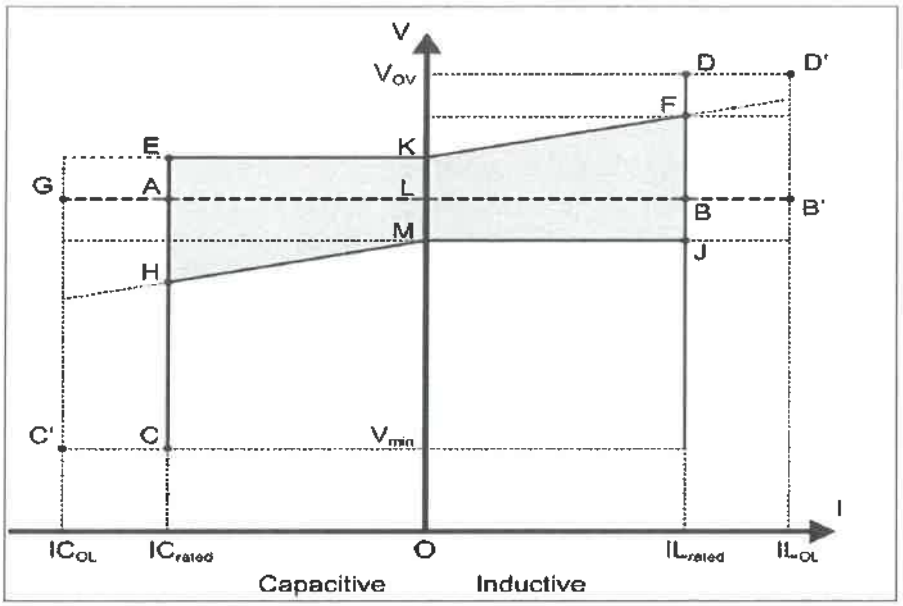

Figure-3: VI Curve of the STATCOM Station

C.6.1 STATCOM Station Ratings

The output of a STATCOM Station shall be adjusted continuously over the range illustrated in Figure-3.

The following items define the ratings of the STATCOM station equipment.

a) The STATCOM Station should regulate the 400 kV bus voltage to a reference voltage of 400 kV (1.0 per unit, Point L Figure-3), continuously adjustable between 0.95 per unit and 1.05 per unit.

b) The nominal capacitive and inductive reactive power output of the STATCOM should be as defined in the scope, at 1.0 p.u. AC bus voltage and nominal system frequency (f), and 50°C ambient temperature (Point A and point B of figure-2).

c) The slope of the STATCOM Station characteristic should be adjustable in steps of not greater than 0.5% between 1% and 8%, on a basis of cumulative MVA capacity of STATCOM Station (A+B in Figure-3).

d) The STATCOM Stations shall continue to inject reactive power during temporary under voltage down to 60 kV (0.15 p.u.) for the duration 0.3 sec (Point C) and STATCOM behavior for voltages above 0.15 p.u. shall be as specified under section C.5 above,; the STATCOM system may be tripped (or blocked) if the under voltage persists for time beyond limits specified under section C.5 above.

e) The STATCOM shall continue to absorb reactive power during HVRT Conditions in a controlled manner as per the following.

Nominal Voltage (pu)	Minimum time for remaining connected to the Grid

V > 1.50	Instantaneous trip
1.50 ≥ V > 1.30	100 milli seconds
1.30 ≥ V > 1.10	10 seconds
V ≤ 1.10	Continuous

STATCOM Station may be tripped if the respective temporary over voltages as mentioned above persists for more than its respective mentioned duration.

f) The STATCOM Station should be capable of repeating temporary operation as defined in any one of item (d) and (e) as above for at least 3 charging cycles in 60 mins.

g) The coupling transformer and all bus equipment, such as filter branches (if applicable), MSC and MSR branches etc. and the MV Bus should be rated to withstand the specified continuous and short-term operation, and to withstand or be protected against voltage and current stresses that exceed these conditions.

h) All equipment in the STATCOM Station should be capable of sustaining, without damage, any fault limited by the maximum design short circuit level of the system and the Coupling transformer impedance.

i) The TSP shall assume the negative sequence voltage of 1% at rated short circuit level and provide control to reduce this unbalance.

j) The injected harmonics by STATCOM Station under the full operating range measured at 400 kV Bus (PCC) in accordance with IEEE Standard,

k) The STATCOM controls should be designed to correct negative sequence voltage during steady state operation.

l) The switching module design should include an appropriate allowance for stray capacitance and component tolerances.

m) The STATCOM should be designed to prevent, or alternatively to withstand, false firing events, i.e., the firing of any valve at an incorrect time in the cycle or when not ordered.

C.6.2 Control Objectives

The control system shall control the STATCOM, MSCs, MSRs required under this specification, as well as all bus reactors on the 400 kV HV bus of the substation.

Operation logic for the breakers, disconnectors and earth-switches in the STATCOM Station shall also be incorporated in the control system. The control shall be programmable and shall have sufficient scope and flexibility (software programming margin of at least 20%) to permit re-programming according to future changes/addition in the power system. The operator interface must be integrated in a latest version of Windows environment.

C.6.2.1 STATCOM Station Functions and Applications

C.6.2.1.1 Voltage Control mode (Automatic and Manual)

Control of the positive sequence component of the fundamental frequency voltage in steady state at POI shall bewith slope in the range as specified at clause 6.1 c) above.

There shall be following provisions in STATCOM System to operate in Voltage Control Mode:

a) To adjust the reference voltage for changes by Grid Operator.

b) To adjust the value of reactive power droop in pu to provide a stable, coordinated and dynamic response.

c) To adjust the voltage dead band with a minimum magnitude of ±0.05pu

C.6.2.1.2 Fixed Reactive Power Mode

In this mode, the STATCOM system shall maintain a specified constant reactive power output at the POI under continuous / steady state operating region. The target reactive power level and mode (injection or absorption) shall be specified by the Grid operator. There shall be a provision to adjust the reactive power set point. The dynamic response of the STATCOM system to any changes in reactive power shall be positively damped with a damping ratio of 0.3 or better.

C.6.2.1.3 Steady State Condition

The STATCOM Station (STATCOM along with MSCs and MSRs) shall provide necessary reactive power support to the 400 kV bus (PCC) to compensate for voltage variation under steady state.

C.6.2.1.4 Dynamic Over-voltage Control Performance

The STATCOM shall be required to provide necessary reactive power support with fast and smooth variation so that over-voltages under dynamic conditions are controlled. STATCOM shall smooth out the step caused by the switching of MSCs and MSRs.

The operation of each STATCOM over its range of MVAr from full capacitive to full Inductive capacity and vice-versa shall be on the basis of smooth variation.

C.6.2.1.5 Transient and Dynamic Stability Performances

The STATCOM Station shall provide necessary reactive power so that the transient and dynamic stability of the Owner's system is enhanced.

C.6.2.1.6 Damping of Power Oscillations

The STATCOM shall provide necessary damping to power oscillations by modulating its output in its entire range based on the measured rate of change of power/frequency at the 400 kV bus. The damping controller would track local area oscillations as well as wide area oscillations and control would include several loops each focused on different frequencies.
TSP shall ensure the damping of oscillation during the entire license period including the pre-commissioning period as per relevant standards. (e.g. IEEE 1052).

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C.6.2.1.7 Facility for compensation of phase imbalance

Provide negative phase sequence voltage control to minimize the presence of negative sequence content of the 400 kV bus voltage.

C.6.2.1.8 Start up and Initial Switching

The operation of STATCOM Station during start-up/initial switching on should not create significant energizing transients causing voltage drop, voltage distortion and swinging of transmission voltage angle at the PCC bus by more than +/-5%. TSP shall have to ensure this analytically during the design phase and also in the field after the commissioning of the facility. TSP shall prepare the design documentation and the same shall be preserved by TSP and to be submitted to CEA/CTU/GRID-INDIA, as per their requirement.

C.6.2.1.9 Gain Supervision and Control

To control the regulator gain in order to prevent oscillations and excessive overshoot in the STATCOM response, a gain supervision function shall be implemented. This shall be an essential function for the supervision of stability of closed-loop voltage control. The function of this controller is that when the supervision of the gain in the voltage regulator detects oscillations in the voltage controller output, the gain shall gradually be reduced until stability is reached. Normally it is a changed condition in the transmission system contribution to the closed loop gain that results in instability. The reduction in the voltage regulator gain shall only balance the external change. The control should be adaptive in order to maximize its effectiveness. Gain reductions should be indicated and the reduction of the gain shall be able to be reset to nominal value by means of commands from the operator interface or automatically. A relative gain factor shall also be able to be changed from a gain optimizer.

C.6.2.1.10 Coordinated reactive power control of external devices

To optimize the use of dynamic VARs versus steady state VARs, control of externally connected shunt capacitor or reactor banks shall be implemented. Such banks will be connected locally to a HV bus or/and at MV bus. For simultaneous control with the supplementary VSC current controller, coordination for the two functions shall be provided. External devices like mechanically switched capacitors (MSC)/mechanically switched reactors (MSR) can be switched ON or OFF to position the steady state operating point of the VSC so as to extend its dynamic range. There should be a provision for independent operation of MSC/MSR after delinking it with STATCOM controls when STATCOM is out of service due to any reason. The threshold values for switching the MSC/MSR on/off shall be configurable in all modes of operation.

C.6.2.1.11 Supplementary VSC current controller

To optimize the use of dynamic VARs versus steady state VARs, a control function that slowly reduces or offsets the STATCOM point of operation shall be implemented. By deliberately adjusting the voltage reference setting within a narrow window the STATCOM system output is pushed towards either a specific point or towards a window to preserve dynamic range. This slow operating function is meant to provide for slower controllers, such as externally connected shunt banks to operate and meet the slower long term voltage variations caused

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by daily or weekly load variations. Rapid changes in the system voltage that call for dynamic compensation will have priority over this type of controller.

C.6.2.1.12 Gain optimization

To provide operation at optimal regulator gain, a fully automatic optimizing function shall be implemented. This function operates by inducing a small change in the STATCOM output. The gain is adjusted based on the network response signal.

C.6.2.1.13 Control of Direct Current

During STATCOM operations, any flow of direct current to the transformer's MV side must be less than 25% of the transformer magnetizing current. DC current flow in the transformer should be minimized by an independent control function that minimizes DC current. For presence of up to 0.2% second harmonic in 400 kV system, the STATCOM control should minimize DC current flow in the transformer.

C.6.2.2 Under Voltage Strategy

It is essential that the STATCOM Station operates in a robust manner when transmission system under voltages appears. In case of single phase or three phase faults, the STATCOM units must operate unrestricted, producing its rated capacitive current for transmission system voltage down to 0.15 p.u. In case of two phase fault, STATCOM shall be capable to produce rated capacitive current atleast down to 0.3 p.u., however, it shall be designed to operate upto 0.15 p.u. The STATCOM must be designed to operate at transmission system under voltage, even considering that severe voltage unbalances can appear. The STATCOM must not be restricted by short term negative sequence voltages up to 1.5%, appearing in conjunction with under voltages.

Transmission system under voltages below 0.15 p.u. will appear in conjunction with transmission system faults. The STATCOM must ride through during faults and post fault under voltages. The minimum trip delay for the STATCOM Station, upon complete loss of the transmission system voltage shall not be less than 5 seconds. If station AC auxiliary power distribution is affected, critical loads must be fed from DC station batteries, uninterrupted power supply (UPS) without tripping the STATCOM Station. Adequate capacity must be kept in DC station batteries, UPS to feed critical loads for the smooth operation of the STATCOM Station facility. There must be redundant station battery system with each station battery system capable of delivering 100% load.

At under voltage conditions for the transmission system voltage, special control strategies are activated which override the normal control modes presented above. Normally if the voltage is low, the output from the STATCOM will be capacitive. If the voltage in all three phases goes below a level, but not greater than 0.15 p.u., a special under voltage strategy may be activated that controls the STATCOM output to 0 MVAr. As soon as the voltage goes higher than 0.15 p.u., the under voltage strategy is deactivated and the normal control will be in operation (for the specified duration).

The STATCOM Station must not be tripped or shut down automatically due to under voltages appearing for specified duration as specified under section C.5 above. STATCOM Station must continue to operate when AC system Voltage on any or all phases dips down to 0.15 p.u. voltage as per the characteristic given at section C.5.

C.6.2.3 Over Voltage Strategy

C.6.2.3.1 The TSP shall carry out dynamic stability study upfront in order to assess the dynamic overvoltage requirements. These studies shall include conditions with maximum and minimum short circuit system MVA conditions, single phase and three phase faults as well as stuck breaker, outage of the nearby generator and also with the outage of parts of the STATCOM Station. It is important that the STATCOM Station rides through temporary over voltages and not trip when it is needed the most.

C.6.2.3.2 The system should be able to withstand any 3 phase, 5 cycle (100 ms) and single phase 10 cycles (200 ms) fault with consequent loss of a 400 kV double circuit line and loss of a 500 MW generator. The fault duration mentioned above corresponds to time assumed for the persistence of fault. For other system parameters refer clause 5 above (Power System Characteristics). In addition to above requirement, system contingency cases as provided in Annexure-I need to be considered and satisfied.

C.6.2.3.3 The 400 kV system and equipment to which the STATCOM Station is connected is designed to withstand switching surge overvoltage up to 2.5 p.u. and power frequency over voltages up to 1.5 p.u. with initial value of the temporary overvoltage up to 2.0 p.u. for 1-2 cycles. Based on arrestor coordination and under the worst case scenario the 400 kV system phase to ground peak over voltages may be expected as follows

i) 650 kVp for 3 peaks
ii) 575 kVp up to 5 cycles
iii) 530 kVp up to 1 second
iv) 475 kVp up to 10 seconds

a) The STATCOM Station shall be designed to withstand these sequential over voltages.

b) If the over voltages greater than 1.1 p.u. are exceeded in magnitude and duration due to any system contingencies, suitable control action shall be taken by STATCOM Station to bear this kind of contingency.

c) The TSP shall evolve the insulation co-ordination of the components of the STATCOM Station after studies have been conducted to determine the over- voltage profile with the STATCOM connected to the system.

d) The TSP shall ensure that STATCOM Station will not excite ferro-resonance and sub-synchronous oscillation in the AC system. The study report in this regard shall be preserved and to be submitted to CEA/CTU/GRID-INDIA, if required.

e) It may also be noted that the tripping action for 400 kV lines is initiated if the overvoltage exceeds 1.1 p.u. for 10 seconds. The tripping of 400 kV lines is initiated if 1.5 p.u. voltage persists for more than 100 milli seconds. The over voltage strategy shall be coordinated with these settings such that the STATCOM Station rides through up to these levels.

C.6.2.4 STATCOM Station Over load / Over Current

The overvoltage cycles mentioned in clause 6.2.3.3 above create a corresponding current overload in the STATCOM Station components; the STATCOM Station and its components shall be designed to withstand these.

In addition to the above the STATCOM Station and its components shall be designed to withstand overloading caused due to the following eventualities.

i) Short circuits and ground faults in the 400 kV system especially those occurring near the STATCOM Station and medium voltage bus of the STATCOM Station.

ii) Transient overvoltage due to switching operations and atmospheric effects.

iii) Temporary over voltages.

iv) Short circuits in the transformer secondary circuit such as:
- Bushing terminal fault
- Flashover across a reactor, Bus Bar and other connected components/switchgear etc.

v) Protection system faults.

If the rated overvoltage is exceeded as a result of prolonged stressing or for other reasons, the protection specified elsewhere in the specification shall come into effect to prevent damage.

C.6.2.5 Dynamic Performance Controls of STATCOM Station

The TSP must describe in detail, the dynamic reactive power controls for enhancing stability margin and also damp oscillations of any critical frequencies. The dead band for continuous damping control must be very small so that there are no discernible sustained oscillations.

C.6.2.6 Protective Control Functions

TSP shall provide all necessary protections including Main and Back-up protections for all protective zones and equipment like transformers, STATCOM Units, MSCs (if applicable), MSRs (if applicable), MV Bus Bar etc. TSP shall provide any protective control functions to meet the performance requirement of STATCOM under the scope of the TSP.

a) Overvoltage Protection

TSP shall provide adequate overvoltage protection as a result of any normal operation, mal-operation or system event.

b) Over current Protection

TSP shall provide adequate over-current protection for the STATCOM Station as a result of any abnormal operation, mal-operation or system event.

c) Gate level control Supervision

TSP shall provide adequate Sub module Gate level control supervision.

C.6.2.7 STATCOM Station Response

STATCOM station response shall be such that the change in measured system voltage to small disturbance should reach 90% of the desired total change within 30 ms of initiating a 5% step change of voltage reference. The maximum overshoot should not exceed 120% of the total change and the settling time should not exceed 100 ms, after which the voltage should be within ±5% of the final value. This response characteristic within these limits must be respected when the system's three-phase fault MVA is between the minimum and maximum value defined in clause-5. The response of the system voltage using the actual controller should be validated on a real time simulator during the Factory Acceptance Test (FAT) at the manufacturer's premises. For the purpose of STATCOM Station, response time measurement and signal conversion of the voltage, the error should not exceed 0.3%. The voltage response acquisition circuit should have a response time of no longer than 10 ms. However, time longer than 10 ms can be allowed provided the requirement of STATCOM response time is met.

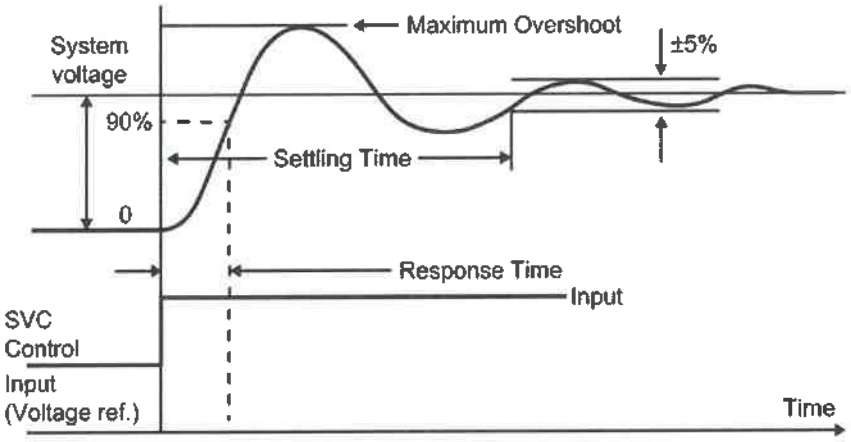

Figure-4 Response and Settling time

C.6.3 Harmonic performance and AC harmonic filter design

It is likely that with multi-level VSC based technology, no filters or only a small high-pass filter will be needed. The STATCOM shall be operable without AC filters. The STATCOM Station should be designed to eliminate the effects of any harmonic resonance between its MSRs, MSCs banks, filter branches, and the AC system. To limit the harmonic distortion imposed on the 400 kV transmission system, the additional contribution of harmonic distortion from the STATCOM Station to 400 kV system (PCC) should not exceed 1% for the total and 0.5% for any specific harmonic.

C.6.3.1 Filter performance

The distortion levels as specified should be met for the following:

a) The continuous range of all system and environmental conditions.

b) Variation in total filter capacitance due to manufacturing tolerance, ambient temperature, aging, and changes in capacitance up to alarm level.

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c) Variation in tolerance for STATCOM parameters, such as transformer winding unbalances, valve firing variations, MSC and MSR unequal reactor and capacitor reactance between phases.

d) System frequency in the range of 48.5 Hz to 50.5 Hz. Calculation should take into account all possible combinations of STATCOMs, MSCs and MSRs.

C.6.3.2 Filter component rating

The harmonic filter components (and other STATCOM components) should be rated to carry continuously the harmonic currents caused by the background harmonic distortion of the system and the harmonic currents produced by the STATCOM itself. Unless otherwise specified, harmonic currents from the system and the STATCOM of the same order should be added arithmetically. All filter harmonic currents of different order should be added quadratically (root sum of squares).

The rated voltage of capacitors should be derived from the largest arithmetic sum of the power-frequency and individual harmonic voltages obtained from stress calculations in continuous operating conditions (Note: Maximum fundamental voltage and maximum harmonic contributions may not exist at the same time for STATCOM configurations including MSRs or MSCs).

For filter capacitor voltage rating, the loss of capacitor unit or elements should be considered up to the trip level.

The rated voltage of so-called "low voltage" capacitors (e.g. in double or triple tuned filters) should be chosen such as to also withstand imposed transient stresses from faults, energization, or other switching events.

C.6.3.3 Harmonic at PCC

The STATCOM Station's contribution to the harmonic distortion levels at the STATCOM Station connection point (PCC) to the transmission system shall not exceed the limits defined in IEEE-2800 standard.

C.6.3.4 Harmonic calculation:

Chapter 7.3 of CIGRE Publication 139 together with information in PSSE network files given shall be used for the Network harmonic impedance.

C.6.4 MV Switchyard

- Medium Voltage (MV) delta bus shall be grounded through a Grounding Transformer (i.e. zig-zag winding Transformer) along with a suitable resistor in the neutral.

- MV Switchyard of different STATCOM Station branches shall be fenced with a fence height of 3 meter. To minimize the probability of electrical fault suitable arrangement i.e. electrified fence shall be done to prevent the encroachment of unwanted animals or other to minimize the probability of electrical faults (Ph-E, Ph-Ph). Further bus bar arrangements shall be made in a way to minimize the probability of electrical faults.

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- Secondary side of the Coupling Transformer shall be provided with suitable surge capacitors to mitigate transfer surges.

- For MV bus bar, an Aluminum conductor (Tube, Rectangular Hollow Section or C Section) may be used, however, a suitable bus bar end cover/cap shall be provided to avoid any animal/bird entering the hollow space.

C.6.5 Broadband Interference

C.6.5.1 Radio Interference

The TSP shall take necessary precautions in the form of shielding of valve hall and building or Containers to meet its own requirement together with any requirements that may be specified in Section-Project. Further, the following requirements shall also be met:

a) With the STATCOM Station operating at any load upto rated value and within the design range of firing angle, the radio interference level from electromagnetic or electrostatic inductions generated by the STATCOM station shall not exceed 100 micro-volts/m, under fair weather conditions, at 500 m away from STATCOM fence or boundary of the substation whichever is higher. The Radio Interference Level (RIL) criteria shall be achieved at all frequencies within the range of 150 kHz to 300 MHz and with the STATCOM operation at any level up to and including rated value. The design shall provide correcting measures, in case the specified design not being realized in the final installation. In case of any third-party complaints about the radio interference, suitable measures shall be implemented by the TSP.

b) Measurements of actual RI at STATCOM Station shall be made by the TSP, at points along the above defined contour and at other critical points.

c) RIV (Radio Interference voltage) measured at a phase to ground voltage (266 kV rms) in accordance to NEMA-107 shall not be more than 500 micro-volts for 400 kV system. For other system voltages, IEC/NEMA in the order of preference shall be applicable.

C.6.5.2 Interference with Power Line carrier and open wire carrier system

The TSP shall take the necessary precautions in the form of noise suppression techniques and filtering devices to prevent harmful interferences from STATCOM Station to the power line carrier communication (PLCC) system operating on connected AC transmission network.

The frequency spectra to be protected are:

System	Frequency spectrum
Power Line Carrier	30 kHz to 500 kHz
Open Wire Carrier	5 kHz to 30 kHz

C.6.6 Audible Noise

The TSP shall limit the audible noise in various areas of the STATCOM Station buildings and containers to the following values.

Valve hall (Inside)	90 dBA
Mechanical equipment areas indoor (measured at 2 meter distance)	75 dBA
Mechanical equipment outdoor (Measured at 15 m distance)	75 dBA
Control Room Building*	60 dBA
At the limits of the STATCOM STATION perimeter fence	80 dBA

**This is the background noise from the ventilation system in adjacent rooms, control cubicles etc. Printers, recorders may be switched off during the measurement.*

C.6.7 Loss Requirements

C.6.7.1 The TSP must guarantee the total losses of STATCOM Station, be less than 1% of the reactive power output individually at its inductive limit (STATCOM+MSRs) and capacitive limit (STATCOM+MSCs) for the cumulative highest reactive power output of STATCOM Station at PCC with the worse combination of manufacturing tolerances for the Option-1 to 2 as provided in clause C.3. In case of Option 3 as provided in clause C.3 i.e. +300/-550 MVAr STATCOM without MSC and MSR, the TSP must guarantee the total losses of STATCOM Station will be less than 1.5% of the reactive power output individually at its inductive limit and capacitive limit for the cumulative highest reactive power output of STATCOM Station at PCC with the worse combination of manufacturing tolerances. For the purpose of total loss measurements, it should be assumed that the ambient temperature is 20 °C, the PCC voltage is 1 per unit, and the slope setting is 1%. The STATCOM system may not operate under these conditions, but they provide a common base.

C.6.7.2 The total losses shall include all components, as well as different parts or subsystems of the complete STATCOM Station such as coupling transformer, All VSC systems and components, MSC and MSR, Control and protection systems, including ancillary devices such as HMI, fault recorders, and SCADA, Auxiliary Power supply systems, cooling systems, Building ancillary services such as lighting, air conditioning, heating, and ventilation. It may be noted that for the redundant VSC valve levels and dual/redundant control and protection systems, the losses of redundant VSC valve levels and dual control and protection systems shall be considered during loss measurement.

C.6.7.3 For the dual or redundant systems design of STATCOM Station, such as dual pumps or redundant fans, dual systems losses are to be excluded, if the dual system is not in service during the normal operation of the STATCOM Station. However, dual systems should be included if they are required to be in service under the defined operating conditions. The same methodology shall be applied for HVAC (heating ventilation and air conditioning systems).

C.6.7.4 The TSP is required to prepare documentation for the detailed calculation of total losses based on measurement during Factory Acceptance Tests of major equipment and systems mentioned above as per relevant IS/IEC/IEEE standards and the same shall be preserved and to be submitted to CEA/CTU/GRID-INDIA, as per their requirement. Further for equipment/systems, whose loss measurement cannot be done during the Factory Acceptance Test, the same can be measured at the site, and a combination of calculation and measurement shall be used to derive the total losses as specified above. During Loss measurement, all fans, and pumps; valve

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room and control room air-conditioning system shall be switched on. However, redundant fans, pumps and air-conditioners shall be kept off during loss measurement.

C.6.7.5 During the factory tests the losses for the following equipment shall be measured/ assessed as detailed below:

Coupling transformer:

Losses shall be measured at factory/lab at the maximum rating, at power frequency as per relevant IEC/IS under below mentioned conditions:

i. No load loss (Iron loss) at rated voltage and fundamental frequency.

ii. Load loss (copper loss) at rating corresponding to maximum continuous current and at 75 °C.

iii. Transformer cooling equipment's loss (Auxiliary loss) at rated voltage and fundamental frequency.

Reactors:

The losses shall be measured at the factory/lab at the maximum rating at power frequency as per relevant IEC/IS.

VSC Valves:

Converter losses comprise the losses in power electronic switches [insulated gate bipolar transistor (IGBT) or equivalent], made up of conduction and switching losses, and the losses in DC capacitors, resistors, and inductors used within the converter system. Refer IEEE-1052 for calculating VSC losses.

Capacitor:

The capacitor losses shall be measured at the manufacturer's works at power frequency as well as calculated to obtain the losses in the complete bank on the basis of factory measurement.

Auxiliary System:

Auxiliary power losses shall be calculated from the kW and efficiency of all motors (name plate rating) of the cooling system, air conditioning, ventilation etc. The higher of the total losses for the entire auxiliary systems occurring at full capacitive capacity MVAr or full Inductive MVAr as the case may be shall be considered for arriving at the total losses.

Harmonic Filters, if any:

The losses shall be calculated at the maximum STATCOM Station loading at 400 kV and 50 Hz.

The calculations shall be on the basis of the tested results of the components.

C.6.8 Selection of Insulation Levels

C.6.8.1 Arresters:

Protective levels of arresters connected to the 400 kV AC Bus Bars of the STATCOM Station shall be coordinated with the insulation and surge arrester Characteristics of the 400 kV AC systems to which the STATCOM Station is to be connected. The specification and characteristics of the surge arresters installed in 400 kV AC system is given in the Substation specifications. The front of wave (FWWL), lightning impulse (LIWL) and switching impulse withstand levels (SIWL) shall be determined by the following margins:

a) A SIWL at least 1.15 times the switching impulse protection level.

b) A LIWL which is an IEC standard level corresponding to the SIWL and shall be at least 1.25 times the lightning impulse protection level.

c) A FWWL which is at least 1.25 times the front of wave protection level.

In addition to the above minimum basic requirement, the various insulation level of 400 kV equipment shall be as below. The STATCOM Station equipment, coupling transformers etc. shall be co-ordinated accordingly.

Description	SIWL	LIWL
All equipment including Transformer Bushing and winding	1050 kVp	1425 kVp

C.6.8.2 Valves

The requirement of insulation levels of the valves shall be as per the design requirement.

C.6.8.3 Air clearances

The air clearances shall be determined by the TSP based on the required withstand levels for all waveforms in order to limit the probability of flashover within the STATCOM Station to a target value of one flashover in 15 years.

C.6.8.4 Switchyard

The air clearances for switchyard equipment shall be equal to or greater than the minimum values as specified in IEC-60071. Altitude correction factor (if any) shall also be considered as per IEC.

C.6.8.5 Leakage distances

The Creepage/leakage distance across insulation shall be determined by the TSP and shall be adequate to ensure that under conditions of heavy pollution, the probability of a flashover of an insulator does not exceed one in 15 years. However, the leakage distance for all AC insulators for outdoor installation shall not be less than 25 mm/kV of the maximum operating phase to earth rms voltage at the insulator. The leakage distance of equipment connected to 400 kV systems shall not be less than 10500 mm.

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Specific creepage distance for outdoor bushings, insulator strings and long rod insulators shall be a minimum 31 mm/kV.

C.6.9 STATCOM Station availability and reliability

The following definitions apply:

C.6.9.1 Outage terms:

a) Outage

The stage in which equipment is unavailable for normal operation due to an event directly related to the equipment which results in a reduction in STATCOM Station capacity.

b) Scheduled Outage

An outage that can be scheduled at least one week in advance.

c) Forced outage

The stage in which the equipment is unavailable for normal operation but is not in the scheduled outage stage and which results in a reduction in STATCOM Station capacity i.e. an outage which is not scheduled outage.

C.6.9.2 Capacity terms

Maximum Continuous Capacity (Pm)

The maximum STATCOM Station capacity (MVAr) for which continuous operation under normal conditions is possible.

C.6.9.3 Outage duration terms

Actual outage duration (AOD)
The time elapsed in hours between the start and end of an outage.

C.6.9.4 Time Categories

a) The number of hours in the reporting period in a full year, the period year is 8760 hours. If the equipment is commissioned, part way through a year, the period hours will be proportionately less than 8760 hours.

b) Total Outage hour (TOH)

The sum of all outage duration within the reporting period. TOH = AOD

C.6.9.5 Availability and Reliability Terms

Unavailability:

Unavailability is the duration for which the STATCOM Station is not available with a specified rating due to forced outages per year. If part of the station is unavailable, then the unavailability duration shall be counted proportionally. However, if STATCOM is out then its

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duration shall count as a fully unavailable STATCOM Station. However, If the STATCOM unit is out then the STATCOM Station unavailability shall be counted proportionally to STATCOM capacity. STATCOM Station Control system outage shall count as full STATCOM Station unavailability.

'OF' is the Outage Frequency which will be the number of forced outages per year.

The period basis for availability and reliability calculations shall be 12 months. The TSP shall ensure that the design will meet the specified guaranteed and design target value of availability and reliability.

Outage times for repair, maintenance and replacement of components shall be based on the premise that all items in the list of recommended spare parts are on hand, and that all maintenance schedules of recommended maintenance are adhered to. Reliability calculations shall be made and shall be presented as the expected frequency of unscheduled loss of STATCOM Station capacity. For simultaneous occurrence of events, for either of which a loss of capacity would result, the longer repair time shall be counted.

The facilities shall be assumed to be utilized 100% of the time at 100% load, regardless of the actual reactive power generated/absorbed by the STATCOM Station. Hence the availability and reliability assessment will be based on the capability of STATCOM Station to generate/absorb the rated reactive power regardless of whether, it is in service or not.

C.6.9.6 Availability Requirement

The calculated availability of the system considered on an annual basis shall be equal to or exceed the following target values.

Minimum availability requirement of each complete STATCOM Station

- Guaranteed for STATCOM Station - 98%

The outages of STATCOM Station capacity caused by the failure of equipment outside the scope of the TSP shall not be considered for the calculation of availability and reliability guarantee. However, such outages shall be restricted to

1) Complete loss to 400 kV supply (at PCC)
2) Human Error.

Circumstances causing curtailment of STATCOM Station capacity that will be included in reliability and availability assessment and which can lead to forced outages shall include but not be limited to the following:

a) Failure of equipment

b) Mal-operation of control and protection system

c) Failure to start

d) Reduction in capacity.

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C.6.9.7 **Reliability Requirement**

a) Reliability

In the assessment of reliability, the following events shall also be considered to constitute a STATCOM Station outage:

i) A STATCOM Station shut down.

ii) A reduction of STATCOM Station capacity due to an outage of any component of STATCOM Station

The calculated reliability of the complete STATCOM Station shall be equal to or exceed the following design target values.

The average outage frequency per year for each STATCOM Station shall not exceed the following values:

	Design target for STATCOM Station	Max acceptable Guaranteed value for STATCOM Station
Total Number of Forced Outages	3 x Nos. of STATCOM Station	5 x Nos. of STATCOM Station

C.6.9.8 GUARANTEED FAILURE RATE OF Sub-modules. (Including all components and electronic). The maximum annual guaranteed failure rate of sub module (including all components and electronic) shall not exceed 1.0% per STATCOM. The failure rate shall not include failures directly attributable to operation and maintenance errors.

C.6.9.9 **GUARANTEED VALUE OF FAILURE RATE OF AC POWER CAPACITOR**

The maximum guaranteed annual capacitor failure rate shall not exceed 0.15% except for first unit failure. The capacitor shall be considered as failed if its Capacitance value varies more than ±5% of the (actually measured) name plate value. Leakage of oil from the capacitor and the deformation of the capacitor unit shall be considered as a failure even if the capacitance value is within the tolerance limits.

C.7 **Design Principles**

The objective for the design of the STATCOM Station shall be to achieve a high level of availability and reliability as specified. Special attention shall be given to designing the STATCOM Station to avoid forced outages. The TSP shall conduct thorough design reviews to ensure the minimum risk of such outages. The TSP shall give careful attention to related factors affecting STATCOM Station performance such as subsystem and system testing, protective relays co-ordination and proper setting of relays.

Except where greater reliability requirements are specified in these specifications, the design basis for STATCOM Station shall be such that no single contingency downstream from the medium voltage bus shall cause a total outage of the STATCOM Station. The following general criteria shall be followed for the design of the control system:

a) Use of components similar to those whose reliability has already been proved in use.

b) Use of good design practices, surge protection, filtering, and interference buffers to assure immunity to sensitive components and circuits against damage and interference by induced voltages and currents in the external cabling and cubicle wiring.

c) Use of fail-safe and self-checking design features.

d) Use of component and equipment redundancy, by means of either duplication or triplication with automatic transfer facilities wherever necessary to meet the requirement of these specifications.

e) Design which in the event of component failures, provides for transfer to a less complex operating mode.

f) Provision of alarm, fault diagnosis and indication

C.8 STATCOM Station Main Components

C.8.1 STATCOM Unit

The main electrical data of the STATCOM Units are the following:

o Rated voltage	20 kV Minimum
o Rated frequency	50 Hz
o Redundancy (Sub Module)	2 Nos. or 5% whichever is higher
o Rated Power of each STATCOM unit/Branch	±50 MVAr Minimum
o Valve Cooling	Deionized/Demineralized water

In general, the STATCOM units shall equally share the load however under contingency conditions it should be possible to run the units with unequal load. Charging of the DC capacitors of Sub module during the initial start-up shall be achieved by means of Resistors and bypass breaker arrangement. The charging resistor for DC capacitor of the STATCOM Sub module should be designed for three charges per hour followed by the appropriate cooling time. Power for the gate level control shall be derived internally from Sub module. The offered STATCOM Units with their Control system shall be suitably located inside the STATCOM Station Building.

C.8.1.1 STATCOM Valve

The valve shall be designed to meet the performance requirements described in this specification and as described below.

In order to ensure a modern low loss and reliable solution, the STATCOM valve assembly shall use the multi-module (including redundant sub-modules) approach.

The valves shall be designed to ensure satisfactory operation according to the overall performance requirements and include all necessary auxiliary equipment required for smooth

and reliable operation. The valves shall be indoor air-insulated and cooled by de-mineralized water. The valves shall be of modular design and have removable Sub-Module for ease of maintenance. The valves shall be mounted to allow easy access for visual inspection, routine maintenance and replacement, and facilities shall be provided to enable easy access.

C.8.1.2 Semiconductor Switches

The electronic switches should be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station. The valve shall be designed with individual semiconductor switches applied in a conservative manner with regard to their basic design parameters. The semiconductor switch shall meet the requirements of IEC 60747 except where otherwise specified herein.

The semiconductor switches shall be designed to withstand all stresses expected under steady state, transient and temporary overvoltage conditions. Basic semiconductor devices shall be of the Press Pack type, or packaged to provide short circuit means in case of device failure such that the STATCOM can continue to operate without interruption. The adjacent sub-module should be protected against the possible explosion of the semiconductor switch.

Under the restriction of redundancy (minimum two or 5% whichever is higher) i.e. the failure of any semiconductor switch or sub module or monitoring device etc shall not prevent continued system operation. In the event of any of the above failures, the STATCOM shall annunciate and identify the specific location of the failed device and continue operation until such time as repairs can be scheduled. During such time till the next shutdown can be availed, the STATCOM must continue to operate without downgrading STATCOM capability.

The switching device's design should include an appropriate allowance for unequal voltage distribution across individual devices in the valve due to the stray capacitor and component tolerances.

The switching device's design should include an appropriate allowance for unequal voltage distribution across individual devices in the valve due to the stray capacitor and component tolerances.

Each switching device should be able to operate within component ratings, generally with at least two failed sub-module or levels. The number of possible failed sub-modules or levels as specified shall be consistent with the availability requirements of the STATCOM system.

C.8.1.3 Sub module for Multi-Module Topology

The key element of the multi-module topology shall be the sub-module. By increasing the number of these sub-modules, it is possible to obtain high voltage with extremely low harmonic distortion and very low dv/dt using a low switching frequency that reduces power losses. Sub-module shall have the following characteristics:

VSC sub-modules should be protected against over voltages with appropriate strategies. A description of the failure mode of the switching device and the strategies used for failure should be provided.

In each fiber optic cable (having multiple fiber cores) used for control/communication purposes of sub-module at least two fiber cores shall remain available as spare for future use.

C.8.1.4 The STATCOM sub-module has DC capacitors that require a charge to allow full functionality and performance. At the startup of the STATCOM Station, the capacitors are discharged. During the energization sequence of the STATCOM, Capacitors are charged from the main power grid via resistor operated in series to the main connection circuits. Once the desired charging voltages are reached, the charging resistor circuit is bypassed using a bypass switch/breaker.

The Type and Rating of the charging resistor and associated bypass switch shall be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station and shall conform to the relevant Standard.

C.8.1.5 **STATCOM Valve Cooling system**

A closed-loop recirculating system shall be provided with full heat rejection capacity with redundancy for pumps, heat exchangers, and fans, appropriate to the STATCOM Station availability requirements. The cooling system should be able to maintain full capacity at maximum ambient temperature and maximum STATCOM reactive power output. The cooling system should be able to operate at the lowest ambient temperature and zero output specified. The Valve cooling system shall have black start capability and necessary Uninterruptible Power Supply (UPS)/ Uninterruptible Motor Drives (UMD) shall be provided separately for each STATCOM Unit.

The valve cooling system shall be designed to meet the performance requirements described in this specification and as described below.

a) Each STATCOM Unit shall have its own de-ionized water valve cooling system with redundant pumps.

b) For cooling the STATCOM valves, a deionized re-circulating (closed loop) water system shall be used.

c) Water to air heat exchanger shall be used for cooling of this de-ionized water. Water to water heat exchanger shall not be employed.

d) System shall be designed such that no shut down of STATCOM be resorted to for making up the deionized water in the system. The make-up water should comply with the recommended pH and purity.

e) Cooling water shall have a constant flow rate irrespective of loading. The flow rate shall be decided on the basis of extreme operating conditions.

f) The control system for the cooling system shall be redundant type including the provision of redundant control supply and main power supply. However, in place of the redundant control system for the cooling system, suitable alternate mode is also acceptable meeting the requirement of fulfilling cooling system operation even if failure of cooling control system.

g) 2x100% pumps with one as standby shall be provided for the primary. In case a pump failure occur, the second pump shall automatically switch in without shutting down

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the STATCOM. An alarm shall be displayed at the control panel for the failure of the first pump and standby pump in operation.

h) Each cooling system shall be provided with an independent/dedicated UMD supply however common battery for both UMD power supply may be accepted. An UMD system will provide an extended capability of the STATCOM Station to deliver reactive power without any interruption, adding a buffer against the system faults or during events such as delayed voltage recovery or Transient over Voltage (TOV).

i) The secondary cooling system shall be a redundant type such that it shall be possible to take out 10% (minimum one number) of the cooler module (fan unit) of secondary cooling system without affecting the rated performance of STATCOM).

j) Normally no make-up water shall be required however in case of expansion vessel level going low; the same shall be replenished automatically by means the of make-up water tank and make up water pump to be supplied with the system.

k) TSP shall provide a water treatment plant of sufficient capacity. The purification (treatment) system shall be designed to maintain conductivity below 1 micro Siemens. A resistivity cell in the outgoing water from the deionizer should detect the depletion of ionized material. Filters and deionizers shall be designed to allow replacement during operation. Normal replacement shall not be required more than once every year.

l) Filters and deionizer/deoxidizer material shall be designed to allow replacement within minutes without shutdown of the cooling unit. (Normal replacement should not be required more than once/year).

m) Primary cooling system shall monitor its own operation and condition of cooling water.

n) The protection system of the cooling cycle shall have minimum following alarms:

   i) Depleted deionizing cell
   ii) Low water resistivity
   iii) High water temperature
   iv) Primary pump stopped
   v) Fan stopped
   vi) Primary pump or fan interlock circuits faulty
   vii) Primary cycle (Make-up water) tank level low
   viii) Failure of control supply.
   ix) UMD/UPS fault.

o) Following shutdown alarms / TRIP shall be provided with cooling system protection. Excessive low water resistivity excessive high water temperature, complete loss of auxiliary supply to primary pumps, low flow, low pressure etc.

p) The dissipative components of the converter are cooled with deionized water.

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q) The power losses are transferred to the external ambient by means of a deionized water /air heat exchanger. All the piping and other components shall be provided. complete instrumentation set including following shall be mounted on board in order to check the status of the cooling system.

- Conductivity gauge system.
- Flow meter equipped with two set points (alarm and trip).
- Pressure meter
- Two thermometers for the inlet and two thermometers for the outlet (two set points for alarm and trip)
- Thermostat

r) The status of the cooling system shall be monitored by means of the control system.

s) Replacement of certain cooling equipment (e.g. pumps, fans, cooler unit etc.), if defective, shall be possible while the cooling system still operates.

C.8.1.6 Tests on STATCOM Unit Valve

All applicable tests i.e. Operational Type Tests, Dielectric Type Tests and Test for valve insensitivity to electromagnetic disturbance and Production tests shall be done as per the latest edition of IEC 62927.

C.8.2 STATCOM Station Control equipment and operator interface

C.8.2.1 Control Equipment

The control systems should achieve the functional objectives given in 6.2. The accuracy of voltage should be within ± 1% of the reference voltage. The accuracy of the gradient and linearity of the slope delivered by the STATCOM Station should be defined in relation to the current deviation from the theoretical slope defined in 3.1. The maximum deviation should be less than ± 5% of the nominal current.

The control system design shall be based on a single fail criterion i.e. failure of any one component in the system should not result into outage of the complete system. As a minimum, a dual (hot standby) digital programmable controller shall be supplied for each STATCOM unit/branch and STATCOM Station to control the STATCOM, MSRs and MSCs completely including the functions listed as mentioned below:

a. The controller shall have diagnostic and self-checking features for both itself and for valves, gate firing and drive circuits, interface hardware, and software. This is required to reduce outage times and to facilitate fault finding.

b. The Controller shall be reprogrammable. The Owner shall have at least the following possibility for changing the following reference and limit values via HMI:

c. Closed loop Controllers:

The STATCOM Station controller shall have the means to modify the reference set points. This refers to the functionality that will allow all the control parameters to be adjustable within selectable limits and is inclusive of, but not limited to following:

o Voltage controller

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- o Q controller (reactive power controller).
- o Supplementary VSC current controller.
- o Other supplementary control functions.

d. Sequence Controllers:

The sequence control and open-loop controllers shall include the control of all switchgears and associated control gear and external devices.

e. The Controller shall have at least 10% excess I/O capacity to allow future program upgrades to satisfy the changing requirements of the power systems or future extensions to the STATCOM Stations. As a minimum, a control of up to 4 future HV shunt devices (reactors or capacitors) shall be included in the offer.

f. All control signals available for remote control must also be available locally so as to ensure that a local operator can operate the STATCOM Station if the communications link between STATCOM Station and remote control centers is lost.

g. A changeover switch shall be provided for control of the selection of local or remote control.

h. TSP shall provide the equipment necessary for the purpose of control, protection and interlocking of all equipment within the scope of supply.

i. TSP shall be responsible for the design and coordination of control, protection and interlocking system and switching sequences within the STATCOM Station. All necessary interfacing required between AC switchyard equipment and STATCOM Station for the above purpose shall also be included in the scope of TSP.

j. It is proposed to control STATCOM through a Supervisory Control and Monitoring System (SCADA). All the data shall be acquired through suitable means from the field and various components and control is executed through the redundant HMI. The local STATCOM Station Control system shall consist of a redundant STATCOM Station controller, redundant HMI workstation, Gateway, STATCOM Station Control System Engineering cum Disturbance Recorder (DR), PC which can also be used as standby HMI workstations in case of emergency with associated peripheral equipment such as color laser log Printers, Color laser jet fault record printer, GPS System, Inverter / UPS etc. all interconnected via redundant Ethernet based Station LAN Network. Each work-stations and PCs at STATCOM Station shall have at least 19" LED display.

k. In addition to the above, HMI workstation (identical to HMI Workstation provided in the STATCOM Station control room) should also be provided in the control room of the main 400kV substation. This HMI workstation should be powered from an independent UPS system adequate enough to provide power to the HMI workstation for a minimum two hours in case of auxiliary power failure.

l. The control equipment shall satisfy the reliability and availability requirements specified in this specification

m. All necessary measures shall be taken to ensure satisfactory operation in the presence of harmonic current and voltage, noise and radio interference signals. The equipment shall be designed to operate in the environmental conditions specified in the specification.

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n. There should be a provision for independent operation of MSC/MSR after delinking it with STATCOM controls when STATCOM is out of service due to any reason.

o. The threshold values for switching the MSC/MSR on/off shall be configurable in all modes of operation.

C.8.2.2 Operator Interface

a) Each STATCOM Station shall have a SCADA consisting of an HMI which shall provide a Centralized (local) operator control of the STATCOM Station functions. All human interface operations necessary for the control and monitoring of the STATCOM shall be provided at this point.

b) Any abnormal condition requiring operator action or intervention or maintenance on any of the STATCOM Station subsystems shall be annunciated at the STATCOM Station control room and the Substation control room.

c) The local HMI shall include the following diagrams as different screens in the display system:

i. Complete STATCOM Units and STATCOM Station single line diagram including EHV and MV busses

ii. AC Auxiliary supply and distribution

iii. DC Auxiliary supply and distribution

iv. STATCOM Valve cooling systems

v. Interlocking system.

d) These diagrams shall indicate status, alarms, voltages, currents, etc. The HMI shall provide complete diagnostics on alarm and trip indications as required and discussed in this specification, including SER information.

e) A facility shall be provided whereby the local HMI features and functions shall be accessible from remote. A remote user shall be able to view screens and change STATCOM Station parameter settings.

f) As the substation where STATCOM Station shall be installed, will be equipped with Sub-station Automation System (SAS) conforming to IEC 61850, it is required that STATCOM Station control and monitoring shall be integrated with SAS at the main Sub-station by the TSP. It is proposed to connect STATCOM Station's SCADA with SAS through a Gateway and the database, configuration etc of the main substation SAS shall be upgraded to incorporate STATCOM Station events, alarms, Controls (both switchgear and control functions of STATCOM Station like the setting of parameters etc.) so that STATCOM Station can be effectively monitored and controlled from main substation SAS and shall be monitored from Load Dispatch Center (RLDC).

C.8.3 STATCOM Station Protection System

C.8.3.1 Protection system Design

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a) To ensure that faults are cleared within stability critical clearing time, to minimize damage to the plant, and to avoid voltage collapse, loss of load, or load limitations, TSP shall provide a high speed main protection scheme. An independent (having a separate measurement system) back-up protection scheme shall be provided in the event of the main protection scheme failing or taken out for maintenance.

b) The STATCOM Station shall be completely self-protecting (unit protection). STATCOM Station shall be protected from damage for all conditions of over-current, overvoltage, excessive reactive power loading, unbalance due to loss of capacitor elements, phase-to-phase and phase-to-ground faults, three phase faults, loss of cooling, semiconductor valve or control malfunction, faults (STATCOM, MV system) in individual primary connected components of the STATCOM, HV system faults, etc. The STATCOM Station shall withstand the maximum fault current for a period of the maximum fault clearing time as specified, considering second contingency cases due to the previously mentioned conditions.

c) All protection equipment and systems should be properly coordinated to prevent incorrect operations of the protection equipment or systems during normal STATCOM Station operation, including anticipated abnormal conditions on the transmission system, as specified. Fail-safe principles should be applied throughout.

C.8.3.2 The basic principle and order of precedence for the control and protection shall be, to take care of the following:

- Correctly identify a fault, problem or error condition,
- Only if necessary, isolate the minimum number of components, subsystems whenever possible,
- Utilize degraded modes to the maximum extent possible either directly (no interruption of the STATCOM Station operation) or indirectly (by tripping the STATCOM Station momentarily in order to isolate the branch and re-energization of the STATCOM Station).
- Trip STATCOM Station and Block.

a) Failure of the STATCOM Station Interface (SCADA interface) shall not result in a Protection trip of the STATCOM Station. A fail-safe philosophy shall be implemented to allow the STATCOM Station to operate safely and independently from the STATCOM Station Interface (SCADA interface).

b) Protection equipment shall be designed and applied to provide maximum discrimination between faulty and healthy circuits.

c) The Protection shall be sufficiently sensitive to cater to the full range from maximum to minimum fault level conditions. The Protection shall also be suitable for a system fault level equal to the maximum short circuit capacity of the substation. All current transformer designs shall be based on these fault levels.

d) All required protective, control devices, etc including auxiliary instrument transformers and panels, relays, cabling, wiring, indication, and all other associated plant and material necessary for the effective operation of the protection systems shall be supplied and installed by TSP.

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e) The protective relays shall be microprocessor based. Relays shall have approved characteristics and be mounted in dust and moisture-proof cases. The protective relays shall be provided with visual indications for starting, tripping and failure of the protective function. The LEDs shall be reset without opening the covers. The protection relays shall also be equipped with HMI facilities suitable for manual parameter settings and viewing of the settings. Relays with provision for manual operation from outside the case, other than for resetting, are not acceptable. Relay settings shall be visible and readable without having to remove the relay cover. Relays shall be of approved construction and shall be arranged so that adjustments, testing and replacement can be effected with the minimum of time and labor. Auxiliary Relays of the hand reset type, if provided shall be capable of being reset without opening the case. Electrically reset tripping relays shall be provided as necessitated by the system of control, such as for those circuits subject to remote supervisory control.

f) Relay contacts shall be suitable for making and breaking the maximum currents which, they may be required to control in normal service but where contacts of the protective relays are unable to deal directly with the tripping currents, approved Auxiliary tripping relays shall be provided. In such cases, the number of auxiliary tripping relays operating in tandem shall be kept to a minimum in order to achieve fast and reliable fault clearance times. Separate contacts shall be provided for alarm and tripping functions. Relay contacts shall make firmly without bounce and the whole of the relay mechanisms shall be as far as possible unaffected by vibration or external magnetic fields

g) Steps shall be taken to protect the circuitry from externally impressed transient voltages which could reach the circuitry via connections to instrument transformers or the station battery. The routing of cables should be such as to limit interference to a minimum. Any auxiliary supplies necessary to power solid-state circuits shall be derived from the main station battery and not from batteries internal to the protection.

h) **Relay communication**

The Relays shall also have a communication port provided on the front of the relay for configuration and parameter settings as well as downloading of data. A direct port suitable for remote communication shall also be provided at the back of the Relay. This port shall conform to IEC - 61850.

i) **Tripping schemes**

- Tripping of MV circuit breakers shall be done by means of two-separated trip signals.
- Duplicate high security tripping circuits for MV Circuit Breaker shall comprise two independent high speed (less than 10 ms) high burden (greater than 150 W) tripping relays for each circuit, each with its own independent DC supply. The trip circuits for all circuit breakers need to be equipped with a "lockout" function and it shall be possible for this to be reset manually and remotely by the operator.

j) The protection for the power system is based on a normal switching state and an occurrence of a single fault. This means that faults resulting from maintenance as well as the simultaneous occurrence of two or more faults are not taken into account.

k) The input circuits of the digital protections shall be monitored by means of a plausibility check. If any incorrect information is found, the protection function shall be blocked by the protection system. All protection relays shall have facilities for monitoring trip circuits. Detection of an interruption in the case of a switched on circuit breaker shall be signaled.

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l) **Test facilities**

- It shall be possible to test the protective device during operation without causing trips. Links shall be provided for the isolation of individual protection trip circuits and the common protection trip circuit to each circuit breaker trip coil.
- Separate test facilities shall be provided for each current and voltage transformer secondary circuit so as to give access for testing of protection relays and associated circuits. The Test facility to be supplied shall have two selectable positions, a Service and a Test position. In the service Position, the test switch connects CTs and VTs signals to the Relays and trip commands to the circuit breaker trip coils. In the Test Position, the test switch applies a short-circuit to the Current Transformer (CT) secondary windings and open circuits the VT secondary cores and allow injection of secondary current and voltage into the relay. At the same time, the Trip commands to the Circuit Breaker Trip Coils are isolated. The test switch supplied shall be to the Approval of the Owner.

m) The protection of the electrical system shall be designed and installed in such a way that the failed equipment is disconnected selectively and automatically. All equipment have to remain operative during transient phenomena, which may arise during switching or other disturbances to the system.

n) **Auxiliary DC Supplies**

- The protection concept has to be designed in a way so that back-up protection is provided at all times. All protection relays shall be configured in a way that failure of one Auxiliary DC system will not affect the relay. If all DC supplies to the controllers are lost, the STATCOM Station breaker must be tripped via the protection panel.

o) **Electromagnetic Compatibility**

- Electronic Relays and other electronic devices and the ancillary circuits connected to them, such as power supplies, current and voltage transformer secondaries, status or tripping or alarm circuits shall be designed to ensure that they are compatible for use in the hostile electrical environment found in an MV or HV substation.
- Adequate steps by means of suitable design, shall be taken to prevent Electromagnetic Interference (EMI), (generated by sources such as circuit breakers, disconnectors, lightning, radio or radar emissions, switching contactors in DC circuits etc) or Electrostatic Discharges (ESD) from affecting relay performance or causing damage to components.
- All relays offered shall therefore have been type-tested to meet the current requirements of IEC Standards with respect to High Frequency disturbance, Fast Transients, Electrostatic Discharge, Radio Frequency Interference testing etc.

p) List of Protection functions for STATCOM Station

<u>Coupling Transformer Protection:</u>

i) Biased Differential protection (87T)
ii) REF protection (64T)
iii) Overcurrent protection (50, 51)
iv) Ground Overcurrent (51N)
v) Over flux protection (HV and MV)
vi) Transformer mechanical trips

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STATCOM MV Bus Protection:

i) Bus Differential protection (87)
ii) Ground over current protection (51N), used with a neutral Grounding Transformer
iii) Under / Over Voltage (59 Ph-Ph) protection
iv) Over voltage (Open Delta) protection

STATCOM Branch Protection:

i) Differential protection (87)
ii) Overload protection (49)
iii) Overcurrent protection inside delta (50, 51)
iv) Negative phase sequence protection (46)
v) STATCOM branch overcurrent protection (50, 51, 50N, 51N)

MSR Branch Protection:

i) Differential protection (87)
ii) Ground over current protection (51N)
iii) Reactor branch unbalance protection (Negative Phase Sequence)
iv) Thermal Overload protection

MSC Branch Protection:

i) Ground over current protection (51N)
ii) Capacitor Overvoltage (Using current signal) protection.
iii) Capacitor unbalance protection (60C)
iv) Over current protection (50, 51)

- The protection functions listed above are the minimum set of function to be provided, any additional protection required to fulfill the requirement of the protection system shall also be provided.
- Further protection functions of individual branch (STATCOM, MSC, MSR) shall trip the respective branch MV CB (Circuit Breaker).
- All CBs shall be provided with individual Breaker Failure protection relays. Breaker Failure relay shall have the logic based on the current signal or CB close open status.
- Any fault on MV bus will trip the 400 kV breaker. However, any branch fault shall be cleared by the respective MV branch Circuit Breaker.
- Protection System for the STATCOM valve portion of the STATCOM station shall be provided in the redundant controllers to isolate the STACOM valve during internal overload/overvoltage, ground fault etc.

C.8.4 STATCOM Station Fault Recording System

An integrated Transient Fault Recording (TFR) System shall be supplied, installed and commissioned. This shall include trigger level settings for analog signal, etc subject to review and comment. Disturbance and event recording facilities are required for local monitoring of the STATCOM following a disturbance on the power system or the STATCOM System. The TFR shall be GPS synchronized.

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The following inputs are required:

- All analog signals (output signals) including 3-ph and sequence values of voltage, current.
- All digital signals (control outputs, status indications, commands, alarms, and trip indications). Internal STATCOM Station control signals/variables to be selectable.
- The accuracy of the TFR for event inputs shall be at least 100 µs (sampling rate of minimum 10 kHz).
- The TFR shall have provision for remote access and retrieval of recorded information onto a PC. For this purpose, a communication link to the substation LAN shall be implemented.
- The remote software application for data retrieval shall be included.
- There shall be multiple channels to view 3-ph and sequence values of voltage, current.
- TFR file shall be viewable in any open source software.

C.8.5 Mechanically Switched Reactor (MSR)

MSR is a fixed source of inductive reactive power connected in shunt to the MV bus of STATCOM Station and switched by means of a circuit breaker (with a control switching device) based on the command from the STATCOM Station control system. The rated capability of MSRs shall be at 400kV (Referred to as "Point of Common Coupling" or PCC) and in the steady state frequency range of 48.5 Hz-50.5 Hz. However, the MSR Components shall be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station. The individual components of MSR shall be able to withstand the onerous conditions imposed by system overvoltage and harmonics. The MSR consists of 3-ph Air Core Reactor, 3-ph MV Circuit breaker (SF6/Vacuum type), associated current transformer, 3-ph Disconnector and associated safety grounding switch. The MSR area shall be fenced and a castle key interlock with safety grounding switch shall be provided for human safety.

Specifications for individual components like Air core reactors etc are provided in the subsequent clause.

C.8.6 Mechanically switched capacitor (MSC) (if applicable)

MSC is a switched 3-phase capacitor bank connected in shunt to the MV bus of STATCOM station and switched automatically by means of a circuit breaker (with control switching device) based on the command from STATCOM Station control system. The rated capability of MSCs shall be at 400 kV (Referred to as "Point of Common Coupling" or PCC) and in the steady state frequency range of 48.5 Hz-50.5 Hz. However, TSP will ensure the corresponding values at PCC (400 kV) for possible operating condition measured at PCC. The MSC Components shall be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station. The individual components of MSC shall be able to withstand the onerous conditions imposed by system overvoltages and harmonics. The MSC consists of 3-ph AC power capacitor bank, a current limiting air core reactor as required, 3-ph MV Circuit breaker (SF6/Vacuum type), associated current transformer, 3-ph Disconnector and associated safety grounding switch. The MSC area shall be fenced and a castle key interlock with safety grounding switch shall be provided for human safety.

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Specifications for individual components like Capacitors, Air core reactors etc are provided in the subsequent clauses.

C.8.7 Air Core Reactors

a) Reactors shall be air core, dry type, be suitable for outdoor installation and there shall be no tapping on the reactors. The insulation level shall be adequate and TSP has to ensure proper insulation coordination.

b) The insulation of the reactor shall be class F and hot spot temperature rise shall not exceed 105 °C above ambient temperature. Winding temperature rise shall not exceed 80 °C above ambient temperature.

c) The reactor shall be designed to withstand thermal dynamic shocks and mechanical shocks while in service and during erection.

d) The reactor shall fully conform to the relevant IEC standard.

e) The reactor shall be designed to withstand overloading due to over voltage as specified and shall also be subjected to excitation by harmonics; the reactor must be able to withstand such events without deterioration in normal life.

f) The reactors shall be subjected to type and routine tests in accordance with the latest issue of IEC-60076 as appropriate to the type of reactor provided.

g) Tests on Reactors: The reactors shall be subjected to type and routine tests in accordance with the latest issue of IEC-60076 as appropriate to the type of reactor provided.

C.8.8 AC POWER CAPACITORS

(i) General

a) The capacitor banks shall comprise capacitor units, discharge devices, protection equipment, series reactor as required, earthing switches, suitably connected in series and parallel, mounted at ground level with protected fencing all around. The number, arrangement and connection of capacitor banks shall be designed to suit the requirement of the compensator as a whole. If convenient, the capacitor banks may be used in conjunction with reactors. In this event, the rating of the capacitor shall be adequate to cope up with the harmonic loading. The frequency variations shall also be considered. To limit the peak inrush current for switching in the capacitors, current limiting reactors with parallel connected damping resistors, if required shall be connected in series with shunt capacitor banks.

b) The capacitors shall be provided with internal-type fuses. Alternatively, the fuseless capacitor is also acceptable.

c) Fuses shall not melt nor shall deteriorate when subjected to the inrush current during the life of the capacitor bank.

d) With the capacitor charged to a peak voltage, the fuses associated with the healthy elements shall not melt when carrying the discharge current resulting from a breakdown of an element or from an external short circuit.

e) Fuses shall be capable of disconnecting a faulty element over a range of voltage across the unit terminals from 0.9 Un to 2.0 Un. In addition, if all the elements in the same row of an internally fused capacitor were to fail as a result of a cascading action, the last fuse element to melt shall be capable of successful disconnection with a voltage of not less than 1.5 times.

f) After fuse operation the fuse assembly shall be able to withstand continuously at least 1.5 times the rated unit voltage U_n across the gap for 10 Seconds.

g) Fuses shall preferably be of the current limiting type but fuse system shall in any event be designed to ensure that energy released into a faulty capacitor unit is less than the valve that will cause rupture or bursting of the container.

h) The capacitor units shall be the outdoor type. The container of the capacitor shall be of stainless steel.

i) Each capacitor unit shall be readily accessible and replaceable without disturbing any other unit. The supporting frames shall be designed to provide adequate ventilation to the units.

j) The dielectric fluid used in the capacitor unit shall be environmentally safe and bio-degradable, non-toxic. Polychlorinated biphenyle (PCB) type dielectric or any of its derivatives shall not be acceptable.

(ii) Construction and Design Requirement

a) The capacitors shall conform to IEC-60871. The capacitors shall be provided with internally mounted discharge resisters with characteristics in accordance with IEC-60871.

b) The current limiting reactors (as required) shall be dry type and connected in series with the capacitor bank. Suitable lifting lugs shall be provided.

c) The capacitor enclosure shall have sufficient strength to withstand without damage or loss of life, mechanical load, both in operation and during erection. The loads shall include electromagnetic forces including those during faults external or internal to the capacitor bank, wind loading, forces due to expansion and contraction caused by ambient temperature and load variation, and seismic effects all as specified.

d) The capacitor units shall be interchangeable in order to reduce the spare requirements and simplify maintenance procedures.

e) The capacitor stack shall be vibration free. The stack shall have a fixed potential, that is connected to one electrical point in the bank. The stack shall be of galvanized structural steel.

f) The capacitor racks shall be supplied complete with all capacitor units, insulators, and connections and shall be equipped with lifting lugs/eyes to facilitate assembly into the stacks. The racks shall be constructed of galvanized structural steel. No drilling of galvanized steel shall be allowed. Each rack shall be labeled with the weight of the fully equipped racks, the phase, and the bank of which it forms a part. The maximum and minimum capacitor unit capacitance which may be substituted into the racks as spares shall be suitably identified. Suitable warning labels shall be affixed.

g) The capacitor shall be specially designed to be suitable for intermittent duty.

h) The capacitors should comply with the overload capacity as per NEMA Standard.

i) The capacitor elements shall be vacuum dried inside the case prior to impregnation with dielectric fluid. After impregnation, the capacitor unit shall be sealed immediately upon removal of the impregnated reservoir.

j) The discharge resister shall discharge the unit from peak operating voltage to less than 75 Volts within 10 minutes.

k) The capacitor case shall be made from type 409 stainless steel or equivalent stainless steel with all joints welded and tested for leaks.

l) All racks and bus insulators as well as the insulators used to insulate each stack of capacitor from ground level shall be pincap or post type. The minimum voltage rating shall be 15 kV and low frequency wet withstand voltage of all insulators used to insulate within or between the capacitor rack of a stack shall not be less than three times the actual voltage stress across the insulators. The insulator shall be outdoor type manufactured from wet porcelain. The insulators shall be bolted to the top members of the frame to support electric-grade aluminum buses.

m) The size and groupings of the individual capacitor units shall be such that a single blown fuse will not cause the voltage across the parallel group to rise by more than 10%.

n) The redundancy to be provided, shall be as per the requirement specified regarding reliability and availability in the clause mentioned elsewhere.

(iii) Capacitor Unit Failure Detection

The stages of capacitor units or element failure detection shall be provided as below:

a) A three-step unbalanced current protection shall be provided in each capacitor bank to initially generate an alarm when the unbalance limit is reached and finally to trip the bank in case of the limit is exceeded.

b) The first stage shall generate an alarm and the capacitor unit shall continue in service. It may be assumed that the bank shall be disconnected for maintenance within 2 weeks.

c) The second stage shall generate a separate alarm and a delayed trip signal which will disconnect the bank after two hours.

d) The third stage shall cause immediate disconnection of the Capacitor Bank.

(iv) Tests on Capacitors

All the tests on capacitor units shall be in accordance with the latest issue of IEC 60871.

C.8.9 Coupling Transformer

The TSP shall provide single phase coupling transformers to operate as 3- phase bank with one unit as a common spare (cold spare) with necessary auxiliary arrangements for stepping down the voltage from 400kV system to a suitable medium voltage value as required for replacing any one of the faulty phase units without physically shifting the transformer. The Medium Voltage side of the coupling transformer to couple with the STATCOM shall not be less than 20 kV to ensure optimum power transformation.

The Coupling Transformer shall be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station. The transformer should be designed and rated to carry complete capacitive and inductive reactive loading as specified for STATCOM Station including that of mechanically switched capacitors (MSC) and Reactors (MSR) etc.), as well as harmonic currents associated with the most onerous operating conditions of STATCOM Station, without loss of life.

The coupling transformer shall be designed in accordance with the most up-to-date experience in STATCOM application and shall incorporate the latest improvements of design currently employed in the industry. The Comprehensive design review of the Coupling Transformer of STATCOM Station shall be carried out by the TSP.

C.8.9.1 General Requirements

The coupling transformer shall be designed electrically and mechanically for operating conditions peculiar to STATCOM Station operation, which shall include, but not be limited to the following:

a) Electrical insulation problems resulting from the transformer being subjected to voltages of distorted sinusoidal wave shape because of saturation, harmonics, trapped charges in capacitors etc.

b) The cumulative effect of electro-dynamic forces produced during valve commutation or other short circuit conditions imposed by valve design limitation and valve group operation.

c) Harmonic currents due to STATCOM operation, with reference to additional stray losses resulting from these harmonic currents.

d) No generation of uncharacteristic harmonics by the transformers.

e) Stresses due to normal control operation and other onerous operations such as blocking and de-blocking.

f) Stress due to the fast response requirement of STATCOM for loading from 100% inductive to 100% capacitive and vice-versa.

g) Overvoltage stresses for which STATCOM shall be designed as per specification would apply to the transformer also.

h) All other stresses for which STATCOM Station shall be designed as per specification would apply to the transformer also.

i) The transformer and all its accessories like Bushings, CTs etc shall be designed to withstand without damage, the thermal and mechanical effects of any external short circuit to earth and of a short circuit across the terminals of any winding for a period of 3 seconds. The short circuit level of the 400 kV system to which the transformer shall be connected, will be as per the maximum short circuit level of the main substation. Short Circuit level of the Coupling Transformer shall be as per the Short Circuit level of the respective Substation. Short circuit level for HV bushing shall be 63 kA for 1 Sec.

j) The transformer shall be capable of being loaded in accordance with IEC 60076 or the overload conditions as specified whichever is the worst. There shall be no limitation imposed by bushings during its terminal fault.

k) The transformer shall be capable of withstanding the mechanical stresses caused by symmetrical or asymmetrical faults on any winding.

l) The transformer should be designed to carry a certain level of direct current consistent with the STATCOM design. To ensure minimum harmonics generation, the saturation flux density of the transformer should be higher than the maximum flux density reached over the full steady state (continuous operating) range; this margin shall be at least 10%. This maximum flux density (over the full steady-state range) is obtained at the highest secondary voltage during any reactive power generation, highest reference voltage, minimum slope, and minimum continuous frequency. The flux density at the highest secondary voltage shall lie in the linear portion of the BH curve of the core. Any harmonic generated by the transformer should be considered for the design of the STATCOM.

m) All protection class Current Transformers in the coupling transformer shall be of PX/PS type. Other details of these Current Transformers shall be as per protection/metering requirements and shall be decided during detailed engineering. However, the parameters of the Winding Temperature Indicator (WTI) of Current Transformer for each winding shall be as per the Coupling Transformer manufacturer.

n) Transformers shall be capable of operating under natural cooled conditions up to the specified load. The forced cooling equipment shall come into operation by pre-set contacts of winding temperature indicator and the transformer shall operate as a forced cooling unit initially as Oil Natural Air Forced (ONAF) up to a specified load and then as Oil Forced Air Forced (OFAF). Cooling shall be so designed that during total failure of power supply to cooling fans and oil pumps, the transformer shall be able to operate at full load for at least ten (10) minutes without the calculated winding hot spot temperature exceeding 140 degrees Celsius. Transformers fitted with two coolers, each capable of dissipating 50 percent of the heat due to losses at the continuous maximum rating, shall be capable of operating for 20 minutes in the event of failure of the oil circulating pump or blowers associated with one cooler without the calculated winding hot spot temperature exceeding 140 degree Celsius at continuous maximum rating.

o) The transformer shall be free from any electrostatic charging tendency (ECT) under all operating conditions when all oil circulation systems are in operation. In general, the oil flow speed shall not exceed 1.0 m/sec within winding in the oil flow system of the transformers. The manufacturer shall ensure that there is no electrostatic charging tendency in the design.

The Technical Parameters of the Transformer shall be as below

Sl. No.	Description	Unit	Technical Parameters
1.1	Rated Capacity		
	HV	MVA	To meet the performance requirement and ratings of STATCOM. The transformer shall be suitable for 100% reactive loading
	MV	MVA	
1.2	Voltage ratio (Line to Line)		400 / XX (*)
1.3	Single / Three Phase Design		Single phase

Sl. No.	Description	Unit	Technical Parameters
1.4	Applicable Standard		IEC 60076
1.5	Rated Frequency	Hz	50
1.6	Cooling and Percentage Rating at different coolings		ONAN/ONAF/(OFAF or ODAF): 60% / 80%/100% OR ONAN/ONAF1/ONAF2: 60% /80%/100% OR OFAF (with 5 x 25% unit cooler if required)
1.7	Impedance at 75 °C (in percentage)		
	HV–MV		To suit the design requirements.
1.8	Tolerance on Impedance (HV-MV)	%	As per IEC
1.9	Service		Outdoor
1.10	Duty		Continuous Reactive loading
1.11	Overload Capacity		IEC-60076-7
1.12	Temperature rise over 50 °C ambient Temp		
i)	Top oil measured by thermometer	^{0}C	50
ii)	Average winding measured by resistance Method	^{0}C	55
1.13	Windings		
i)	System Fault level		
	HV	kA	63
	MV	kA	To suit the design requirements.
ii)	Lightning Impulse withstand Voltage		
	HV	kVp	1300
	MV	kVp	*
	Neutral	kVp	170
iii)	Switching Impulse withstand Voltage		
	HV	kVp	1050
iv)	One Minute Power Frequency withstand Voltage		
	HV	kVrms	570
	MV	kVrms	*
	Neutral	kVrms	70
v)	Neutral Grounding		Solidly grounded
vi)	Insulation		

Sl. No.	Description	Unit	Technical Parameters
	HV		Graded
	MV		Uniform
vii)	Tan delta of winding	%	< 0.5
1.14	Vector Group (3 – ph) (unless specified differently elsewhere)		YNd*
1.15	Tap Changer		Not Applicable
1.16	Bushing		
i)	Rated voltage		
	HV	kV	420
	MV	kV	*
	Neutral	kV	36
ii)	Rated current (Min.)		
	HV	A	*
	MV	A	*
	Neutral	A	*
iii)	Lightning Impulse withstand Voltage		
	HV	kVp	1425
	MV	kVp	*
	Neutral	kVp	170
iv)	Switching Impulse withstand Voltage		
	HV	kVp	1050
v)	One Minute Power Frequency withstand		
	Voltage		
	HV	kVrms	695
	MV	kVrms	*
	Neutral	kVrms	77
vi)	Minimum total creepage distances		
	HV	mm/kV	31
	MV	mm/kV	31
	Neutral	mm/kV	31
vii)	Tan delta of bushings		
	HV	%	Refer Note 2
	MV	%	Refer Note 2
viii)	Max Partial discharge level at Um		
	HV	pC	10
	MV	pC	10
	Neutral		-

Sl. No.	Description	Unit	Technical Parameters
1.17	Max Partial discharge level at 1.58 * Ur /√3	pC	100
1.18	Max Noise level at rated voltage and at principal tap at no load and all cooling Active	dB	80
1.19	**Maximum Permissible Losses of**		
	Transformers		
i)	Max. No Load Loss at rated voltage and Frequency	kW	To suit the design requirements.
ii)	Max. Load Loss at maximum continuous current and at 75° C	kW	To suit the design requirements.
iii)	Max. Auxiliary Loss at rated voltage and Frequency	kW	To suit the design requirements.

Notes:

1. *No external or internal Transformers / Reactors are to be used to achieve the specified HV/MV impedances.*
2. *The criteria for Transformer losses shall be "Copper Loss (Load Loss) > Iron Loss (No Load Loss) > Cooler Loss (Auxiliary Loss)".*
3. *(*) marked parameters shall be decided based on STATCOM manufacturer's requirement.*

C.8.10 STATCOM Station MV Switchgear

The MV Switchgear shall be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station.

C.8.10.1 MV Circuit Breaker

The MV Circuit Breaker shall comply with the relevant IEC standard and all other relevant Standards, and as specified in this specification. They shall satisfy the General Technical Requirements and shall be designed to operate in the environmental conditions specified in this specification.

The Circuit Breaker offered should be of SF6 type/Vacuum type only and of class C2, M2 as per IEC

i) The circuit breaker shall be complete with terminal connectors, operating mechanism, control cabinets, piping, interpole cable, cable accessories like glands, terminal blocks, marking ferrules, lugs, pressure gauges, density monitors (with graduated scale), galvanised support structure for CB and control cabinets, their foundation bolts and all other circuit breaker accessories required for carrying out all the functions the CB is required to perform.

ii) All necessary parts to provide a complete and operable circuit breaker installation such as main equipment, terminals, control parts, connectors and other devices whether specifically called for herein or not shall be provided.

iii) The support structure of the circuit breaker shall be hot dip galvanized. Exposed hardware items shall be hot dip galvanized or Electro-galvanized.

iv) MV Circuit Breaker shall be equipped with controlled switching with consequent optimization of switching behavior, when used in:

- Switching of Capacitor Bank
- Switching of shunt Reactor Bank

v) Reactor Switching Duty test shall be conducted on MV Circuit Breaker in line with latest edition of IEC 62271-110.

vi) Type Tested for Back-to-Back Capacitor Bank Switching as per latest edition of IEC 62271-100.

vii) Routine tests as per IEC: 62271-100 shall be performed on all circuit breakers.

viii) The medium voltage circuit breakers in any of the branches shall be designed to switch off metallic three phase short circuits only limited by the transformer impedance of the STATCOM System (Coupling transformer) with the initial short circuit current and DC component according to IEC 60909-0. Thereby the worst case time constant where the maximum short circuit peak and DC component occur shall be considered. The network shall be considered to deliver the maximum short circuit power of the substation.

C.8.10.2 MV Isolator and Earth Switch

The isolators and earth switches shall comply with the IEC and all other relevant Standards, and as specified in this specification. They shall satisfy the General Technical Requirements and shall be designed to operate in the environmental conditions specified in this specification.

i) The isolators and accessories shall conform in general to IEC-62271 series as per relevance (or IS:9921) except to the extent explicitly modified in specification.

ii) Earth switches shall be provided on isolators wherever called for.

iii) Switches shall be motor operated with local and remote operation features and local manual operation features. Remote operation of Earth Switch is not required.

iv) Disconnections and earth switches shall electrically and mechanically be interlocked. Castle Key interlocking facilities shall be provided to mechanically interlock the earth switch and isolator to the doors of valve rooms.

C.8.10.3 Instrument Transformers for STATCOM Station

The instrument transformers shall comply with the relevant IEC Standards. They shall satisfy the general Technical Requirement specified in the specification and shall be designed to operate in the environmental conditions specified in this Specification. The instrument transformers provided for control, metering and protective relaying functions shall have voltage and current ratings, accuracy ratings and burden capabilities adequate to provide their designated functions within the overall accuracy requirement of the systems.

Voltage Transformers

Voltage transformers shall comply with the relevant IEC standards IEC 61869 (Part-1, Part-3 and Part-5).

Current Transformers

Current transformers shall comply with IEC 61869 (Part-1 and Part-2). Type tests and routine tests as per relevant IEC.

C.8.10.4 Surge Arrester

TSP shall install the surge arresters necessary for the protection of the equipment associated with the STATCOM Station in accordance with the requirements as per the insulation coordination study. The surge arresters shall give consistent protection to their associated equipment against overvoltage produced by lightning or switching surges, internal or external station faults, and other system disturbances.
The surge arresters shall be rated such that they are able to discharge a specified maximum energy due to the application of lightning, switching surges, temporary over voltages and faults as determined by insulation coordination studies, without coming into the temperature region where thermal runaway could result upon subsequent application of maximum transient and steady state voltage conditions.

The arrester housing shall be porcelain/composite type. The end fittings shall be made of non-magnetic and corrosion proof material.

Internal components shall be designed to eliminate internal corona and also to ensure minimal capacitive coupling with any conducting layer of pollutant on the outside of the porcelain housing. Particular attention shall be given to the high discharge currents which some of the arresters may experience in service due to discharge of stored energy of the AC filter and reactive compensating equipment, tripping of STATCOM etc.

C.8.11 STATCOM Station Auxiliary Power Supply

The auxiliary supply of STATCOM Station shall conform with the system requirements relating to reliability, availability, and redundancy, performing continuously to help ensure that the complete STATCOM Station operates as per the requirements. STATCOM station Auxiliary supply including all necessary switchgear (viz. AC/DC, lighting boards etc.) shall be completely separate from the main 765/400/220 kV substation auxiliary supply, all loads of STATCOM station shall be fed from this supply. The auxiliary supply provides power to the controllers, cooling system, station supplies, and various other essential and non-essential loads. With the exception of the cooling system, all other essential loads are also connected to the DC system

of the STATCOM Station which is also to be provided separately from the DC system of the main 765/400/220 kV substation.

The auxiliary supply system shall be able to provide a stable supply for the STATCOM Station during system faults such as single-phase faults, phase-to-phase faults, and three-phase faults and LVRT (Low Voltage Ride Through) to allow continuous operation of the STATCOM Station during these transient events.

The auxiliary supply system of each STATCOM Station shall consist of two main incomers and one emergency incomer from DG set. The two main incomers shall be required to be paired to act redundantly to help ensure a certain degree of reliability and availability. One of the main incomers shall be supplied from 33 kV tertiary winding of 765/400/33 kV or 400/220/33 kV ICT at the main substation.

The other main incomer can be supplied from any one of the following three options:

- Supplied from Tertiary/Yoke winding of STATCOM coupling Transformer.
- Supplied from MV Bus Bar of STATCOM Station.
- Supplied from Power PT on HV side of coupling Transformer.

Wherever the Voltage variation on the incomer is very high, a solid state AVR (Automatic Voltage Regulator) shall be provided to control the auxiliary supply voltage.

All MV incomers shall be provided with suitable CB, disconnector, instrument Transformer etc along with necessary protection system.

C.8.12 Fire Protection System for STATCOM Station:

Necessary fire protection for STATCOM units, Coupling Transformer, MSC, MCR and Harmonic filter (if any) shall be required. The main features of these protections are as under.

Fire Detection and Alarm System:

Suitable fire detection system using smoke detectors and/or heat detectors shall be provided in STATCOM Station for all room and areas. These smoke fire detection systems shall be connected to a separate Fire annunciation system clearly identifying the zone.

Hydrant System:

The hydrant system shall be extended from firefighting system of the substation in the yard. Suitable number of hydrants shall be provided for protection of STATCOM Station equipment in the yard namely Coupling Transformer, MSCs, MSRs and Harmonic Filter (if required) etc as applicable for the station. Further suitable number of hydrants shall also be provided for STATCOM Station building

HVW System:

HVW (High Velocity Water) Spray system shall be provided for coupling transformer. The tapping for HVW system shall be done from nearby transformer/Reactor or any other suitable point of the main substation fire-fighting line.
Fire protection system shall be provided in accordance with the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2023.

C.8.13 Air-conditioning and ventilation system for STATCOM station

The STATCOM Station shall be provided with Air conditioning system as per requirement.

1) AC System (Except Valve Hall):

Air condition system shall be provided for the following rooms in the STATCOM Building:

a. Control and Relay room
b. Battery room
c. Conference Room
d. Store cum workshop
e. Cooling system room
f. Lobby

Capacity and quantity of the AC units shall be decided based on heat load calculation and redundancy requirement.

2) Air-Conditioning System for Valve hall:

Air-Conditioning shall be provided for each Valve room for maintaining the following inside conditions round the year:

DBT - 35 °C (Maximum) Relative Humidity (RH) - 60% (Maximum)

The system shall be designed for an outside ambient temperature of 50 °C. Based on the above system design and parameters for valve room the AC system shall comprise "AHU and Air-cooled DX Condensing units" with one Main and one Standby unit for each room. The system shall be designed for 24 Hours, 365 Days of the year operation to maintain the inside temperatures of the Valve Hall for proper operation of the critical equipment. The air-cooled condensing unit shall be designed for continuous duty.

C.9 Engineering studies

The TSP shall carry out studies as brought out in this section with a model of the STATCOM in PSSE and PSCAD and documentation of the same shall be preserved and to be submitted to CEA/CTU, as per their requirement. The objective of these studies is to verify the steady state requirement of reactive power under normal and contingent operating conditions for peak and light loads conditions in the network.

The studies shall have to be carried out for

- Peak Load

- Light Load
- Contingency Conditions

The load flow and dynamic file available with CTU shall be provided to the TSP in PSSE version 34 format. If data is not available typical data shall be assumed by TSP.

The studies should demonstrate that the STATCOM system meets all system and equipment specified performance criteria as per the specification. Engineering studies should include, but not be limited to, the studies described in subsequent subsections.

C.9.1 System dynamic performance studies

Dynamic performance studies should verify that the STATCOM system controls the system's dynamic performance during system disturbances. Dynamic performance studies include the following:

a. Studies verifying that the STATCOM provides adequate dynamic control to meet the system and STATCOM system performance criteria for the system conditions.

b. Study of response time and of the STATCOM system's behavior and contribution to the system's recovery from faults.

c. Studies to verify the operation of any supplementary controls designed to damp power oscillations following system disturbances.

d. Studies to evaluate the interaction of the STATCOM controls with the other nearby control systems, including high-voltage direct current (HVDC) controls, generator controls, and controls of other flexible AC transmission systems (FACTS) devices
In addition to the above, relevant studies shall include the cases stated as mentioned in Annexure-I

C.9.2 Harmonic performance

The studies should evaluate resultant maximum harmonic levels at the STATCOM system point of common coupling (PCC), and determine maximum stresses on all STATCOM system components. The study report should include the following:

a. Evaluation of specified system and operating conditions (refer to Clause 5) under all possible STATCOM operating conditions.

b. Evaluation within maximum ranges of STATCOM system component tolerances (worst performance values may not occur at detuning extremes).

c. Evaluation with maximum system voltage unbalance (refers to item 8 and item 9 in Table 3 of Clause 5).

d. Evaluation of the worst case resonance condition between STATCOM system and overall system.

e. Evaluation of possible resonant over voltages.

f. Transformer saturation induced harmonics for component rating calculation only.

g. Evaluation of impact considering single phase auto reclose deadtime.

C.9.3 Electromagnetic transients, control performance, and overvoltage studies

Transient overvoltage studies should be performed with the actual control modeled to verify that the STATCOM system equipment is adequately protected against over voltages and over currents (including excessive valve recovery voltages) from power system transients resulting from switching, fault clearing events, and credible STATCOM system maloperations. Evaluation shall include the following:

a. Study of start-up, including transformer energization, shutdown, switching coordination, and other local area network switching events

b. Study of STATCOM system protection and protection coordination

c. Faults on the high-voltage (HV) and MV bus (single line-to-ground, phase-to-phase, and three-phase)

d. Faults across the VSC, capacitors, and other equipment if used.

e. Control interaction

C.9.4 Insulation coordination study

Overall insulation coordination should be verified by considering the results of 8.4 (dynamic over voltages, and fault and switching transients), including the impacts of lightning surges on the STATCOM equipment. This study should determine and verify insulation levels, clearances, and arrester placement and ratings.

C.9.5 Other Studies

a) Grounding Study

b) Protection coordination

c) PLC/radio interference

d) Magnetic field strength

e) Other studies as applicable

C.9.6 Software simulation models

The TSP shall provide the latest following PSCAD and PSSE simulation model(s) and parameters to CEA/CTU/GRID-INDIA along with detailed documentation for the purpose of future simulation to adequately represent and model the proposed STATCOM system in the respective software:

a. **Stability model**. TSP should provide a detailed STATCOM system dynamics model for use in (PSCAD and PSSE) power flow and stability simulation software The model detail should be appropriate and complete for positive-sequence power system simulation and analysis that is typically performed with power flow and transient stability programs. All appropriate control features for such analysis will be modeled, and necessary documentation on the theory and use of model should be provided. Further, a generic model, benchmarked to detailed STATCOM stability model, shall also be furnished for distribution.

b. **Transient model**. TSP should provide a detailed STATCOM transients model for use in PSCAD. The model detail should be appropriate and complete for the transient response calculation

of the STATCOM system. All appropriate control features for such analysis will be modeled, and necessary documentation on the theory and use of model should be provided. Further, a generic model, benchmarked to detailed STATCOM transient model, shall also be furnished for distribution.

PSS/E files may be used for developing RTDS files/ models. For simulation of STATCOM in PSS/E file (load flow and dynamic) and PSCAD (Transient) model for STATCOM is required for study. TSP will share STATCOM models with CEA, CTU and Grid-India along with detailed documentation for above study purposes and simulations. For PSS/E, both Generic and User-defined models shall be shared by the TSP with the CEA, CTU and Grid-India. Generic model **(PSS/E)** response shall be benchmarked with user-defined model **(PSS/E and PSCAD)** to the extent possible by the TSP. Generic models can be shared by the CEA, CTU and Grid-India with the concerned stakeholders/external party(ies) e. g. STUs etc. on need basis. For User Defined model, confidentiality shall be maintained by the CEA, CTU and Grid-India. For PSCAD, User Defined model shall be provided by the TSP for which confidentiality shall be maintained by the CEA, CTU and Grid-India.

Both UDM (PSCAD and PSS/E) and Generic model (PSSE) shall be provided by OEMs to CEA/CTU/GRID-INDIA without any NDA (Non-Disclosure Agreement)

C.9.7 Factory tests of controls

The integrated nature of the performance of the STATCOM in an electrical grid requires the following tests:

a. The TSP should perform factory simulator system tests for integrated control and protection system to ensure the proper operation of the same. The control system should be connected to a digital simulator with adequate representation of the electrical network for various conditions. The STATCOM system controller needs to be representative of control functions, including basic controllers but inclusive of supplementary controls, firing controls, and protective functions integrated into the controllers. TSP shall submit the Factory Acceptance Test (FAT) reports of STATCOM controls to CTU/RLDC.

b. The simulator should provide an accurate network representation including network harmonic behavior, as well as synchronous condensers, power stations, generators (with AVRs), and pump storage schemes, existing HVDC, SVCs and STATCOMs, future SVCs and STATCOMs, FSC (fixed series capacitors), and shunt reactor/Capacitors/filters.

STATCOM system control function type tests on a simulator should include the following:

- Verification of each control function.
- Verification of control linearity.
- Verification of control redundancy.
- Verification of the monitoring system.
- Verification of the protection system with reference to integrated protective functions included in the Controllers and firing controllers.
- Verification of overall system performance for minor and major system disturbances.

- Verification of processor loading of all digital controllers.
- Verification of STATCOM system parallel operation with other controls in the system and control Stability.
- Verification of control equipment performance for auxiliary power supply voltage (AC and DC) and frequency variations (AC).
- Routine production tests of all control functions, and separately of all protection functions.

C.10.0 VISUAL MONITORING SYSTEM FOR WATCH AND WARD OF STATCOM STATION

Visual monitoring system (VMS) for effective watch and ward of STACOM station premises covering the areas of entire switchyard, STATCOM building, Coupling Transformer, Cooling Towers and main gate, shall be provided. The TSP shall design, supply, erect, test and commission the complete system including cameras, Digital video recorder system, mounting arrangement for cameras, cables, LAN Switches, UPS and any other items/accessories required to complete the system.

Features of VMS system shall be as those specified for main substation. The number of cameras and their locations shall be decided in such a way that any location covered in the area can be scanned. The cameras shall be located in such a way to monitor at least:

a) Coupling Transformer, Mechanically Switched Reactors (MSR) (if any) and Mechanically Switched Capacitors (MSC) (if any), AC filter banks (if any).

b) STATCOM Valve Hall, Cooling System, Electrical and Mechanical Auxiliary area.

c) Entrance to STATCOM Station.

d) All other Major Equipment (such as CB, CT, VT, SA etc.)

The cameras can be mounted on structures, buildings or any other suitable mounting arrangement.

C.11.0 Spares, Special Tools and Tackles

Considering STATCOM as high technology proprietary equipment of the OEM, the TSP shall ensure necessary spares are procured to maintain the necessary reliability and availability of STATCOM station. Further all necessary special tools and tackles required for erection, testing, commissioning, and maintenance of equipment shall also be taken.

Annexure-I

Contingency Cases for STATCOM

A) N-1 Contingency

Contingency at 765 kV level

1. Three Phase Fault close to 765 kV bus of Ananthapuram-II PS followed by tripping of one circuit of Ananthapuram-II PS – Cuddapah 765 kV D/c line (fault persisted for 100 ms)
2. Single Phase to Ground Fault close to 765 kV bus of Ananthapuram-II PS followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Ananthapuram-II PS – Cuddapah 765 kV D/c line
3. Three Phase Fault close to 765 kV bus of Ananthapuram-II PS followed by tripping of one circuit of Ananthapuram-II PS – Davanagere 765 kV D/c line (fault persisted for 100 ms)
4. Single Phase to Ground Fault close to 765 kV bus of Ananthapuram-II PS followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Ananthapuram-II PS – Davanagere 765 kV D/c line
5. Three Phase Fault close to 765 kV bus of Cuddapah S/s followed by tripping of one circuit of Chilakaluripeta – Cuddapah 765 kV D/c line (fault persisted for 100 ms)
6. Single Phase to Ground Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Chilakaluripeta – Cuddapah 765 kV D/c line
7. Three Phase Fault close to 765 kV bus of Cuddapah S/s followed by tripping of one circuit of Kurnool New – Cuddapah 765 kV D/c line (fault persisted for 100 ms)
8. Single Phase to Ground Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Kurnool New – Cuddapah 765 kV D/c line
9. Three Phase Fault close to 765 kV bus of Cuddapah S/s followed by tripping of one circuit of Cuddapah – Thiruvalam 765 kV D/c line (fault persisted for 100 ms)
10. Single Phase to Ground Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Cuddapah – Thiruvalam 765 kV D/c line
11. Three Phase Fault close to 765 kV bus of Davanagere PS followed by tripping of one circuit of Davanagere – Madhugiri 765 kV D/c line (fault persisted for 100 ms)
12. Single Phase to Ground Fault close to 765 kV bus of Davanagere PS followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Davanagere – Madhugiri 765 kV D/c line
13. Three Phase Fault close to 765 kV bus of Davanagere PS followed by tripping of one circuit of Davanagere – Narendra New 765 kV D/c line (fault persisted for 100 ms)

14. Single Phase to Ground Fault close to 765 kV bus of Davanagere PS followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Davanagere – Narendra New 765 kV D/c line

Contingency at 400 kV level

15. Three Phase Fault close to 400 kV bus of Ananthapuram-II PS followed by tripping of one 765/400kV ICT at Ananthapuram-II PS (fault persisted for 100 ms)
16. Three Phase Fault close to 400 kV bus of Ananthapuram-II PS followed by tripping of one 400/220kV ICT at Ananthapuram-II PS (fault persisted for 100 ms)
17. Three Phase Fault close to 400 kV bus of Ananthapuram-II PS followed by tripping of 1 GW generation at Ananthapuram-II PS (fault persisted for 100 ms) – Generation outage case

B) N-1-1 Contingency

Contingency at 765 kV level

18. Case 1 & 2 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Ananthapuram-II PS followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Ananthapuram-II PS – Cuddapah 765 kV D/c line) and successful re-closure (dead time 1 second)
19. Case 3 & 4 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Ananthapuram-II PS followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Ananthapuram-II PS – Davanagere 765 kV D/c line) and successful re-closure (dead time 1 second)
20. Case 5 & 6 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Chilakaluripeta – Cuddapah 765 kV D/c line) and successful re-closure (dead time 1 second)
21. Case 7 & 8 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Kurnool New – Cuddapah 765 kV D/c line) and successful re-closure (dead time 1 second)
22. Case 9 & 10 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Cuddapah – Thiruvalam 765 kV D/c line) and successful re-closure (dead time 1 second)
23. Case 11 & 12 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Davanagere PS followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Davanagere – Madhugiri 765 kV D/c line) and successful re-closure (dead time 1 second)
24. Case 13 & 14 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Davanagere PS followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Davanagere – Narendra New 765 kV D/c line) and successful re-closure (dead time 1 second)

SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION

The communication requirement shall be in accordance to CEA (Technical Standards for Communication System in Power System Operations) Regulations, 2020, CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022, CERC (Communication System for inter-State transmission of electricity) Regulations, 2017, CEA (Cyber Security in Power Sector) Guidelines, 2021, CERC Guidelines on "Interface Requirements" 2024 and all above documents as amended from time to time.

The communication services viz. SCADA, AGC (wherever applicable), VoIP, AMR and PMU have been identified as critical services and therefore shall be provisioned with 2+2 redundancy i.e. 2 channels for Main Control Centre and 2 channels for Backup Control Centre. In order to meet this requirement, suitable redundancy at port and card level need to be ensured by the TSP to avoid any single point of failure which may lead to interruption in real-time grid operation.

PMU to PDC communication (wherever required) shall be through 2 channels to the PDC (main) as there is no backup PDC at present.

Accordingly, all the hardware for communication services of station as stated above shall support dual redundancy for data transmission of station to respective main and backup RLDCs.

The complete ISTS communication system commissioned by TSP under the RFP shall be the asset of ISTS and shall be available for usage of ISTS requirements as suggested by CTU from time to time.

In order to meet the requirement for grid management and operation of substations, Transmission Service Provider (TSP) shall provide the following:

D.1.0 Establishment of 765/400/220 kV Ananthapuram-II PS

I. TSP shall supply, install and commission 2 no. FODP (96F or higher) and 1 no. FODP (48F or higher) along with panel and approach Cable (24F each) with all associated hardware fittings from gantry tower to Control Room for all the incoming lines envisaged under the present scope.

II. TSP shall supply, install and commission One or more STM-16 (FOTE) equipment along with panel/s supporting minimum Ten (10) directions with MSP (Multiplex Section Protection – 1+1). These directions shall exclude protected (1+1) local patching among equipment (if any). TSP shall provide the Communication Equipment with necessary interfaces to meet the voice and data communication requirement between Ananthapuram-II PS and Davanagere PS, Ananthapuram-II PS and Cuddapah S/s. out of 10 directions, TSP shall provide Six (6)directions in the FOTE for 6 no. of upcoming RE Generators/ other entity (at 220 kV Bays), however required optical interfaces shall be provided by these RE Generators/ Other entities at the time of connectivity with Ananthapuram-II PS. The suitable DC Power Supply and backup to be provided for communication equipment.

III. FODP and FOTE equipment with panels shall be provided in Control Room of Ananthapuram-II PS. FOTE and FODP Equipment can be accommodated in same panel to optimize space.

IV. TSP shall supply, install and commission Firewall in redundant mode (1+1) in line with the specification attached at **Annexure F.1**.

V. The maintenance of all the communication equipment and software thereof including FOTE, FODP, PMU, approach cable, DCPS along with Battery Bank and Firewall shall be the responsibility of TSP.

D.2.0 Ananthapuram-II – Davangere 765 kV D/C line

I. On Ananthapuram-II – Davangere 765 kV D/C line, TSP shall supply, install and commission One (1) no. OPGW cable containing 24 Fibres (24F) on one E/W peak and conventional earth wire on other E/W peak.

II. The TSP shall install this OPGW from gantry of Ananthapuram-II S/s up to the gantry of Davangere S/s with all associated hardware including Vibration Dampers, mid-way and gantry Joint Boxes (called **OPGW Hardware** hereafter) and finally terminate in Joint Boxes at end Substations. The transmission line length is **150 kms (approx.),** where repeater may not be required to meet the link budget requirement of Ananthapuram-II – Davangere 765 kV D/C link.

III. Maintenance of OPGW Cable and OPGW Hardware shall be responsibility of TSP.

D.3.0 Ananthapuram-II – Cuddapah 765 kV D/C line

I. On Ananthapuram-II – Cuddapah 765 kV D/C line, TSP shall supply, install and commission One (1) no. OPGW cable containing 24 Fibres (24F) on one Earth Wire peak and conventional earth wire on other Earth Wire peak.

II. The TSP shall install this OPGW from gantry of Ananthapuram-II PS up to the gantry of Cuddapah S/s with all associated hardware including Vibration Dampers, mid-way and gantry Joint Boxes (called **OPGW Hardware** hereafter) and finally terminate in Joint Boxes at end Substations. The transmission line length is **200 kms (approx.),** where repeater may not be required to meet the link budget requirement of Ananthapuram-II – Cuddapah 765 kV D/C link,

III. Maintenance of OPGW Cable and OPGW Hardware shall be responsibility of TSP.

D.4.0 FOTE requirement at Davangere PS

I. TSP shall supply, install and commission 1 no. FODP (72F or higher) alongwith panel and required Approach Cable (24F) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control room.

II. TSP shall supply, install and commission One STM-16 (FOTE) equipment alongwith panel/s supporting minimum Three (3) directions with MSP (Multiplex Section Protection – 1+1) with necessary interfaces to meet the voice and data communication requirement between Davangere PS and Ananthapuram-II S/s and local patching with Control Room FOTE. The suitable DC Power Supply and backup to be provided for communication equipment.

III. FOTE/FODP panel shall be installed in the new Bay Kiosk (Switchyard Panel Room (SPR)). The FOTE under present scope shall be integrated by TSP with the existing FOTE at control room of **Davangere PS** which shall be communicating with respective control center. TSP to provide necessary FODP sub rack / Splice trays/ Patch cords etc. and optical interfaces/equipment in the existing FOTE/FODP panels in control room for integration with the existing FOTE for onwards data transmission.

In case spare optical direction is not available in the existing FOTE at the control room, the TSP shall coordinate with station owner to reconfigure the directions in existing FOTE at control room. Alternatively, The TSP may integrate the FOTE under the present scope with existing FOTE in the nearby Kiosk connected to the control room FOTE (if available with spare direction). For this purpose, TSP shall provide necessary FODP sub rack / Splice trays/ Patch cords etc. and suitable optical interfaces/ equipment in the existing FOTE/FODP panels in another Kiosk (SPR).

IV. FOTE and FODP can be accommodated in same panel to optimize space.

V. The maintenance of all the communication equipment and software thereof including FOTE, FODP, approach cable, PMU, DCPS alongwith Battery Bank shall be the responsibility of TSP.

D.5.0 FOTE requirement at Cuddapah (PG) S/s

I. TSP shall supply, install and commission 1 No . FODP (72F or higher) alongwith panel and required Approach Cable (24F) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control room.

II. TSP shall supply, install and commission One STM-16 (FOTE) equipment alongwith panel/s supporting minimum Three (3) directions with MSP (Multiplex Section Protection – 1+1) with necessary interfaces to meet the voice and data communication requirement between Cuddapah S/s and Ananthapuram-II S/s and local patching with Control Room FOTE. The suitable DC Power Supply and backup to be provided for communication equipment.

III. FOTE/FODP panel shall be installed in the new Bay Kiosk (Switchyard Panel Room (SPR)). The FOTE under present scope shall be integrated by TSP with the existing FOTE at control room of **Cuddapah S/s** which shall be communicating with respective control center. TSP to provide necessary FODP sub rack / Splice trays/ Patch cords etc. and optical interfaces/equipment in the existing FOTE/FODP panels in control room for integration with the existing FOTE for onwards data transmission.

In case spare optical direction is not available in the existing FOTE at the control room, the TSP shall coordinate with station owner to reconfigure the directions in existing FOTE at control room. Alternatively, The TSP may integrate the FOTE under the present scope with existing FOTE in the nearby Kiosk connected to the control room FOTE (if available with spare direction). For this purpose, TSP shall provide necessary FODP sub rack / Splice trays/ Patch cords etc. and suitable optical interfaces/ equipment in the existing FOTE/FODP panels in another Kiosk (SPR).

IV. FOTE and FODP can be accommodated in same panel to optimize space.

V. The maintenance of all the communication equipment and software thereof including FOTE, FODP, approach cable, PMU, DCPS alongwith Battery Bank shall be the responsibility of TSP.

D.6.0 Specific Requirement for Phasor Measurement Units (PMUs)

TSP shall supply, install and commission required no. of Phasor Measurement Units (PMUs) at all the locations under the scope this RFP as per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 (alongwith all amendments if any) and all the applicable Regulations, Standards, Guidelines issued time to time. The signal list shall be as per the Annexure-I Part-B of **CERC Guidelines on "Interface Requirements" 2024.** PMUs also to be provided at **STATCOMs** locations. These PMUs shall be provided with GPS clock and LAN switch and shall connect with LAN switch of control room of respective substations/ generating stations with Fibre Optic cable. These PMUs shall be connected with the FOTE at Substation/ generating stations for onwards data transmission to the PDC (Phasor Data Concentrator) located at respective RLDC. Configuration work in existing PDC at RLDC for new PMU integration shall be done by respective RLDC, however all the necessary support in this regard shall be ensured by TSP. The maintenance of all the PMUs and associated equipment shall be the responsibility of TSP.

Note: Existing Station owner/s to provide necessary support to integrate different equipment and applications of new extended bays with the existing substation e.g. Communication (through FOTE), Voice etc. for smooth operation and monitoring of new added grid elements.

Proposed Communication for ***"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"***

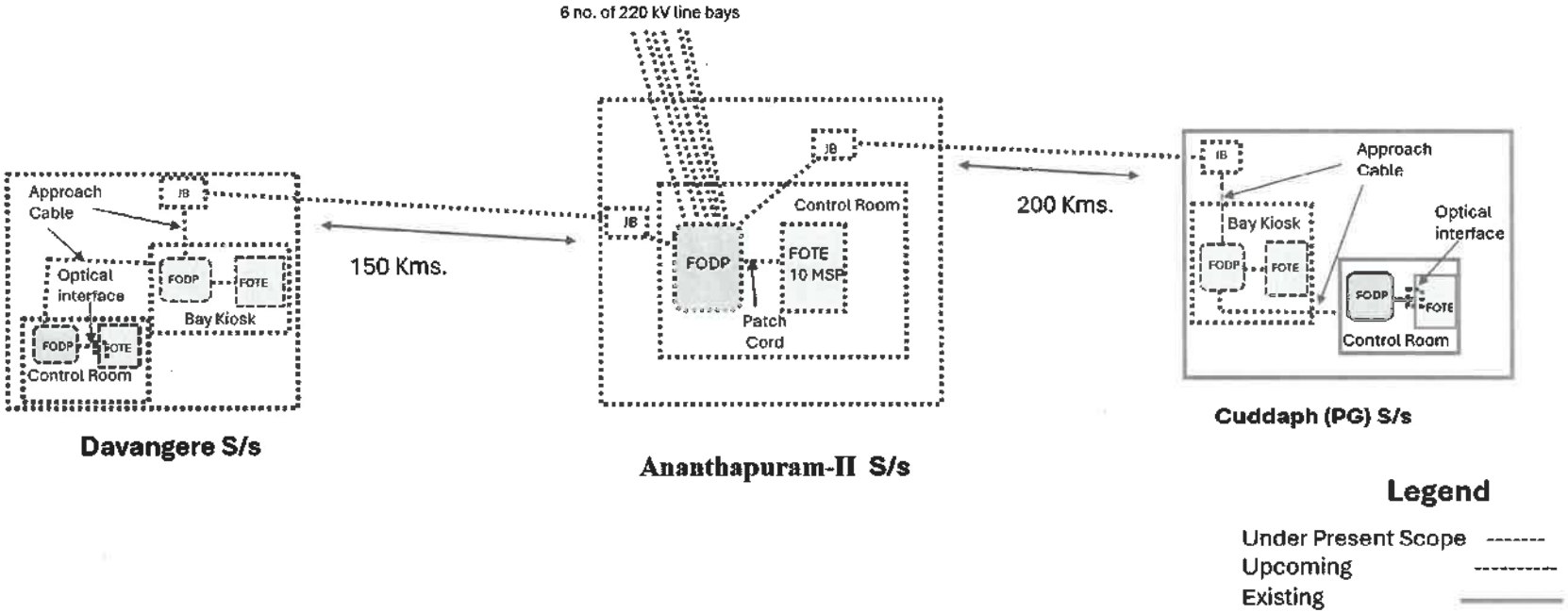


Figure F.1

Annexure-F.1

Next Generation Firewall (NGFW)

TSP shall provide 2 NGFW one in Main and another in Standby mode having electrical ethernet interfaces/ports and placed between FOTE and SAS gateway/s at the substation. All ethernet based applications shall be terminated in the firewall ports directly (e.g. PMU, AMR, VOIP, SAS/SCADA etc.). Each port of firewall shall work as a separate zone. Firewall shall be hardware based with features of Block/Allow/drop and IPSec VPN (network encryption).

The number of ports/interfaces in each firewall (i.e. Main and Standby) shall be minimum 16 Nos. TSP shall provide either single firewall or multiple firewalls to meet this interfaces requirement, each for main as well as standby firewall. Minimum throughput of firewall shall be 300 Mbps.

The Firewall shall be managed/ configured as standalone at present and shall also have compatibility to manage/configure through Centralized Management Console (CMC) remotely in future.

Firewall shall be tested and certified for ISO15408 Common Criteria for least EAL4+. Further, the OEM must certify that it conforms to Secure Product Development Life Cycle requirements as per IEC62443-4-1. The firewall shall generate reports for NERC-CIP Compliance.

The specifications for the firewalls are given at **Annexure-F.2** and schematic diagram showing firewall placement given at **Figure F.2.**

Annexure F.2

Specifications of Next Generation Firewall (NGFW)

1. NGFW shall have following features including but not limited to:
   Encryption through IPSec VPN (Virtual Private Network), Deep Packet Inspection (DPI), Denial of service (DoS) and Distributed Denial of Service (DDoS) prevention, Port Block/ Allow, rules/ policies for block/allow, IP (Internet Protocol) and Media Access Control (MAC) spoofing protection, threat detection, Intrusion Prevention System (IPS), Anti-Virus, Anti-Spyware, Man In The Middle (MITM) attack prevention.
2. The proposed firewall shall be able to handle (alert, block or allow) unknown /unidentified applications e.g. unknown TCP and UDP packets. It shall have the provision to define application control list based on application group and/or list.
3. Firewall shall have feature and also have capability to update the definition/ Signatures of Anti-Virus online as well as offline. Firewall shall also be compatible to update the definitions/signatures through CMC. There shall be a defined process for security patching and firmware up-gradation. There shall be a feature to field validate firmware checksum. The same shall also be validated before using the OEM provided file/binary in the process of firmware up-gradation and security patching
4. Firewall shall have Management Console port to configure remotely.
5. Firewall shall be EMI/EMC compliant in Substation environment as per IEC 61850-3.
6. Firewall shall be rack mounted in existing standard equipment cabinets.
7. Firewall shall have support of SCADA applications (IEC-60870-5-104), ICCP, PMU (IEEE C37.118), Sub-Station Automation System (IEC 61850), Ethernet and other substation environment protocols.
8. Client based Encryption/ VPN must support different Operating System platforms e.g. Windows, Linux and Mac.
9. The solution must have content and comprehensive file detection policies, blocking the files as function of their types, protocols and directions.
10. Firewall shall have logging facility as per standard logs/events format. Firewall shall have features to export the generated/stored logs/events in csv (Comma Separated Value) and also any other standard formats for offline usage, analysis and compliance. Firewall shall have suitable memory architecture and solution to store and be enable to export all logs/events for a period of last 90 days at any given time.

11. Firewall shall have features and be compatible with local as well as central authentication system (RADIUS, LDAP, or TACACS+) for user account and access right management. It shall also have Role Based User management feature.
12. Firewall shall have the capability to configure sufficient number of VLANs.
13. Firewall shall have the capability to support sufficient number of sessions.
14. Firewall shall have provision to configure multiple IP Sec VPNs, at least 100 Nos., (one-to-many or many-to-one). Shall support redundant operation with a similar router after creation of all the IP Sec VPN. IPSec VPN shall support encryption protocols as AES128, AES256 and hashing algorithms as MD5 and SHA1. IPSec VPN throughput shall support at least 300 Mbps
15. Firewall shall be capable of SNMP v3 for monitoring from Network Management system. It shall also have SNMPv3 encrypted authentication and access security
16. Firewall shall support in Active/Passive or Active-Active mode with High Availability features like load balancing, failover for firewall and IPsec VPN without losing the session connectivity.
17. Firewall should have integrated traffic shaping (bandwidth, allocation, prioritisation, etc.) functionality
18. Shall support simultaneous operation with both IPv4 and IPv6 traffic
19. Firewall shall be compatible with SNTP/NTP or any other standards for clock synchronization
20. Firewall shall have the features of port as well as MAC based security
21. Firewall shall support exporting of logs to a centralized log management system (e.g. syslog) for security event and information management.
22. Firewall time shall be kept synchronised to official Indian Timekeeping agency, time.nplindia.org.
23. Firewall product shall be provided with all applicable updates at least until 36 months since the applicable date of product shipping to the concerned utility.

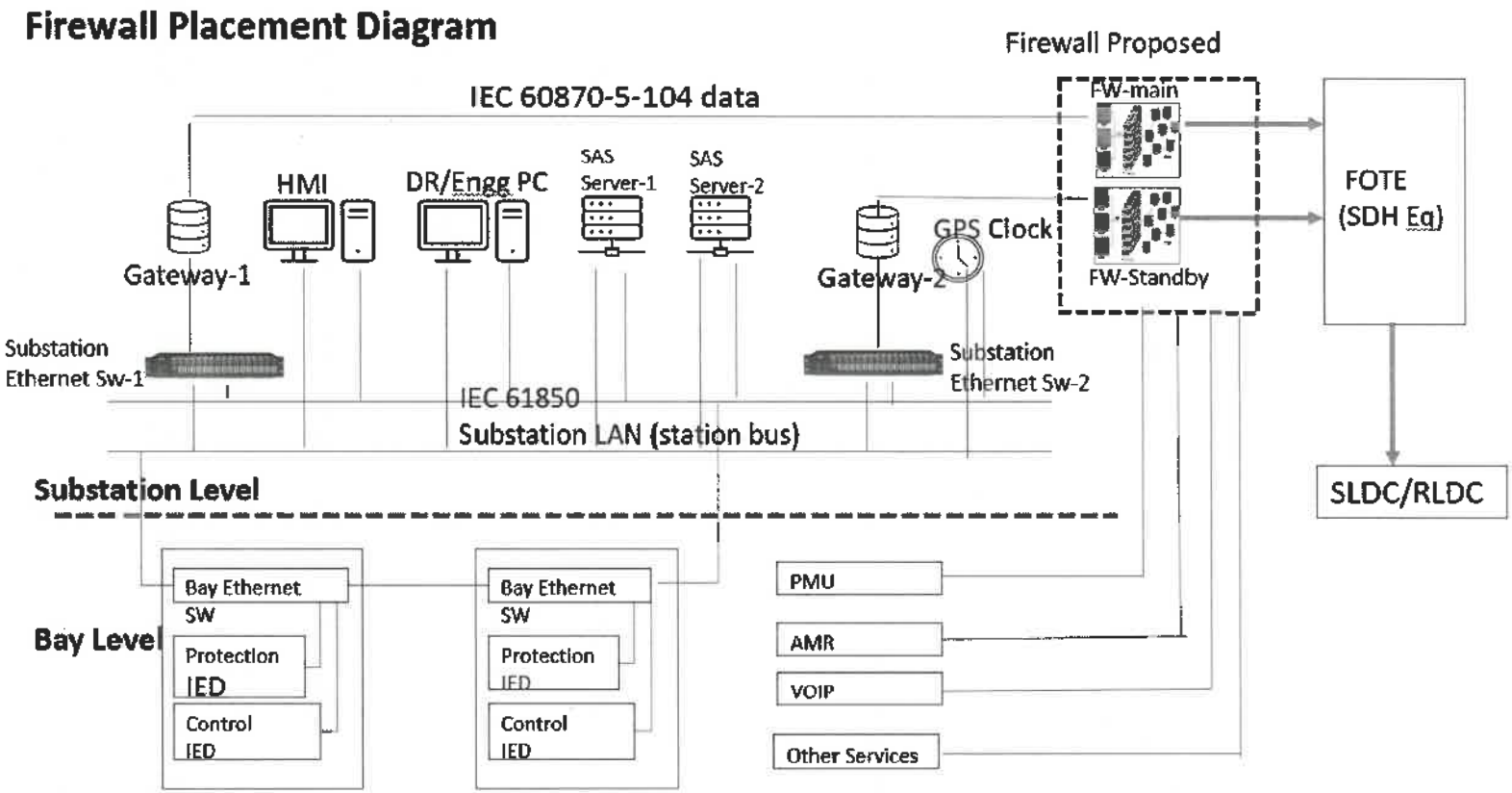

Firewall Placement Diagram
Firewall Proposed
IEC 60870-5-104 data
FW-main
FW-Standby
FOTE
(SDH Eq)
SLDC/RLDC
HMI
DR/Engg PC
SAS
Server-1
SAS
Server-2
GPS Clock
Gateway-1
Gateway-2
Substation
Ethernet Sw-1
Substation
Ethernet Sw-2
IEC 61850
Substation LAN (station bus)
Substation Level
Bay Level
Bay Ethernet
SW
Protection
IED
Control
IED
Bay Ethernet
SW
Protection
IED
Control
IED
PMU
AMR
VOIP
Other Services

Figure F.2

D.7.0 PLCC and PABX:

Power line carrier communication (PLCC) equipment complete for speech, tele-protection commands and data channels shall be provided on each transmission line. The PLCC equipment shall in brief include the following: -

(i) Coupling device, Coupling filters, line traps, carrier terminals, protection couplers, HF cables, PABX (if applicable) and maintenance and testing instruments.

(ii) At new substation, a telephone exchange (PABX) of 24 lines shall be provided at as means of effective communication among various buildings of the substation, remote end substations and with control centres (RLDC/SLDC) etc.

(iii) Coupling devices shall be suitable for phase-to-phase coupling for 400kV Transmission lines. The pass band of coupling devices shall have sufficient margin for adding communication channel in future if required. Necessary protection devices for safety of personnel and low voltage part against power frequency voltages and transient over voltage shall also be provided.

(iv) The line traps shall be broad band tuned suitable for blocking the complete range of carrier frequencies. Line Trap shall have necessary protective devices such as lightning arresters for the protection of tuning device. Decoupling network consisting of line traps and coupling capacitors may also be required at certain substation in case of extreme frequency congestion.

(v) The carrier terminals shall be of single side-band (SSB) amplitude modulation (AM) type and shall have 4 kHz band width. PLCC Carrier terminals and Protection couplers shall be considered for both ends of the line.

(vi) PLCC equipment for all the transmission lines covered under the scheme shall be provided by TSP. PLCC to be provided for following lines under present scope:

Sl. No	Line name	PLCC configuration
1	Ananthapuram-II – Davangere 765 kV D/C line	1 set Analog PLCC + 1 set Digital Protection Coupler for each circuit at both ends.
2	Ananthapuram-II – Cuddapah 765 kV D/C line	1 set Analog PLCC + 1 set Digital Protection Coupler for each circuit at both ends.

Further, CVT and Wave trap for all 765kVand220kV line bays under present scope shall be provided by TSP.

(vii) All other associated equipment like cabling, coupling device and HF cable shall also be provided by the TSP.

(viii) Two (2) sets of 48 V battery banks for PLCC and communication equipment shall be provided at each new Substation with at least 10-hour battery backup and extended backup, if required.

Annexure – E

SPECIFIC TECHNICAL REQUIREMENTS FOR INTEGRATION OF COMMUNICATION EQUIPMENT WITH REGIONAL LEVEL NMS / REGIONAL UNMS:

The new communication equipment/ system for all the substations under the present scope shall be compatible for integration with existing regional level NMS system/ Centralized Supervision and Monitoring System (CSMS) i.e. Regional UNMS. The local configuration of the new communication equipment at the station end shall be the responsibility of TSP as per **Annexure E.1**. The configuration work in the existing centralized NMS/ CSMS at Control center end, for integration of new Communication equipment/ system shall be done by Regional ULDC Team/ NMT, however all the necessary support in this regard shall be ensured by TSP.

Annexure E.1

Requirement for integration of Communication Equipment with Regional UNMS:

1. TSP shall ensure that NMS/EMS/NE supplied by them is NBI compliant and all FCAPS functionality is supported in the NBI such as NE Inventory, Hardware Inventory – Shelf/Slot/Card/SFP/Port, Topology, Protections, Alarms, Performance- real time and periodic, Performance KPI parameters (E-1, STM, Ethernet) , Remote Configuration, Cross Connects, Trails and Circuits, Services Provisioning (NE), E-1 , STM, Ethernet , TX and RS Trace, loop back and details are published in the NBI guide for the configuration parameters.

2. TSP shall be obliged to provide/share all necessary documentations such as NBI Guide/MIB/IDL/WSDL/API files/ etc. for onward integration of their NMS/EMS/NE with regional UNMS.

3. The following support shall be provided by TSP for integration of their supplied equipment with regional UNMS:

    - Enabling and activating NBI license in their EMS/NMS and providing NBI login access along with User credentials
    - Assist in verifying NBI Connectivity with UNMS vendor for the successful communication and retrieval of data.
    - Assist in troubleshooting (if required) for NBI connectivity along with UNMS vendor for the communication and retrieval of data.

4. For standalone NE which is not integrated with any EMS/NMS, TSP shall provide modality of complete FCAPS data acquisition as above through industry standard programmatic methods and provide the CLI command manual.

Annexure-F

Frequently Asked Queries:

1.0 Transmission Line:

1.1 Please clarify that whether shutdowns for crossing of existing transmission lines of POWERGRID/STUs/ Power Evacuation Lines from Generation Plants/ Any other Transmission Licensee will be given to TSP on chargeable basis or free of cost.

Reply: Shutdowns for crossing of existing transmission lines of POWERGRID/ STUs/ Power Evacuation Lines from Generation Plants/ Any other Transmission Licensee will be given to TSP by the concerned owner of the lines as per their own terms & conditions. As far as shutdown of ISTS lines are concerned the same can be availed by approaching respective Regional Power Committee.

1.2 We understand that the suggested swing angle criteria are applicable for Suspension Insulator in Suspension Tower. Further, you are requested to provide similar swing angle and clearance criteria for Pilot Insulator with Jumper & Jumper.

Reply: It is clarified that the swing angle criteria (as mentioned in RFP) for transmission lines is applicable for Suspension Insulator in Suspension Tower. Further, as per Clause 3.0 of Specific Technical Requirements for transmission lines, Transmission service Provider (TSP) shall adopt any additional loading/design criteria for ensuring reliability of the line, if so desired and /or deemed necessary.

1.3 We request you to kindly allow that use of diamond configuration at Power line crossings and the existing owner of the lines may be directed to allow the same for the successful bidders.

Reply: Power line crossing including Diamond configuration is responsibility of the TSP. TSP shall formally submit the profile of the crossing section to the owner of the existing line suggesting proposed crossing alternatives. The crossing will have to be carried out as per approval of owner of the existing line.

1.4 It is requested you to kindly provide present status of Forest Clearances if any transmission line corridor area falling in wildlife forest / reserve forest/ mangroves

Reply: Based on the preliminary route survey, the process of initiation of forest clearance for the forest stretches, if any, enroute the proposed line alignment will be initiated by way of writing letters to the concerned authority (ies). However, it may be noted that it will be the responsibility of TSP for obtaining forest clearance for the forest stretches as provided in the survey report and also for any forest area encountered during detailed survey.

1.5 For transmission line, no special requirement is specified for type of Insulator and creepage in RFP document. Hence it is understood that bidder can decide the type of insulator along with creepage requirement based on general CEA regulations and relevant standards. Kindly confirm.

Reply: The minimum specific creepage distances shall be decided for the pollution condition in the area of installation. It shall be as per CEA regulations and relevant standards.

2.0 Substation

2.1 We understand that space for storage of O&M spare shall be provided by existing owner within the station boundary without any cost. Kindly confirm.

Reply: Space for storage of O&M spares shall be arranged by TSP on its own.

2.2 We presume that the O&M for the end Termination bays will be in the scope of the TSP and TSP shall not be liable for any payment towards O&M to the existing owner of the substation. Kindly confirm.

Reply: Operation and maintenance of the bays is solely responsibility of the TSP. TSP shall follow CEA's "Operation and Maintenance (O&M) guidelines and Standard Format for Memorandum of Understating between New TSP and Existing TSP" issued by CEA vide its letter No. I/28514/2023 dated 22.06.2023.

2.3 With reference to subject scheme of existing sub-station, we assumed following scope of work:

(a) We assumed internal road is available and need not to consider in the present scope of work.
(b) Drainage is available and need not to consider in the present scope of work.
(c) Cable trench extension in adjacent to Main cable trench only under present scope of work.
(d) Levelled area being provided by developer for bay extension.

Reply: Regarding requirement of internal road, drainage, cable trench, leveling of the bay extension area, bidder is advised to visit site and acquaint themselves with the provisions/facilities available at substation.

2.4 Kindly provide the soil investigation report of soil parameters of existing substation.

Reply: Bidder is advised to visit the substation site and ascertain the requisite parameters.

2.5 Kindly confirm, energy accounting of aux. power consumption. Whether it will be on chargeable basis or part of transmission loss.

Reply: It will be on chargeable basis.

2.6 We understand that VMS requirement is for unmanned stations only. For Manned stations VMS is not compulsory.

Reply: VMS shall be provided in line with requirements of RfP document.

2.7 It is understood that Construction water and power shall be provided free of cost to TSP by respective substation owner for construction of new bays.

Reply: Arrangement of construction power & water is in the scope of TSP.

2.8 It is understood that existing fire hydrant system shall be extended by the TSP for bay extension.

Reply: Existing fire hydrant system shall be extended from existing system (if required)

2.9 Please clarify that Status of land acquisition for Substations. Whether the lands have been acquired by BPC and will be transferred to TSP.

Reply: The acquisition of land for substation is in the scope of TSP.

2.10 We understood that no any dedicated metering CT & CVT required for Line/feeders. Further, we understood that requisite Energy meters for various 765 kV, 400 kV & 220 kV Feeders shall be provided & installed by CTU free of cost to TSP.

Reply: Dedicated metering CT and CVT are not required for line/feeders. Metering core of existing CT/CVT can be used provided accuracy class is matching with metering requirement. Requisite Special Energy Meters shall be provided and installed by CTU at the cost of TSP in C&P panel subject to space availability, else, in separate metering panel (to be provided by TSP at its cost).

2.11 A draft copy of the Connection Agreement may be furnished. A draft copy of the Connection Agreement may be furnished.

Reply: Web page link https://www.ctuil.in/formats_gna_transition

2.12 Please clarify whether the spare 765 kV single phase Reactor unit for Bus reactor shall be provided with 1ph 765 kV CB.

Reply: As per RfP, the spare 1-Ph reactor unit shall be utilized for all the bus and switchable line reactor banks (including for future reactor banks). Hence, 1ph 765 kV CB shall also be provided with spare 1-Ph reactor for utilizing with bus reactor as well as switchable line reactor.

2.13 It is understood that existing busbar protection have provision for future bays and also PUs are available for future bays. BPC to confirm availability of CU and PU for bays under present scope of work at existing substations. BPC may kindly confirm availability of communication ports for integrating new PUs with the existing CUs at existing substations.

Reply: Bus Bar Protection with Central Unit (CU) is required for new bus section as specified in RfP. Peripheral Units (PUs) shall be provided by the respective bay owner. Further, augmentation/replacement of existing CU, if required, to meet the system requirement shall also be provided for proper functioning of bus bar protection.

2.14 For SCADA, it is understood that necessary process I/O shall be available for future bays and accordingly license for same. BPC to confirm.

Reply: Necessary process I/O along with license shall be in the scope of the successful bidder.

2.15 No separate FF system is envisaged under the present scope of work for existing substation. BPC to confirm.

Reply: Existing fire-fighting systems shall be extended to meet the additional requirements under present scope.

2.16 PLCC for 220 kV Lines are not under the scope of TSP. BPC to Confirm.It is requested to provide Type of Coupling for 220 kV Transmission Lines under present scope.

Reply: PLCC for 220 kV line is in the scope of developer of the line.
Inter circuit coupling for 220 kV D/C and phase to phase coupling for 220 kV S/C shall be applicable for PLCC.

2.17 BPC is requested to confirm the availability of space in the existing control rooms at existing substation for execution of extension work under current project.

Reply: Switchyard Panel Rooms are generally required for AIS type substation and relay room are required for GIS type substation. Further, if needed, control room shall be augmented as per requirement.

3.0 Communication

3.1 What are the usage of OPGW, FOTE, PMU etc. under communication requirement of RFP?

Reply: User shall be responsible for providing compatible equipment along with appropriate interface for uninterrupted communication with the concerned control center and shall be responsible for successful integration with the communication system provided by CTU.
Communication systems e.g. OPGW, FOTE etc. & PMU are required for grid operation through RLDC/SLDC, speech communication, tele-protection and tele-metering.

3.2 Is space for installation of communication panels are provided to TSP in existing Substations incase new bays are in the scope of TSP?

Reply: The space related issues are deliberated in the RfP itself. TSP to install FOTE/FODP panels in the new Bay Kiosk (Switchyard Panel Room (SPR)) / Bay Kisok/ Relay Panel Room (in case of GIS S/s). Further, TSP to connect and integrate the proposed FOTE with the existing FOTE in the control room to complete communication path upto RLDC.
In Case 132 kV Substation TSP shall accommodate the said panels either by extension of existing control room or other arrangements.

3.3 How is the OPGW laying done in case of LILO lines?

Reply: In case LILO lines are on same towers (e.g. both Line in and Line Out portion are on same towers, generally done LILO of S/C lines). Then 2x24F OPGW shall be required to install by TSP on both earthwire peak on 400 kV & 765 kV lines where two E/W peaks are available. On 220 & 132 kV lines where only one E/W peak is available TSP to install one no. 48F OPGW.

Incase LILO lines are on different towers (e.g. both Line in and Line Out portion are on different towers, generally done LILO of D/C lines). Then 1x24F OPGW shall be required to install by TSP on one earthwire peak and conventional earthwire on second earthwire peak, on both Line In and Line Out portion towers of 400 kV & 765 kV lines. On 220 &132 kV lines where only one E/W peak is available TSP to install one no. 24F OPGW in place of conventional earthwire.

3.4 How is the OPGW laying done in case Multi circuit Towers?

Reply: In case two different lines are using common multi circuit portion for some distance (originating from different stations, may be terminating on same or on different stations). Two no. 24F OPGW to be installed on both E/W peaks for common M/C portion of 765 kV & 400 kV lines.

Incase 220/132 kV lines using multi circuit portion where single E/W peak is available one no. 48F may be installed for common multi circuit portion.

3.5 How PMUs are integrated for new bays at existing Substations?

Reply: PMU data of new bays to be provided in the ethernet port of switch at control room and thereafter to be connected with existing FOTE of existing substation to send data to PDC of RLDC by TSP. These PMUs shall be provided with GPS clock and LAN switch and shall connect with LAN switch of control room of respective substations with Fibre Optic cable

3.6 Is Spare direction available in existing FOTE for integration with new bay kiosk FOTE

Reply: The FOTE under present scope shall be integrated by TSP with the existing FOTE at control room of substation for onwards data transmission.
In case spare optical direction is not available in the existing FOTE at the control room, the TSP shall coordinate with station owner to reconfigure the directions in existing FOTE at control room.

3.7 What is the distance from LILO point to proposed substation for feasibility of repeater station?

Reply: Tentative Location of LILO point shall be as per survey report of BPC however exact location to be ascertained after detailed survey by TSP.

3.8 What is the make and model of existing OPGW in case LILO of main line at new substation?

Reply: All OPGW (along with optical fibers) meet Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, 2020 and bidder shall install OPGW accordingly.

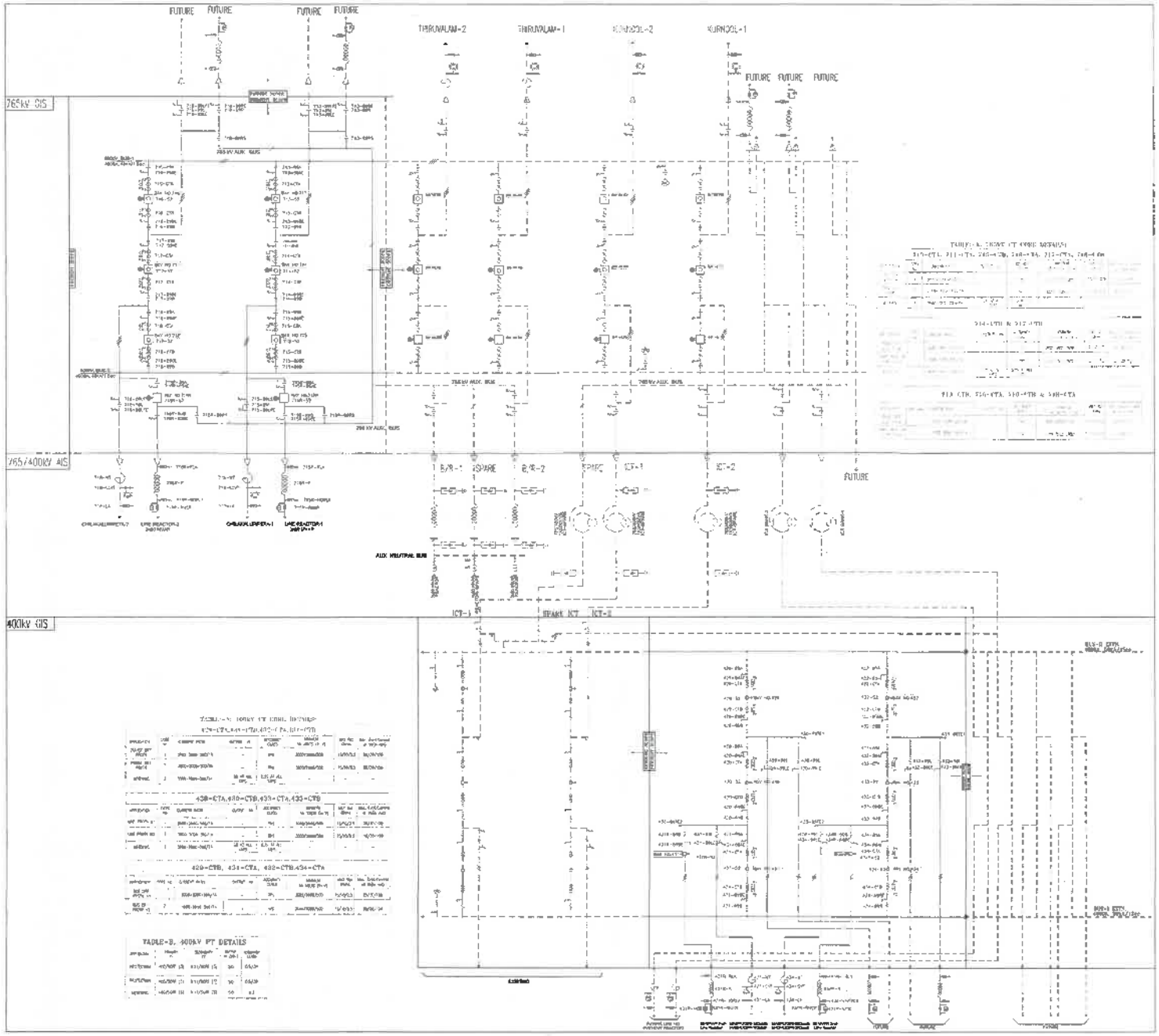
3.9 In case of LILO of existing line at new substation who shall provide PMUs at existing substation bays?

Reply: TSP to provide PMUs for all bays under their scope of RFP.

4.0 Planning :

4.1 Whether the Project/ Elements are eligible for early commissioning incentive as per MoP, GoI order dated 15.07.2015.?

Reply: Commissioning is to be done as per the timeline mentioned in RfP. However, early commissioning shall be treated as per applicable CERC Regulations/orders.



LEGEND

NOTES

POWER GRID CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CC-CS/709-SP.1/GIS-3391/3/G7/NOA-III/7055 DATED-27/10/2016 & CC-CS/709-SP.1/GIS-3391/3/G7/NOA-IV/7056 DATED-27/10/2016

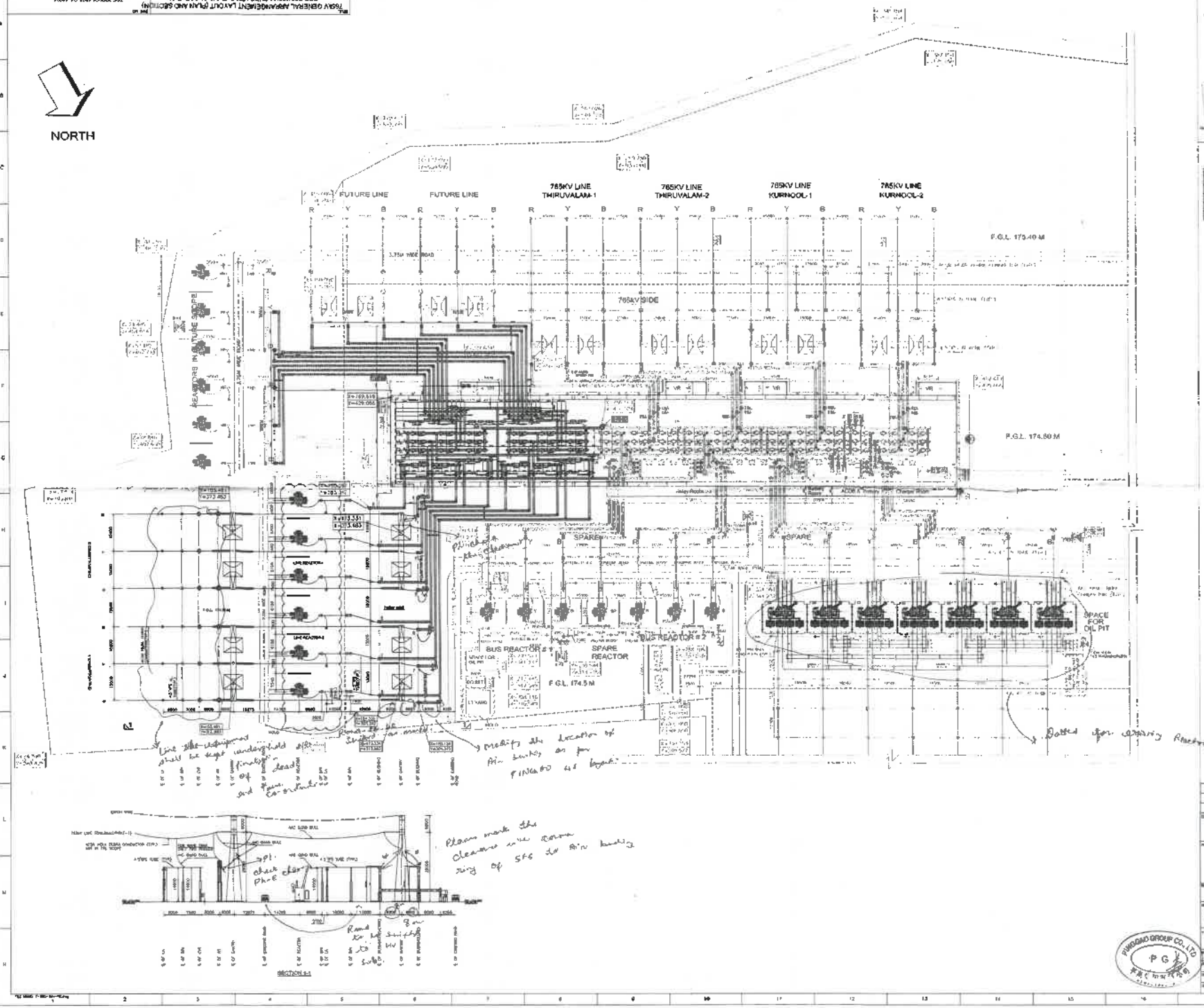
PINGGAO GROUP CO. LTD.

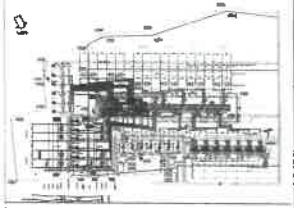
TATA PROJECTS LIMITED
TOWER-B, GROUND FLOOR, GREEN BOULEVARD, PLOT NO. 6-4th SECTOR-62, NOIDA

TATA CONSULTING ENGINEERS LIMITED, MUMBAI

SINGLE LINE DIAGRAM FOR CUDDAPHA 765/400kV GIS SUBSTATION-EXTENSION BAYS.

PINGGAO GROUP CO., LTD.





KEY PLAN

BOQ (TENTATIVE)

SYMBOL	DESCRIPTION	ACTUAL QTY.	BID QTY
◆	800 kV LA	12	13
◉	800 kV BPI	18	38
○	800 kV WT	04	04
⊕	800 kV CVT	08	08
⊞	800 kV BUS DUCT	(1145)	—

LEGENDS:

- EXISTING SCOPE
- EXISTING SCOPE
- FUTURE SCOPE

NOTES:

1. ALL THE DIMENSIONS ARE IN MM.
2. CONDUCTORS ON THE 765kV GANTRY WILL BE SUSPENDED. SHIELDED V-SHAPED COMPOSITE LONG ROD SUSPENSION INSULATORS.
3. M/S PINGAOD IS ENSURE THAT FUTURE DUCTS WILL NOT TRUE THE COLUMNS OF EXISTING GIS BUILDING AND IF THERE IS FOULING M/S PINGAOD WILL BE ROUTE THE DUCTS.

REFERENCE DRAWINGS:

1. 765kV GIS PLAN LAYOUT DRAWING PORT03/400 kV CUDDAPAH GIS SUBSTATION PC/PGCIL/CDP/DYN/765/PLAN/GIS-dwg/001-R2
2. OVERALL GENERAL ARRANGEMENT LAYOUT FOR 765 kV CUDDAPAH GIS SUBSTATION GWC-NO.-TCE-10302A-740-GA-3041
3. 765kV GIS BUILDING - ARCHITECTURAL PLAN GWC-NO.-TCE-10302A-CL-4007-AE-30003

POWER GRID CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

CC-CS/708-SR/GIS-3361/3427/NOV, 2018 & NOV/2018 BOTH DATED 27.10.2018 (SUPPLY & ERECTION) OR SHORE SUPPLY CONTRACT-B FOR SUBSTATION PACKAGE BB-02 FOR EXTENSION OF 765 & 400kV CUDDAPAH GIS UNDER SUB-STATION WORKS ASSOCIATED WITH STRENGTHENING OF TRANSMISSION SYSTEM BEYOND VEMAGIRI SPECIFICATION NO.: CC-CS/708 DR/GIS-3361/3427

PINGGAO GROUP CO. LTD.

TATA PROJECTS LIMITED
TOWER-1, FIRST FLOOR, GRAYA CENTER, PLOT NO. B-8
SECTOR-62, NOIDA

765kV GENERAL ARRANGEMENT LAYOUT (PLAN AND SECTION) FOR 765/400kV CUDDAPH EXT.GIS SUBSTATION

PINGGAO GROUP CO., LTD.

S. N.	Clause No. and Existing provision	Clarification required	Clarifications
1.	**RFP & TSA** **General**	We request you to clarify whether there are any deviations/addition in the RFP/TSA documents from the Standard Bidding documents (SBD) and if any, whether approval for the same has been taken or not. Please provide the list of the same, if any.	The RFP/ TSA Documents are as per the Standard Bidding Documents (SBDs) and subsequent amendments issued by the Ministry of Power, GoI.
2.	**RFP** **General**	Please let us know the status of Regulatory Approvals for the project. SPV Acquisition is linked to regulatory approval and it is very important to get the clearance before RFP Submission as this will impact the initiation of projects.	Transmission system is approved as per MoP Electricity (Transmission System Planning, Development and Recovery of Inter-State Transmission Charges) Rules, 2021. Regulatory approval in the scope of BPC, as per guidelines, would be shared with the successful bidder at the time of transfer of SPV.
3.	**RFP** **General**	We request you to let us know the status of TSA signing.	As per revised TBCB Guidelines and SBDs issued by MOP, TSP on the date of acquisition of SPV from the BPC will enter into a

		SPV Acquisition is linked to TSA Signing and it is very important to get the clearance before RFP Submission as this will impact the initiation of projects	Transmission Service Agreement (TSA) with the Nodal Agency i.e., CTUIL.
4.	**Clause 1.6.2.1 (2) of RFP** To obtain approval for laying of overhead transmission lines under Section 68 of Electricity Act, from the Government at least twenty (20) days prior to Bid Deadline.	It is requested you to kindly provide present status of process initiated by BPC with regard to section 68 approval.	Application to be filed to get approval for laying of Overhead Transmission Lines under Section 68. The same shall be shared with the successful bidder.
5.	**Clause 1.6.2.1 (4) of RFP** To initiate process of seeking forest clearance, if required.	It is requested you to kindly provide present status of Forest Clearances if any transmission line corridor area falling in wildlife forest / reserve forest/ mangroves.	Bidders may refer the Survey report in this regard which will be shared shortly with the bidders. Further, necessary applications/letters for forest clearances have been shared with the appropriate authorities to get necessary approval.
6.	**Clause 1.6.2.1 (2) of RFP** The details and documents as may be obtained by the BPC/ project specific SPV in relation to	Please provide copy of all such document available with you from the State Government and/or Ministry of	The necessary support shall be provided on case to case basis.

	the Project shall be handed over to the TSP on an as-is-where-is basis, so that it may take further actions to obtain Consents, Clearances and Permits.	Power and/or kindly facilitate for State Support Agreement.	
7.	**Clause 1.10 of RFP** The Ministry of Power and the appropriate state government(s) shall provide their support to the TSP, on best endeavor basis, in enabling the TSP to develop the Project.	We request you to share all such documents or correspondence happened with MOP and State Government, this will help the TSP is taking further approvals for the project.	The necessary documents shall be provided on case to case basis.
8.	**Clause 2.15.2 of RFP** Within ten (10) days of the issue of the Letter of Intent, the Selected Bidder shall: a) provide the Contract Performance Guarantee in favour of the Nodal Agency as per the provisions of Clause 2.12	BPC will appreciate that the completion of said activities by the Selected Bidder within ten (10) days after issuance of LoI is very stringent. Also, execution of SPV / signing of share purchase agreement is not within the control of TSP as it is dependent on certain regulatory approvals as well. We therefore	This is as per the Standard Bidding Documents. The provisions of RFP shall prevail.

	b) execute the Share Purchase Agreement and the Transmission Service Agreement c) acquire, for the Acquisition Price, one hundred percent (100%) equity shareholding of [Insert the name of the SPV] from PFC Consulting Limited, who shall sell to the Selected Bidder, the equity shareholding of [Insert the name of the SPV], along with all its related assets and liabilities;	request to consider at least 30 days' time for completion of these activities as well as provide a carve out for consequences if the delay is not on account of TSP.	
9.	**Clause 2.15.2 of RFP** Stamp duties payable on purchase of one hundred percent (100%) of the equity shareholding of [Insert the name of the SPV], along with all its related assets and liabilities, shall also be borne by the Selected Bidder.	We request you to provide Applicable Stamp Duty Charges and Amount of Stamp Paper for the following agreements: i. Transmission Service Agreement ii. Share Purchase Agreement iii. Power of Attorney iv. Share Transfer Form	As per the Delhi Stamp duty Schedule 1A, stamp duty payable on Share Purchase Agreements and Transmission Service Agreement respectively is Rs. 1,000/- and Rs.50; however, all such agreements also include separate agreements in respect of Arbitration, Indemnity, guarantee, etc. and stamp duty on these separate items are also considered for the total stamp duty payable. Therefore, based on these identified stamp duties and taking some extra ones, the stamp duty of Rs. 1200 and 500 has been considered for Share Purchase Agreements and Transmission Service

		It will be helpful if you can specify the name of 1st party and 2nd party for purchase of stamp papers.	Agreement, respectively. This is a customary practice and we are fine with the same. Three agreements will be signed in original, therefore separate stamp duty is payable on each of the agreement
10.	**Clause 2.15.4 of RFP** Within five (5) working days of the issue of the acquisition of the SPV by the Successful Bidder, the TSP shall apply to the Commission for grant of Transmission License and make an application to the Commission for the adoption of Transmission Charges, as required under Section – 63 of The Electricity Act 2003.	Clause 2.15.4 may be reworded as below - Within ten (10) working days of the issue of the acquisition of the SPV by the Successful Bidder, the TSP shall apply to the Commission for grant of Transmission License and make an application to the Commission for the adoption of Transmission Charges, as required under Section – 63 of The Electricity Act 2003. The condition to apply for grant of transmission license and make application for adoption of transmission charges within 5 days is onerous. Request to please change the	The provisions of RFP and TSA shall prevail.

		relevant provisions as per the suggested text in RFP and TSA	
11.	**Clause 2.15.5 of RFP** If the Selected Bidder / TSP fails or refuses to comply with any of its obligations under Clauses 2.15.2, 2.15.3 and 2.15.4, and provided that the other parties are willing to execute the Share Purchase Agreement and PFC Consulting Limited is willing to sell the entire equity shareholding of [Insert the name of the SPV], along with all its related assets and liabilities, to the Selected Bidder, such failure or refusal on the part of the Selected Bidder shall constitute sufficient grounds for cancellation of the Letter of Intent. In such cases, the BPC / its authorized representative(s) shall be entitled to invoke the Bid Bond of the Selected Bidder.	It is requested to kindly clarify as to what will be the consequences if the Selected Bidders fails to comply with any of Its obligations under 2.15.2, 2.15.3 and 2.15.3 due to reasons beyond the control of or not attributable to Selected Bidder / TSP. As the consequences for failure to comply the obligations under 2.15.2, 2.15.3 and 2.15.3 is the cancellation of Letter of Intent (LOI). We request you to reconsider the same as it would be unfair if LOI of selected bidder is cancelled due to reasons beyond its control.	This is as per the Standard Bidding Documents. The provisions of RFP shall prevail. Further, the provision for extension provided in Clause 2.15.2 of RFP document shall be applicable.
12.	**RFP** **2.6 Project Schedule**	BPC to provide the breakup of percentage of Quoted Transmission	The same shall be shared with bidders shortly.

		Charges recoverable on Scheduled COD of the Element of the Project.	
13.	**Clause 2.4.3 of RFP** The amendment to the RFP shall be notified to all the Bidders through the electronic bidding platform and shall be binding on them.	We understand that the BPC will also continue to share amendments / corrigendum through emails as per the current practice.	Amendments/Corrigendum are available on BPC website and same is also shared separately through email with the bidders.
14.	**Clause 3.6.1 of RFP** However, if no bid is received during the e-reverse bidding stage then the Bidder with lowest quoted initial transmission charges ("Initial Offer") during e-bidding stage shall be declared as the Successful Bidder, ……	We request you to clarify, if two or more bidders quote the same initial offer which turns out to be prevailing lowest levelized tariff and no further discount is offered by any bidder during e-reverse auction. In such case what will be the modality BPC will follow for award of project. BPC to confirm	If the Initial Offer for two or more bidders is same and no bids are quoted in e-RA, the instant case seems to be hypothetical however in such case the decision of the competent authority shall prevail.
15.	**RFP General**	We request you to kindly accept the Board resolutions passed by Management Committees formed by the Board of Directors of Bidding	The Board Resolutions passed by the Management Committee with duly authorized from the Board of Directors may be considered as per the provisions of RFP.

		Company and TEE / affiliate respectively and duly authorized by the Board of Directors for participation in various tenders issued by Govt. authorities in response to the RFP submission. The board meeting of Bidding Company / TEE may not be scheduled till RFP submission. Thus, we request you to kindly consider the board resolution passed by the management committee formed by the board of directors' w.r.t. Authorization from Bidding Company and TEE.	
16.	**RFP** **Annexure 22 – Format for Affidavit**	We understand that the declaration and details with respect to conviction and investigation is to be provided for Affiliate / Parent company of the Bidding company only if such an Affiliate / Parent company is being	The declaration and details with respect to Clause 2.1.9 of RFP is to be provided by the bidding company including Affiliate / Parent company of the Bidding company being used for meeting financial/technical qualification requirements as per Annexure 22 of the RFP document.

		used for meeting financial / technical qualification requirements.	
17.	**Article 3.3.1 of TSA**	If any of the conditions specified in Article 3.1.3 is not duly fulfilled by the TSP even within three (3) Months after the time specified therein, then on and from the expiry of such period and until the TSP has satisfied all the conditions specified in Article 3.1.3, the TSP shall, on a monthly basis, be liable to furnish to Central Transmission Utility of India Limited (being the Nodal Agency) additional Contract Performance Guarantee of Rs. 1.84 Crore (Rupees One Crore Eighty Four Lakh Only) within two (2) Business Days of expiry of every such Month. Such additional Contract Performance Guarantee shall be provided to Central Transmission Utility of India Limited (being the Nodal Agency) in the manner provided in Article 3.1.1 and shall become part of the Contract	The provisions of TSA are amply clear in this regard and shall prevail.

		Performance Guarantee and all the provisions of this Agreement shall be construed accordingly. Central Transmission Utility of India Limited (being the Nodal Agency) shall be entitled to hold and / or invoke the Contract Performance Guarantee, including such additional Contract Performance Guarantee, in accordance with the provisions of this Agreement. In view of the rationale provided here, it is requested to amend the provision regarding refund of additional CPG on fulfilment of Conditions Subsequent. Additional CPG shall be recovered for the non-fulfilment of Conditions Subsequent. However, this additional CPG is then forming part of CPG and is being retained by Nodal Agency. Considering the fact that additional CPG is consequential guarantee for	

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		performance related to condition subsequent, it is requested to review the provision and amend the provision to refund the additional CPG on fulfilment of Conditions Subsequent.	
18.	**Clause 1.6.1.5 of RFP** The TSP shall seek approval under Section 164 of Electricity Act, from CEA after acquisition of [Insert the name of the SPV], The approval shall be granted by CEA generally within 30 days but in no case later than 45 days from the date of receipt of application (complete in all aspects).	It is requested you to kindly clarify whether process of obtaining authorization U/s 164 of Electricity Act, 2003 would be initiated by BPC. It is suggested that BPC may initiate the process for obtaining approval U/s 164 based on the survey undertaken by BPC. It may be appreciated that obtaining approval U/s 164 takes considerable time. In the interest of timely completion of project, it is suggested that BPC may initiate the process U/s 164.	This is as per the Standard Bidding Documents. The provisions of RFP shall prevail. Further, as per the provisions of RFP, TSP shall initiate the process for obtaining approval U/s 164.
19.	**Article 4.4 of TSA** **Extension of Time**	TSP is required to obtain certain clearances/ approval such as authorization u/s 164, Forest clearance,	The provisions of TSA shall prevail.

		Grant of Transmission License and approval for adoption of tariff etc. In case if there is any delay in these approvals beyond stipulated time, such delay shall be considered for extension of SCOD of the project and any consequential increase in cost shall be allowed through appropriate adjustment in the tariff. Clearances/ approval such as authorization u/s 164, Forest clearance, Grant of Transmission License and approval for adoption of tariff are not within the control of TSP once it has been applied after fulfilling all the necessary compliance, any consequential delay is required to be allowed.	
20.	**Article 5.12 Extension of Time of TSA** The TSP acknowledges and agrees that it shall not be relieved from any of its obligations under this Agreement or be entitled to any extension	TSP cannot be burdened with impact of unsuitability of the site or transmission line route due to reasons beyond control. Therefore, suitable	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

	of time or any compensation whatsoever by reason of the unsuitability of the Site or Transmission Line route(s).	revision may be carried out in clause 5.1.2. There may be number of reasons for unsuitability of the site or transmission line route which are beyond control of the TSP. For such instances, suitable extension of time and appropriate adjustment in tariff shall be provided.	
21.	**Article 5.6 Site regulations and Construction Documents** The TSP shall abide by the Safety Rules and Procedures as mentioned in Schedule 3 of this Agreement The TSP shall retain at the Site and make available for inspection at all reasonable times copies of the Consents, Clearances and Permits, construction drawings and other documents related to construction.	Inspection of Construction drawings and other documents related to construction may be deleted from clause no. 5.6. Construction drawings and few specific documents may be proprietary/ confidential and is against commercial interest of the TSP.	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.
22.	**Article 6.4.1 of TSA**	If the TSP fails to achieve COD for any Element of the Project or for the Project	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

	Liquidated Damages for Delay in achieving COD of Project by TSP.	by SCOD, then the TSP is required to pay liquidated damages. It is noted that, Clause 6.4.1 of the TSA does not exclude delays caused due to a Force Majeure or Nodal Agency's default. This may well be a drafting oversight and may be clarified. The TSP should also not be liable to pay liquidated damages in the event the delay is not attributable to the TSP. Accordingly, it may be clarified that no damages will be payable in the event the delay is on account of Force Majeure or Nodal Agency's default.	
23.	**Article 11.3 Force Majeure** A 'Force Majeure' means any event or circumstance or combination of events and circumstances including those stated below that wholly or partly prevents or unavoidably delays an Affected Party in the performance of its obligations/ roles under this Agreement, but only if and to the extent that such events or circumstances are not within the reasonable	Underlined text may be added under Article 11.3 : A 'Force Majeure' means any event or circumstance or combination of events and circumstances including those stated below that wholly or partly prevents or unavoidably delays an Affected Party or makes performance	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

	control, directly or indirectly, of the Affected Party and could not have been avoided if the Affected Party had taken reasonable care or complied with Prudent Utility Practices:	of obligation commercially unviable for the Affected Party in the performance of its obligations/ roles under this Agreement, but only if and to the extent that such events or circumstances are not within the reasonable control, directly or indirectly, of the Affected Party and could not have been avoided if the Affected Party had taken reasonable care or complied with Prudent Utility Practices:	
24.	**Clauses of TSA and RFP** (Provision related to non-fulfilment of condition subsequent) 3.3.6 The Nodal agency, on the failure of the TSP to fulfil its obligations, if it considers that there are sufficient grounds for so doing, apart from invoking the Contract Performance Guarantee under para 3.3.3 may also initiate proceedings	The blacklisting of TSP for a period of 5 years for default, failure to complete conditions subsequent & annulment of award, and for indefinite period for error in online and physical submission is onerous and harsh on TSP. TSP's event of default covers a lot of activities, and if TSP fails to comply	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

	for blacklisting the TSP as per provisions of Article 13.2 of TSA. (Termination procedure for TSP event of default) 13.2 Further, the Nodal Agency may also initiate proceedings to blacklist the TSP & its Affiliates from participation in any RFP issued by BPCs for a period of 5 years. Provisions in RFP (Non fulfilment of Obligations by TSP post issuance of LoI and post acquisition of SPV) 2.15.8 The annulment of the award, under Clause 2.15.5 or 2.15.6 of this RFP, shall be sufficient grounds for blacklisting the bidder, whose award has been annulled, for a period of five years or more, as decided by the National Committee on Transmission, provided that the blacklisting shall be done only after giving the bidder an opportunity for showing cause.	with even one activity, TSP is at risk of getting blacklisted. Further, TSA provides discretionary right to Nodal agency to decide whether TSP would be blacklisted. In case of discrepancy in submission, it is requested that BPC shall seek clarification from bidder and upon failure to provide clarification and complete investigation only, should construe such activity as fraudulent practice. Hence it is requested to include blacklisting only in extreme cases and provide definite guidelines on Nodal Agency's right to blacklist bidders. Also in RFP, blacklisting for annulment of project award would be done by government, while in other cases it would done by Nodal Agency.	

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	(Discrepancy in online and physical submission of selected bidder) 3.6.1 In case, there is a discrepancy between the online submission and physical documents, the bid would be out rightly rejected and the bidder shall be construed to have engaged in the fraudulent practice as defined in Clause 2.19.3 with consequences as mentioned in Clause 2.19.2. Further, in such a case, the provisions of Clause 2.5.6	It is requested that blacklisting rights shall only reside with government.	
25.	**Clause 13.3 of TSA** **Procedure for Nodal Agency's non-fulfilment of Role** a. Upon the Nodal Agency not being able to fulfil its role under Article 4.2. the TSP may serve notice on the Nodal Agency, with a copy to CEA and the Lenders' Representative (a "TSP's Preliminary Notice"), which notice shall specify in reasonable detail the circumstances	13.3 Procedure for Nodal Agency's non-fulfilment of Role a. Upon the Nodal Agency not being able to fulfil its role under Article 4.2. the TSP may serve TERMINATION notice on the Nodal Agency, with a copy to CEA and the Lenders' Representative (a "TSP's Preliminary Termination Notice").	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

	giving rise to such non-fulfilment of role by the Nodal Agency.	The contract clauses as per TSA favours the Nodal Agency. All the termination rights are provided to Nodal Agency and the agreement does not provide the other party (TSP) right to terminate in case of default of Nodal Agency. In absence of termination right, TSP is at risk commercially, if Nodal agency fails to fulfil its assigned responsibilities, for example failure of Nodal Agency to pay the quoted transmission charges. Also, the methodology for computation of compensation to TSP, in case of mutual agreement to terminate, should be defined upfront.	
26.	**Clause 3.3.4 of TSA** In case of inability of the TSP to fulfil the conditions specified in Article 3.1.3 due to any Force Majeure Event, the time period for	3.3.4 In case of inability of the TSP to fulfil the conditions specified in Article 3.1.3 due to any Force Majeure Event, the time period for fulfilment of the condition subsequent as mentioned in	In such cases, provisions of Article 3.3.5 and Article 13.6.1 of TSA shall apply.

	fulfilment of the condition subsequent as mentioned in Article 3.1.3, may be extended for a period of such Force Majeure Event. Alternatively, if deemed necessary, this Agreement may be terminated by the Nodal Agency by giving a Termination Notice to the TSP, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement and the Contract Performance Guarantee shall be returned as per the provisions of Article 6.5.1. 4.4.2 In the event that an Element or the Project cannot be commissioned by its Scheduled COD on account of any Force Majeure Event as per Article11, the Scheduled COD shall be extended, by a 'day to day' basis for a period of such Force Majeure Event. Alternatively, if deemed necessary, the Nodal Agency may terminate the Agreement as per the provisions	Article 3.1.3, may be extended for a period of such Force Majeure Event. In case the Force Majeure Event continues even after a period of one hundred and eighty (180) days if deemed necessary, the Nodal Agency or TSP, upon mutual agreement may terminate the Agreement as per the provisions of Article 13.4 by giving a Termination Notice to the other party, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement and the Contract Performance Guarantee shall be returned as per the provisions of Article 6.5.1. 4.4.2 In the event that an Element or the Project cannot be commissioned by its Scheduled COD on account of any	

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	of Article 13.4 by giving a Termination Notice to the TSP, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement. 13.4 Termination due to Force Majeure 13.4.1 In case the Parties could not reach an agreement pursuant to Articles 3.3.4 and 4.4.2 of this Agreement and the Force Majeure Event or its effects continue to be present, the Nodal Agency shall have the right to cause termination of the Agreement. In case of such termination, the Contract Performance Guarantee shall be returned to the TSP as per the provisions of Article 6.5.1.	Force Majeure Event as per Article11, the Scheduled COD shall be extended, by a 'day to day' basis for a period of such Force Majeure Event. In case the Force Majeure Event continues even after a period of one hundred and eighty (180) days if deemed necessary, the Nodal Agency or TSP, upon mutual agreement may terminate the Agreement as per the provisions of Article 13.4 by giving a Termination Notice to the other party, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement. In case of delay in SCOD due to FM event, the provision gives discretionary right to Nodal Agency to terminate TSA after occurrence of FM	

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		event. There should be gestation period of at least 6 months after start of FM event. Post completion of 6 months, both parties may decide to terminate the contract on mutual agreement. In case of FM, there should not be any unilateral right to terminate. Also, the methodology for computation of compensation to TSP, in case of mutual agreement to terminate, should be defined upfront.	
27.	Clause 5.8 of TSA "Remedial Measures: The TSP shall take all necessary actions for remedying the shortfall in achievement of timely progress in execution of the Project, if any, as intimated by the Independent Engineer and/ or CEA and/ or the Nodal Agency. However, such intimation by the Independent Engineer and/ or CEA and/ or the Nodal Agency and the subsequent effect of such remedial measures carried out by the TSP shall not relieve the TSP of its obligations in the Agreement. Independent Engineer and/ or CEA	This is very stringent clause and provides for agreement termination at the subjective discretion of Nodal Agency. Request to modify the clause as: ..... If the shortfalls as intimated to the TSP are not remedied to the satisfaction of the CEA and/ or the Nodal Agency, it may refer the same to the Appropriate Commission for appropriate action.	This is as per the Standard Bidding Documents. No change is envisaged.

	and/ or the Nodal Agency may carry out random inspections during the Project execution, as and when deemed necessary by it. If the shortfalls as intimated to the TSP are not remedied to the satisfaction of the CEA and/ or the Nodal Agency, this Agreement may be terminated by the Nodal Agency by giving a Termination Notice to the TSP, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement."		
28.	**Clause 13.7.1 of TSA** If Agreement is terminated on account of Force Majeure Events, no requirement of any Element or Project during Construction, Nodal Agency's non-fulfilment of Role & TSP's Event of Default, the TSP shall be entitled for Termination Payment equivalent to valuation of Project Assets. Upon payment, the Nodal Agency shall take over the Project Assets.	Guidelines on valuation of project assets conducted should be provided to ensure there is no ambiguity. Further if TSA is terminated during operating period of project, guidelines on valuation of assets in such event to be provided.	This is as per the Standard Bidding Documents. The provisions of clause 18.2.e. of TSA shall prevail.
29.	**Clause 13.5 of TSA**	Guidelines on amendment of TSA in case of non-requirement of any element during construction should be	Valuation of project assets shall be done as per the prevailing industry practices. Please refer Clause No. 18.2.e. of TSA

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	13.5 Termination or amendment due to non-requirement of any Element or Project during construction 13.5.1 In case any Element or Project, which is under construction, is no longer required due to any reason whatsoever, the Nodal Agency may issue a notice to this effect to the TSP. 13.5.2 Nodal agency may also issue notice to the TSP seeking their response to the proposed termination/ amendment (as the case may be) of the Agreement. The Nodal Agency shall issue copy of such notice to Lenders. In the notice, Nodal Agency shall also include an assessment of the physical progress made by TSP in the Element/ Project (as the case may be) that is no longer required. 13.5.3 The TSP shall neither carry out further Investment nor carry out any work on the Element/ Project (as the case may be) that	clearly specified, especially the treatment of Quoted Transmission Charges and capital cost of element no longer required. For example, if 50% construction of an element is completed and that element is not required, how the TSP would be compensated for the capital cost of the element.	

	is no longer required after delivery of the notice. 13.5.4 After taking into account the comments of the TSP, the Nodal Agency may terminate the Agreement or amend it if both parties agree to the amendment.		
30.	Change in Law of TSA Inclusion of change in acquisition price in Change in Law	As SPV acquisition price is part of capital cost of project, any change in Acquisition price after bidding would directly affect the bidder commercially and it is totally beyond the control of TSP. Hence, it is requested to kindly allow change in acquisition price under CIL event.	The change in acquisition price to the extent as per Provisions under Clause No. 3.5 of Tariff Based Competitive Bidding Guidelines for Transmission Service issued on 10.08.2021 shall prevail.
31.	**Provisions of TSA** D)The TSP has agreed to make an application for a Transmission License to the Commission for setting up the Project on build, own, operate and transfer basis.	D)The TSP has agreed to make an application for a Transmission License to the Appropriate Commission for setting up the Project on build, own, operate and maintain basis. As per revised TSA, asset to be transferred to Nodal agency post 35 years (BOOT). The assets created would be Financial assets instead of	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

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		Fixed assets. Under IndAS accounting rules, depreciation of financial assets is not allowed. Further, TSP would be at risk of authorities levying 18% GST upfront on construction revenue recognized on COD. Higher taxation would impact the project economics eventually leading to higher tariff for the Consumers. Under BOOT model, asset condition may degrade towards end of concession period due to lack of incentive for developer to maintain the asset by incurring some capex. Hence it is requested to continue with the BOOM model.	
32.	**Clause 5.5.6 of TSA** For any delay in commissioning any critical Element(s), as identified in Schedule 1 & Schedule 2 of this Agreement, beyond a period	5.5.6 For any delay in commissioning any critical Element(s), as identified in Schedule 1 & Schedule 2 of this Agreement, beyond a period of 6	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

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	of 45 days shall lead to a sequestration of 10% of the Contract Performance Guarantee. 6.4.5 For avoidance of doubt, it is clarified that amount payable by TSP under this Article is over and above the penalty payable by TSP under Article 5.5.6 of this Agreement.	months (as per clause 13.1.b) unless extended by Nodal Agency due to FM/CIL as per provisions of this agreement, shall lead to a sequestration of 10% of the Contract Performance Guarantee. Clause 13.1.b of TSA allows upto 6 months' delay in commissioning of element after SCOD. 10% sequestration clause does not cover any delay due FM or CIL event. If in case all the elements of projects are declared as "critical elements", TSP is liable for 10% CPG sequestration. It is requested to kindly extend period beyond which CPG sequestration shall occur to 6 months. Further, TSP should not be made liable for LD payments on account of delay in project / element commissioning	

		more than as identified under clauses 6.4.1 and 6.4.2	
33.	**Provisions of TSA** AA- Actual Availability ; MTC- Monthly transmission charges; Tmn = transmission charges for month "m" in contract year "n" For incentive If 98%< AA < 98.5%; MTC= Tmn*1; If 98.5% < AA < 99.75% ; MTC= Tmn* (AA / 98.5 %); If AA> 99.75%; MTC = Tmn* (99.75 % /98.5 %); For Penalty If 95 % < AA < 98 % MTC = Tmn* (AA / 98 %);	Incentive = 0.02 x Annual Transmission Charges x (Actual Annual Availability – Target Availability) Target Availability: AC -98% & HVDC -95% Incentive = 0.02 x Annual Transmission Charges x (Actual Annual Availability – Target Availability) Target Availability: AC -98% & HVDC -95% The tariff for projects under TBCB has seen a reduction of 30%-50% as compared to RTM projects. The incentive for maintaining availability above target availability aids in increasing reliability of the transmission system. As the incentive is reduced as per revised provisions, developers may increase the Quoted	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

	If AA < 95 % MTC = Tmn* (AA/98 %) – 0.02* (Tmn* (AA/98%))	tariffs to compensate which may result in increased cost of electricity to end consumer. Further there is no incentive for maintaining actual availability between 98% and 98.5%. Hence it is requested to continue with existing provisions for penalty and incentive calculation.	
34.	**Clause 3.3.4 of TSA** Provided, that due to the provisions of Article 3.3.4, any increase in the time period for completion of conditions subsequent mentioned under Article 3.1 .3, shall lead to an equal increase in the time period for the Scheduled COD. If the Scheduled COD is extended beyond a period of one hundred eighty (180) days due to the provisions of this Article 3.3.4, the TSP will be allowed to recover the interest cost during construction corresponding to the period exceeding one hundred eighty (180) days by adjustment in the Transmission Charges in accordance with Schedule 9.	3.3.4 Provided, that due to the provisions of Article 3.3.4, any increase in the time period for completion of conditions subsequent mentioned under Article 3.1 .3, shall lead to an equal increase in the time period for the Scheduled COD. The TSP will be allowed to recover the interest cost during construction corresponding for the period of FM/CIL event by adjustment in the Transmission Charges in accordance with Schedule 9.	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

		In event of FM/CIL event, provisions under revised TSA do not provide for any adjustment in transmission charges for a period of 180 days. TSP is allowed to recover interest cost during construction for period exceeding 180 days. As large portion (70%) of project cost is funded through debt, repayment of which does not start till COD, any delay in SCOD leads to higher interest built up. This severely affects the project economics of developer. Hence it is requested to allow for recovery of interest cost during construction for entire period of FM/CIL event.	
35.	**Clause 18. 1 of TSA** The Nodal Agency shall appoint an agency/ company as Independent Engineer (IE)…….	It is requested to not appoint an external agency (Independent Engineer-IE) and the Nodal Agency to execute the functions such as progress monitoring, quality assurance,	Nodal Agency shall appoint the Independent Engineer as per the provisions of TSA.

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	Responsibilities of IE include progress monitoring, ensuring quality, determine costs of works/services, determine valuation of project assets, assist parties in dispute resolution.	determination of works/services, valuation of projects assets. Any delay in appointment of IE would delay the project execution. Further addition of an external agency would also be an additional expense which would eventually result in tariff increase.	
36.	3.1 Satisfaction of Conditions Subsequent by the TSP c. Execute this Agreement;	Since the execution of TSA will require coordination with the CTU, it is requested that the TSA be executed before project acquisition by the project SPV in the interest of saving time. This will also facilitate early completion of the project critical activities	As per revised TBCB Guidelines and SBDs issued by MOP, GoI, TSP on the date of acquisition of SPV from the BPC will enter into a Transmission Service Agreement (TSA) with the Nodal Agency.
37.	**Clause 3.1.3 of TSA** The TSP agrees and undertakes to duly perform and complete the following activities within six (6) months from the Effective Date	While the TSP will apply to the respective commission for grant of license, time required for the issuance is beyond the control of TSP once the application is made. We request to	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

	To obtain the Transmission License for the Project from the Commission;	modify the clause suitably to incorporate the above.	
38.	**Clause 3.5 of SPA** The Selected Bidder hereby acknowledges and agrees that after the date of acquisition of one hundred percent (100%) of the Shares of the Company by the Selected Bidder as per Clause 3.3, (a) the authority of the BPC in respect of the Bid Process shall forthwith cease and any actions to be taken thereafter regarding the Bid Process will be undertaken by the Central Transmission Utility of India Limited themselves, (b) all rights and obligations of the BPC shall cease forthwith, (c) all other rights and obligations of the Company shall be of the TSP and (d) any decisions taken by the BPC on behalf of the Company prior to the date of acquisition, shall continue to be binding on the Company and/or Central Transmission Utility of India Limited as the case may be.	We understand that acquisition price towards acquisition of one hundred percent (100%) of the equity shareholding of the Company, communicated to bidder would include all liabilities pertaining to SPV prior to closing date. Please confirm	The Acquisition Price includes all the assets and liabilities pertaining to SPV and details of the same will be intimated by the BPC as per the provisions of RFP.
39.	**Clause B.2.5.d) of RFP** 765kV Line Bays at Davangere & Cuddapah.	It is understood that existing busbar protection have provision for future	Existing busbar protection have provision for bays under present scope. PUs shall be provided by respective bay developer i.e. present TSP.

		bays and also PUs are available for future bays. BPC to confirm	
40.	**Clause B.2.6.a) of RFP** 765kV Line Bays at Davangere & Cuddapah.	For SCADA, it is understood that necessary process I/O shall be available for future bays and accordingly license for same. BPC to confirm.	Augmentation of existing SAS along with licenses is under present scope.
41.	**Clause B.3.1 of RFP** 765kV Line Bays at Davangere & Cuddapah.	BPC to confirm the availability of AC & DC feeders in existing ACDB/DCDB for future bays.	AC and DC feeder modules are available in existing ACDB/DCDB for present extension.
42.	**Clause B.3.1 of RFP** 765kV Line Bays at Davangere & Cuddapah.	We understand that existing equipment such as DG Set, LT Transformer, Battery & Battery charger have sufficient capacity to cater the requirements of bay under present scope of work, hence no need to consider new DG Set, LT Transformer, Battery & Battery charger in the existing sub stations.	New DG Set, LT Transformer, Battery and Battery charger are not envisaged in the existing sub stations.

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		BPC to confirm the same.	
43.	**Clause B.3.2 of RFP** 765kV Line Bays at Davangere & Cuddapah.	No separate FF system is envisaged under the present scope of work. BPC to confirm	Existing fire-fighting systems, as available, shall be augmented/ extended to meet the additional requirements.
44.	**RFP** 765kV Line Bays at Cuddapah.	BPC to share the Existing: 1. SLD with exact termination details, 2. Layout with exact termination location, 3. Earth mat Layout, 4. Cable Trench Layout 5. SAS Details. 6. VMS Details. 7. Soil Test report. with present scope and other existing drawing for better clarity and estimation.	SLD and GA of existing Cuddapah substation are already provided with RfP. For other details, bidder may visit the site.

S. N.	Clause No. and Existing provision	Clarification required	Clarifications
1.	**RFP** "Final Offer" shall mean the Quoted Transmission Charges, required to be submitted as part of the Financial Bid on the electronic bidding platform during the e-reverse bidding stage. In case, no Final Offer is received during the e-reverse bidding stage then the lowest "Initial Offer" shall be deemed to be the Final Offer;	Presently, details of L-1 bidder are not displayed on conclusion of e-RA if there is no receipt of counterbids. In case, two bidders have quoted the same L1, they would be under false impression of having L1 tariff of their own and may not offer further competitive offer. In such scenario, e-RA shall end resulting in premature conclusion of e-RA process. It is requested to update the e-RA platform accordingly to reflect the status of L1 bidder under the above scenario.	The e-RA will be conducted as per SBDs and the details of the successful bidder will be intimated only after conclusion of e-Reverse Auction (e-RA) process. In e-RA, two bidders cannot have same price bid as every bid has to be necessarily less than the previous bid. In case of Initial Offer as bids are encrypted, two bidders may quote the same initial price offer. But in e-RA even if a single bid is received, two bidders cannot be at the same price offer. If the Initial Offer for two or more bidders is same and no bids are quoted in e-RA, the instant case seems to be hypothetical however in such case the decision of the competent authority shall prevail.
2.	**RFP Document and TSA** **Clause 1.5 of RFP** …. The TSP shall ensure transfer of all project assets along with substation land, right of way and clearances to CTU or its successors	Query-1 Treatment of tax application at the end of the life of assets. As per section 50C of Income tax act, in case sale consideration received or claimed to be	Definition of Project Assets is amply clear. The insurance proceeds will also be transferred by TSP. The TSP shall ensure transfer of all project assets along with substation land, right of way and clearances to CTUIL or its

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	or an agency as decided by the Central Government after 35 years from COD of project at zero cost and free from any encumbrance and liability. The transfer shall be completed within 90 days after 35 years from COD of project failing which CTU shall be entitled to take over the project assets Suo moto. **Provisions of TSA** Definitions: "Project Assets" shall mean all physical and other assets relating to and forming part of the Project including: (a) rights over the Site for substations, ROW for transmission lines; (b) tangible & intangible assets such as civil works and equipment including foundations, embankments, pavements, electrical systems, communication systems, relief centres, administrative offices, Substations, software, tower and sub-stations designs etc; (c) project facilities situated on the Site; (d) all rights of the TSP under the project	received by seller on sale of land or building or both is less than value adopted by stamp valuation authority (SVA), such value adopted by SVA would become actual sale consideration received or accruing to the seller. Therefore, capital gain would be Valuation as per stamp valuation authority reduced by cost/indexed cost of acquisition. Treatment of Capital tax and applicable TDS to be clarified. Query-2 Modality of transfer of assets to be defined. In case only assets to be transferred then application of stamp duty & other taxes and its treatment to be clarified. Query-3 Modalities for O&M, other expenditure etc. for the transition period of 90 days may be confirmed. Availability calculation for the said period?	successors or an agency as decided by the Central Government after 35 years from COD of project at zero cost and free from any encumbrance and liability. All the expenditure till the transfer of all project assets along with substation land, right of way and clearances shall be borne by TSP. Any taxes, stamp duties and liabilities, as may be applicable, has to be borne by the TSP.

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	agreements; **(e) financial assets, such as receivables, security deposits etc;** **(f) insurance proceeds; and** (g) Applicable Permits and authorisations relating to or in respect of the Transmission System;" **2.2.2** Post the Expiry Date of this Agreement, the TSP shall ensure transfer of Project Assets to CTU or its successors or an agency as decided by the State Government at zero cost and free from any encumbrance and liability. The transfer shall be completed within 90 days of expiry of this Agreement failing which CTU shall be entitled to take over the Project Assets Suo moto	Query-4 There could be delay in receipt of payment against receivables. Further, the TSP might have some pending claims against insurance company. How shall TSP receive these legitimate pending claim or charges after transfer of asset to CTU? Query-5 Please confirm that any taxes or charges or cost to be borne by the TSP at the transfer time including sale at value lower than fair value shall be reimbursed to the TSP. These costs are not known at this point of time and might be significant in amount. TSP cannot be exposed such charges. Query-6	

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		Modalities for O&M, other expenditure etc. for the transition period of 90 days may be confirmed.	
3.	**Clause 2.7.2 of RFP**	The important timelines are mentioned in the table including shortlisting and announcement of Qualified bidder, proposed date of issuance of LoI, transfer of SPV etc. It is observed in the past that in case, there is extension in bid submission date, the revised timelines are not being provided regarding issuance of LoI, transfer of SPV etc. Further, in case of delay in shortlisting of qualified bidders, it is requested to provide the updated dates of financial bid opening and date of conduction of e-RA etc., at least 1 week prior to financial bid opening, to enable bidders to take appropriate action for participation in e-RA It is requested to kindly provide the updated table in case of extension in bid submission date/ delay in shortlisting of qualified bidders.	The timelines for shortlisting of qualified bidders and subsequent conduction of e-RA shall be done as per timelines stipulated in the RFP.

4.	**Clause 2.15.3 of RFP** After the date of acquisition of the equity shareholding of SPV [which is under incorporation], along with all its related assets and liabilities, by the Selected Bidder, i. the authority of the BPC in respect of this Bid Process shall forthwith cease and any actions to be taken thereafter will be undertaken by the Nodal Agency,	Role of BPC has to be complete. i. the authority of the BPC in respect of this Bid Process shall forthwith cease and any actions to be taken thereafter will be undertaken by the Nodal Agency, save for those which are related to and consequent to the bidding process adopted by the BPC. The BPC shall not relinquish its role after the acquisition but shall have to undertake all activities including providing the certification from the Bid Evaluation Committee etc., and other requirements to enable the Bidder to obtain Transmission license and adoption of Transmission charges. Furthermore, any activity which has an origin traced to the BPC activity/process has to be owned by BPC and the TSP / LTTC is neither aware nor can be made responsible.	The role of BPC ends with the transfer of SPV to the successful bidder. However, it may be noted that the BPC shall fulfil its responsibility of providing the certification from the Bid Evaluation Committee to enable the TSP to obtain Transmission license and adoption of Transmission charges.
5.	**Clause 2.15.3 of RFP** iv. contractual obligations undertaken by the BPC shall continue to be fulfilled by the TSP.	What are the obligations that the BPC has undertaken which needs to be fulfilled by the TSP?	The provisions of RFP are amply clear in this regard.

		2.15.3 iv. Contractual obligations undertaken by the BPC shall continue to be fulfilled by the TSP if only such contractual obligations have been made available to the bidders 15 days prior to the bid deadline. Nature of contractual obligations cannot be left open as the same is to be fulfilled by the TSP.	
6.	**Clause 2.15.4 of RFP** Within five (5) working days of the issue of the acquisition of the SPV by the Successful Bidder, the TSP shall apply to the Commission for grant of Transmission License and make an application to the Commission for the adoption of Transmission Charges, as required under Section – 63 of The Electricity Act 2003 Provision of TSA 3.1.1.....The TSP shall, within five (5) working days from the date of acquisition of SPV by the Selected Bidder, undertake to apply to the Commission for the grant of	Query-1 We request you to consider at least 30 days' time for completion of these activities. Query-2 Definition of working day is not defined in the TSA. Therefore, it is requested to define working day to avoid ambiguity and litigation later on Within thirty (30) working days of the issue of the acquisition of the SPV by the Successful Bidder, the TSP shall apply to the Commission for grant of Transmission License and make an application to the	This is as per the Standard Bidding Documents. No change is envisaged.

	Transmission License and for the adoption of tariff as required under section-63 of the Electricity Act	Commission for the adoption of Transmission Charges, as required under Section – 63 of The Electricity Act 2003	
7.	**Clause 2.15.6 of RFP** If the TSP fails to obtain the Transmission License from the Commission, it will constitute sufficient grounds for-annulment of award of the Project	In case TSP fails to obtain the Transmission License the reasons for the same have to be examined. 2.15.6 If the TSP fails to obtain the Transmission License from the Appropriate Commission, the treatment shall be as per provisions 3.3 of the TSA. Provisions of 3.3 of TSA provides for consequences for non-fulfilment of conditions subsequent. The provisions of RFP as such have to be reflective of TSA.	This is as per the Standard Bidding Documents. The provisions of RFP documents shall prevail.
8.	**General**	Kindly confirm: whether the Project / Elements are covered under "Generation linked Project" or "System Strengthening Project".	Bidders may refer Clause 1.3 of Section-1 of RfP.
9.	**General**	Kindly confirm:	The provisions in TSA pertaining to commissioning shall prevail which interalia

		Whether the Project/ Elements are eligible for early commissioning incentive as per MoP, GoI order dated 15.07.2015.	covers the matter of preponing of CoD. The TSP may approach the Committee constituted by MoP vide its OM No. 15/1/2013-Trans dated 14.12.2021 to ensure smooth operationalization of the Policy for early commissioning.
10.	**General**	BPC is requested to confirm, whether the project/Elements of the project are a part of Associated Transmission System (ATS) as per definition of Connectivity and General Network Access to the inter-State Transmission System, Regulations, 2022. Bidder needs information for proper estimation.	Bidders may refer Clause 1.3 of Section-1 of RfP.
11.	**General**	BPC is requested to provide the details of transmission element(s) of subject project, for which any delay in construction of transmission elements by TSP resulting in mismatch of these elements viz-a-viz. generation station(s) or Unit(s), TSP shall be liable to make payments viz., transmission charges to generation station(s) or unit(s) under clause 13.8, Sharing of Inter-State Transmission Charges and Losses, Regulations, 2020.	All elements covered under the subject transmission scheme are required to be implemented simultaneously as per time-frame specified in the RfP. Treatment of transmission charges in case of delay/mismatch in transmission scheme shall be governed as per applicable provisions of TSA and CERC Sharing Regulations, 2020. Further, also refer to Clause 2.6 of section 2 of RfP.

		Bidder needs information for proper estimation.	
12.	**The definition of Contract Year in RFP is as under:** "Contract Year" shall mean the period beginning on the **Scheduled COD**, and ending on the immediately succeeding March 31 and thereafter each period of 12 …: And the definition of Contract Year in TSA is as under: "Contract Year", for the purpose of payment of Transmission Charges, shall mean the period beginning **on the COD**, and ending on the immediately …"	As per RFP, the Contract Year shall start from the Scheduled CoD whereas as per TSA, the Contract Year shall start the CoD. As such, both the definitions are contradictory in nature. It is requested to clarify the correct definition of Contract Year.	The provisions of RFP and TSA are amply clear in this regard.
13.	**Clause no 2.3 of TSA** Conditions prior to the expiry of the Transmission License 2.3.1 In order to continue the Project beyond the expiry of the Transmission License, the TSP shall be obligated to make an application to the Commission at least two (2) years before the date of expiry of the Transmission	There should be a provision in the TSA to cover the revenue loss that may be incurred by the TSP, in the case of the Appropriate Commission not granting extension of the Transmission License beyond the period of 25 years.	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

	License, seeking the Commission's approval for the extension of the term of the Transmission License up to the Expiry Date. 2.3.2 The TSP shall timely comply with all the requirements that may be laid down by the Commission for extension of the term of the Transmission License beyond the initial term of twenty-five (25) years & upto the Expiry Date and the TSP shall keep the Nodal Agency fully informed about the progress on its application for extension of the term of the Transmission License.	The Transmission Charges to be quoted by the bidders would be based on the cash flow generated from the Project for 35 years and if, for any reason not attributable to the TSP (including any change in law), the Transmission License is not extended by the Appropriate Commission beyond 25 years the TSP will suffer significant losses. The RFP / TSA should be suitably modified to provide security of continuation of the transmission business for at least 35 years.	
14.	**Clause 3.1.3 of TSA** The TSP agrees and undertakes to duly perform and complete the following activities **within six (6) months** from the Effective Date (except for c) below), …….. c) To submit to the Nodal Agency, CEA & Independent Engineer, the Project Execution Plan, immediately after award of contract(s) and maximum within one hundred and twenty (120) days from the Effective Date. ….	As per clause 3.1.3 h, the EPC contracts to be awarded in 6 months. Whereas as per clause 3.1.3 c, TSP is required to submit Project Execution Plan after awards of Contracts within 120 days. TSP shall not be in a position to submit project plan within 120 days from effective date if the award of EPC contract is awarded after 120 days, but before 6 months period.	Section 3.1.3 clearly states that period of 6 months is not applicable to clause (c).

	h) **To award the Engineering, Procurement and Construction contract ("EPC contract") for the design and construction of the Project and** shall have given to such Contractor an irrevocable notice to proceed;	As such, the timelines mentioned in above clauses are contradictory and the same may be reviewed.	
15.	**Clause 3.3.1 of TSA** If any of the conditions specified in Article 3.1.3 is not duly fulfilled by the TSP even within three (3) Months..... in accordance with the provisions of this Agreement	Suggested text to be added at the end of this Article: "..... The additional Contract Performance Guarantee, if any provided by the TSP for delay in fulfilment of condition subsequent, shall be returned by the CTUIL on fulfilment of conditions subsequent by the TSP" The additional CPG is for specific default(s) and once such default(s) cease to exist, this additional amount of CPG should be returned. Additional CPG cannot be held back by the CTUIL till COD of the Project.	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.
16.	**Clause no 3.3.4 of TSA** In case of inability of the TSP to fulfil the conditions specified in Article 3.1.3 due to any Force Majeure Event, the time period for fulfilment of the condition subsequent as mentioned in Article 3.1.3, may be extended	The terms and conditions for termination of the TSA under this Article, including the termination payment and status of the SPV, need to be provided in the TSA.	In such cases, provisions of Article 3.3.5 and Article 13.6.1 of TSA shall apply.

TC

	for a period of such Force Majeure Event. Alternatively, if deemed necessary, this Agreement may be terminated by the Nodal Agency by giving a Termination Notice to the TSP, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement and the Contract Performance Guarantee shall be returned as per the provisions of Article 6.5.1.	In case the Force majeure event continues, the TSA will be terminated and the CPG will be returned. Other expenses that would have been incurred till the date of termination of the TSA including the Acquisition Price paid for Acquiring the SPV and other incurred costs shall also be explicitly stated. There should be an explicit provision for refund of the Acquisition Price, along with the other expenses incurred by the TSP / Selected Bidder till such date of termination.	
17.	**Clause 3.3.4 of TSA** ..... Provided, that due to the provisions of this Article 3.3.4, ... If the Scheduled COD is extended beyond a period of one hundred eighty (180) days due to the provisions of this Article 3.3.4, the TSP will be allowed to recover the interest cost during construction corresponding to the period exceeding one hundred eighty (180) days by adjustment in the Transmission Charges in accordance with Schedule 9	In case project suffers from Force Majeure event for a period less than 6 months, interest cost during construction may be considered.	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

	11.7 (e) Available Relief for a Force Majeure Event For avoidance of doubt, the TSP acknowledges that for extension of Scheduled COD a period up to one hundred eighty (180) days due to Force Majeure event, no compensation on the grounds such as interest cost,…..		
18.	**Clause 4.6 of TSA** Interconnection Facilities: 4.6.1 Subject to the terms and conditions of this Agreement, the TSP shall be responsible for connecting the Project with the interconnection point(s) specified in Schedule 1 of this Agreement. The Interconnection Facilities shall be developed as per the scope of work and responsibilities assigned in Schedule 1 of this Agreement. The Nodal Agency shall be responsible for coordinating to make available the Interconnection Facilities. 4.6.2 In order to remove any doubts, it is made clear that the obligation of the TSP within the scope of the project is to construct the Project as per Schedule-1 of this	It is understood that if interconnection facilities at the interconnection point is not available, whereas TSP has completed rest of the scope of the project, the project shall be considered as deemed COD and TSP shall be entitled to all the benefits envisaged under the TSA.	The provisions of TSA are amply clear and shall prevail.

	Agreement and in particular to connect it to the Interconnection Facilities as specified in this Agreement.		
19.	**Section-I of RFP** **6.1 Connection with the Inter-connection Facilities:** 6.1.1 The TSP shall give the RLDC(s), CTU, / STU, as the case may be, and any other agencies as required, at least sixty (60) days advance written notice of the date on which it intends to connect an Element of the Project, which date shall not be earlier than its Scheduled COD or Schedule COD extended as per Article 4.4.1 & 4.4.2 of this Agreement, unless mutually agreed to by Parties. Further, any preponing of COD of any element prior to Scheduled COD must be approved by the Nodal Agency. 6.2.1 An Element of the Project shall be declared to have achieved COD twenty four (24) hours following the connection of the Element with the Interconnection Facilities pursuant to Article 6.1 or seven (7) days after the date on which it is declared by the TSP to	Reference is drawn to the Order of CERC 4/ADP/2016 dated 23.03.2016. Relevant extract of the Order is reproduced hereunder: "In the event the inter-connection facilities are not ready by SCOD or by revised SCOD (as may be revised by the petitioner and the LTTCs for the purpose of availing incentive as per MOP Policy) on account of non-readiness of the upstream or downstream transmission assets while the petitioner's transmission system is ready for commissioning, the COD of the transmission assets of the petitioner may be declared in accordance with the provisions of Article 6.2 of the TSA (to be known as "deemed COD") and the LTTCs/developers of the upstream and downstream assets shall be liable to pay the transmission charges from the deemed COD till the transmission assets are put into actual use." From above, it is seen that even in case of SCOD when the systems are declared deemed	The provisions of Article 6 of TSA are in line with the existing CERC Regulations and shall prevail.

TC

	be ready for charging but is not able to be charged for reasons not attributable to the TSP subject to Article 6.1.2. Provided that an Element shall be declared to have achieved COD only after all the Element(s), if any, which are pre-required to have achieved COD as defined in Schedule 2 of this Agreement, have been declared to have achieved their respective COD. 6.2.2 Once any Element of the Project has been declared to have achieved deemed COD as per Article 6.2.1 above, such Element of the Project shall be deemed to have Availability equal to the Target Availability till the actual charging of the Element and to this extent, TSP shall be eligible for the Monthly Transmission Charges applicable for such Element.	COD as per Article 6.2 of TSA, till the transmission assets are put into actual use, the transmission charges are liable to be paid by DICs/developers of the upstream and downstream assets. In such situations, it shall be construed that BPC has obtained consent of the DICs/ Upstream / Downstream / Generators (as applicable) for payment of transmission charges. Further, as per CERC order no. 104/MP/2018 dated 18th September 2018, downstream was directed to pay transmission charges to TSP.	
20.	**Clause 6.3.1 (b) of TSA** In case of delay due to Indirect Non-Natural Force Majeure Event or Natural Force Majeure Event affecting the Nodal Agency, TSP is entitled for payment for debt service which is due under the Financing	Clause 6.3.1 (b) covers the loss on debt amount which includes, due to Indirect Non-Natural Force Majeure Event or Natural Force Majeure Event affecting the Nodal Agency, TSP is entitled for payment for debt service which is due under the Financing	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

TC

	Agreements, subject to a maximum of Transmission Charges calculated on Target Availability, for the period of such events in excess of three (3) continuous or non-continuous Months in the manner provided in (c) below.	Agreements. However, any loss on the equity is not covered in the above clause. In order to compensate for the loss due to Indirect Non-Natural Force Majeure Event or Natural Force Majeure Event affecting the Nodal Agency, compensation to both equity as well as debt to be covered as per clause 6.3.1 (a).	
21.	**Clause 10 of TSA** Billing and Payment of Transmission Charges 10.3 Rebate & Late Payment Surcharge	Any changes in CERC regulations, which have an implication on Billing cycle and/or cost implication to the TSP due to change in rebate and late payment surcharge, the same shall be allowed to be recovered under Change in law.	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.
22.	**Clause no. 10.1 of TSA** Subject to provisions of this Article 10, the Monthly Transmission Charges shall be paid to the TSP, in Indian Rupees, on monthly basis as per the provisions of this agreement, from the date on which an Element(s) has achieved COD until the Expiry Date of this Agreement, unless terminated earlier and in	Subject to provisions of this Article 10, the Monthly Transmission Charges shall be paid to the TSP, in Indian Rupees, on monthly basis as per the provisions of the Sharing Regulations, from the date on which an Element(s) has achieved COD **or deemed to have achieved COD** until the Expiry Date of this Agreement, unless terminated earlier and	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

TC

	line with the provisions of Schedule 4 of this Agreement.	in line with the provisions of Schedule 4 of this Agreement As per clause 6.2 of the TSA, the TSP is eligible for payment of Transmission charges from the date of deemed COD.	
23.	**Clause no. 11.4 of TSA** 11.4 Force Majeure Exclusions 11.4.1 (g) Any error or omission in the survey report provided by BPC during the bidding process.	The survey report furnished by BPC has to be accurate and any error or omission has to be owned by the BPC. Professional fees including fees for survey report is also claimed by BPC.	The provisions of TSA are amply clear and shall prevail.
24.	**Clause 12.1.1 of TSA** Change in Law means the occurrence of any of the following **after the Bid Deadline** resulting into any additional recurring / non-recurring expenditure by the TSP or any savings of the TSP….	It is mentioned that in case any change in law event occurs on bid submission date or just prior to bid submission date, the bidders shall not have adequate time to understand the cost implication of such change in law event. Bidders cannot be exposed to such uncertainties and thereafter it is requested to consider any event **after 7 days prior to bid deadline as Change in Law event.** Furthermore, the bid submission is fixed at 12 noon. Whereas change in event could happen during the day even after 12 noon. Such clause can have serious implications on the viability of the project.	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail.

TC

25.	**Clause 12.1.2 of TSA** Notwithstanding anything contained in this Agreement, Change in Law shall not cover any change: a. Taxes on corporate income; and; and Withholding tax on income or dividends distributed to the shareholders of the TSP.	Any tax applied on the income or profits of the TSP need to be covered under change in law. Tax is an element beyond the control of the TSP. Change in tax or introduction of any tax is covered under change in law. Tax rate applicable on the income or profits of the TSP is beyond the control of the TSP and to assume the same for 35 years shall be a risk which is best assumed by the LTTCs accordingly this is to be reviewed.	This is as per the Standard Bidding Documents. The provisions of TSA shall prevail. Further, please refer Clause 2.5.7 of RFP.
26.	**Clause 13.7 of TSA** If Agreement is terminated on account of Force Majeure Events, non -requirement of any Element or Project during Construction, Nodal Agency's non-fulfilment of Role & TSP's Event of Default, the TSP shall be entitled for Termination Payment equivalent to valuation of Project Assets. Upon	Kindly furnish the methodology of calculation of valuation of project asset.	Valuation of project assets shall be done as per the prevailing industry practices. Further, please refer Clause 18.2.e. of TSA

	payment, the Nodal Agency shall take over the Project Assets		
27.	**Clause 10.1.2.1 of TSA** **10.1.2.1** 1 Any amount payable under an Invoice shall be paid in immediately available and freely transferable clear funds, for value on or before the Due Date, to such account of the TSP or Long Term Transmission Customer as shall have been previously notified to Long Term Transmission Customer or the TSP, as the case may be **10.3 Rebate & Late Payment Surcharge:** **10.3.1 Rebate:** In case the Long Term Transmission Customer pays to the TSP through any mode of payment in respect of a Monthly Transmission Charge Invoice or Supplementary Bill, the following shall apply: a. For payment of Invoices through any mode of payment, a Rebate of 2% shall be allowed on the Monthly Transmission Charge Invoice or Supplementary Bill for payments made in	Timelines for payment of transmission charges is linked to "due date". However, the "due date" is not defined in the TSA. It is requested to provide the definition of "due date" to avoid confusion and litigation.	The provisions of TSA shall prevail.

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	full within two Business Day of the receipt of the Invoice; or b. For payment of Invoices subsequently, but within the Due Date, a Rebate of 1% shall be allowed on the payments made in full. and **others**		
28.	**Annexure 11 of RFP Document**	Resolution No 1 "… and is hereby accorded for investment of…….% (……per cent) of the total equity share capital of SPV [which is under incorporation] representing…" The name of SPV is not furnished. As the Board approval is the first activity to undertake the bidding process for the project, it is requested to provide 45 days from date of informing SPV name to bidders as Board resolution requires name of the SPV. Alternatively, the bidder may be permitted to go ahead with the Board approval process as the format of RFP (without name of SPV) for timely submission of the bid.	The provisions of RFP shall prevail.

TC

		Board resolution may be generalized as under: "... and is hereby accorded for investment of.....% (.....per cent) of the total equity share capital of SPV as named in the RFP documents representing..."	
29.	**Clause 2.1.2 of RFP** "Experience of development of projects in the Infrastructure Sector in the last five (5) years with aggregate capital expenditure of not less than Rs..... Crore or equivalent USD (calculated as per provisions in Clause 3.4.1). However, the capital expenditure of each project shall not be less than Rs..... Crore or equivalent USD (calculated as per provisions in Clause 3.4.1 For this purpose, capital expenditure incurred on projects that have been commissioned/ completed at least seven (7) days prior to Bid Deadline shall be considered. The capital expenditure discussed above shall be as capitalized and	As per QR, the capital expenditure under reference shall be as capitalised and reflected in the audited books of accounts of Technically Evaluated Entity. In above regard, please clarify the following: Whether entire capital expenditure of various Project(s), meeting the value-wise threshold requirements of QR, as capitalised in last five years in the audited books of accounts of Technically Evaluated Entity, shall be considered; OR Whether only the capital expenditure incurred in the last five years of such Project(s), capitalised in last five years in the	This is as per the Standard Bidding Documents. No change is envisaged.

	reflected in the audited books of accounts of the Technically Evaluated Entity…..".	audited books of accounts of Technically Evaluated Entity, shall be considered.	
30.	**Clause 2.11 of RFP** Each Bidder shall submit the Bid accompanied by Bid Bond issued by any of the Banks listed in Annexure-17. The Bid Bond shall be valid for a period of thirty (30) days beyond the validity of the Bid.	Verification of issued bid bond is done by the beneficiary bank of the BPC through SFMS platform from the issuing bank of the bidder. In above regard, BPC is requested to provide following details. - Bank account detail of beneficiary along with IFSC code and Branch address - Unique Identifier of the beneficiary (if applicable) (The unique identifier needs to be incorporated by the issuing bank in Field 7037 of the IFIN 760 COV/IFIN COV while transmitting verification messages to the Beneficiary Bank through SFMS).	The same shall be provided separately.
31.	**Annexure 14 of RFP** (Format of the Bid Bond) Addressee details are not mentioned in the beginning of the format Annexure 14 (Format of the Bid Bond) "….In consideration of the……"	Addressee details to whom Bid Bond is to be addressed are not mentioned in the Bid Bond Format. It is requested to mention the followings at starting of the format: Annexure 14 (Format of the Bid Bond) *" To,*	Bid Bond is to be addressed to PFC Consulting Limited.

		Designation of officer *Name of BPC* *Address of BPC* In consideration of the..... "	
32.	**Clause 1.6.2.2 of RFP** The details and documents as may be obtained by the BPC/ project specific SPV in relation to the Project shall be handed over to the TSP on an as-is-where-is basis, so that it may take further actions to obtain **Consents, Clearances and Permits**	BPC to get the **GST registration and GST TAN** registration in the name of SPV in the State of Project execution where supply of Goods and Services shall take place.	Presently, the GST registration of the SPV is not taken by the BPC as there is no income of SPV and the same is in compliance to GST Act.
33.	**Clause 1.2 (i) of SPA** "Acquisition Price" shall mean INR _____ (Rupees _____ only) [Insert the value of the Acquisition Price, both in figures and in words respectively], which is the aggregate consideration payable by the Selected Bidder towards purchase of the Sale Shares at par along with assets and liabilities of the Company as on the Closing Date subject to adjustment as per the **audited**	As per clause 1.2 (i) of the Share Purchase agreement, BPC is required to provide audited financial statement as on the closing date for adjustment, if any, in regard to aggregate consideration for acquisition of the SPV. It is requested to BPC to furnish **audited financial statement within 15 days** of the closing date.	Audited Financial Statements shall be furnished post completion of audit.

<table>
<tr><td></td><td>accounts of the Company as on the Closing Date;</td><td>Audited financial statement is required for accounting in the books of successful bidder to ascertain acquisition price on closing date. An undertaking that the audited financial statements shall be provided within 15 days from the closing date may be furnished by BPC for making the payment of acquisition price by successful bidder.</td><td></td></tr>
<tr><td>34.</td><td>RFP General</td><td>Name of the SPV is not mentioned</td><td>The name of SPV shall be provided separately.</td></tr>
<tr><td>35.</td><td>RFP, Scope of Transmission scheme</td><td><table><tr><td>Sl. No.</td><td>Name of Transmission Element</td><td>Scheduled COD in months from Effective Date</td></tr><tr><td>1</td><td>Establishment of 4x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at</td><td>24 Months</td></tr></table></td><td>1) Developer of Davanagere PS shall provide space on free of cost basis.
2) & 3) Bidder may refer the survey report. Further, bidders may visit the Davanagere PS to acquaint themselves with the site conditions.
4) In respect of scope of O&M, Provision of RfP is amply clear. Further, CEA's "Operation and Maintenance (O&M) guidelines and Standard Format for Memorandum of Understating between New TSP and Existing TSP" issued by CEA vide its letter No. I/28514/2023 dated 22.06.2023 shall be followed.</td></tr>
</table>

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				Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level …		
			2	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits		
			3	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits …		
			4	+300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR …..		
			Note:			

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		i. POWERGRID shall provide space for 2 Nos. of 765 kV GIS line bays (only 765 kV line terminal equipments) at Cuddapah for termination of Ananthapuram-II PS – Cuddapah 765 kV D/C line. ii. Developer of Davanagere PS shall provide space for 2 Nos. of 765 kV line bays at Davanagere PS for termination of Ananthapuram-II PS – Davanagere 765 kV D/C line. **Extension of Davanagere PS** *(2nos. of 765 kV bays):* 1) In case, land is provided by the developer of Davanagere PS, confirm whether, the same shall be provided on lease basis or on free of cost. If on lease basis, kindly provide the charges. 2) The space for bays at Davanagere PS will be provided to TSP on an 'as-is, where-is' basis or if the land will be levelled prior to transfer.	

		3) What is the timeline for handing over of land for construction. In case no clarity is provided, it is presumed that TSP shall be deemed to have completed its scope of works on the SCODs for other elements and shall be entitled to receive transmission charges in case the land for bay extension works at **Davanagere PS** by the developer of "**Davanagere PS**", is not provided within 3 (three) months of acquisition of SPV by the successful bidder. 4) O&M of these bays at **Davanagere PS** are in the scope of TSP or Developer of Davanagere PS. Kindly confirm. Bidder needs information for clarity and proper estimation	
36.	ANNEXURE 3 - FORMAT FOR EVIDENCE OF AUTHORIZED SIGNATORY'S AUTHORITY	…Know all men by these presents, We …….**(name and address of the registered office of the Bidder**…	This is as per the Standard Bidding Documents. The provisions of RFP shall prevail.

<table>
<tr>
<td></td>
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<td>As per the format of Power of Attorney, the bidder is required to mention the name and registered office of the bidder.

In case corporate office of the bidder is in different state than that of its registered office, can the bidder execute the Power of Attorney in the state of its corporate office?

For clarity and simplification of bidding process</td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>ANNEXURE 8 -UNDERTAKING AND DETAILS OF EQUITY INVESTMENT</td>
<td>…. We confirm that our Bid meets the Scheduled COD of each transmission Element and the
Project as specified below:
<table>
<tr><th>Sl. No.</th><th>Name of Transmission Element</th><th>Scheduled COD in months from Effective Date</th></tr>
<tr><td>1</td><td>Establishment of 4x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Ananthapuram-II</td><td>24 Months</td></tr>
</table>
</td>
<td>The elements are interdependent on each other and therefore shall be commissioned simultaneously.</td>
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			Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level …			
		2	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			
		3	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits …			

TC

		4 | +300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR ….. | Kindly provide the element wise break up for determining the transmission charges based on availability For clarity and determination of tariff during operation	
38.	Clause No. 2.5, Section – II of RFP Documents	2.5 The Bidding Process … … … The initial period for conducting the e-reverse bidding should be 2 hours which will be extended by **30 minutes** from the last received bid time, if the bid is received during the last **30 minutes** of the scheduled or extended bid time. Subsequently, it will be extended again by **30 minutes** from the latest received bid time. … … …	The provisions of RFP shall prevail.

		2.5 The Bidding Process …… The initial period for conducting the e-reverse bidding should be 2 hours which will be extended by **15 minutes** from the last received bid time, if the bid is received during the last **15minutes** of the scheduled or extended bid time. Subsequently, it will be extended again by **15 minutes** from the latest received bid time. **In case e-Reverse Bidding is not completed by 20:00 Hrs (IST), then the e-Reverse Bidding shall be paused and will resume on the next working day at 10:00 Hrs (IST). The prevailing L1 bidder at the time of pause on the previous day shall continue to be the L1 bidder at resumption of e-Reverse Auction. On resuming, the e-Reverse Bidding shall conducted for 60 minutes, which will be extended by 15 minutes from the last received bid time, if the bid is received during the last 15minutes. Subsequently, it will be extended again by 15 minutes from the latest received bid time.**	

TC

		The above shall continue till the e-Reverse Bidding gets concluded. …. …. As per revised Standard Bidding Documents, the bidders are required to quote single annual Transmission Charge from the date of SCOD of the project till expiry date in initial bid and in the e-RA. During e-RA, the initial time period for e-RA is 2 hours with extension of 30 minutes from last bid. In this regard, it is submitted that the bidder is required to quote single number as annual transmission charges. Further, there is option for automatic reduction in e-RA portal. Therefore, the extension of 30 minutes from last bid submission may be reduced to 15 minutes. Further, in case the bidding extends beyond office hours, the e-RA may be paused and resumed on the next working day as being followed by major eps providers including Mjunction etc.	

Sl. No.	Clause No.	Existing Clause	New/Revised Clause
1.	Clause 2.1.1 of RFP	The Bidder should be a company duly incorporated under the relevant laws (Bidding Company) or a Consortium of companies (Bidding Consortium) with one of the companies acting as the Lead Member of the Bidding Consortium. The Bidder shall be selected on meeting the Qualification Requirements specified in Section 2 of this RFP, as demonstrated by the Bidder's Technical Bid and the lowest Quoted Transmission Charges discovered from Final Offers quoted during the e-reverse bidding. A Bidding Consortium can participate in the bidding process for the Project if any Member of the Consortium has purchased the RFP document for such Project. Bidder who agrees and undertake to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide **Orders No. 11/5/2018 - Coord. dated 28.07.2020** for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard, shall be eligible hereunder. Further, it is clarified that Procuring Entity as defined in orders shall deemed to have included Selected Bidder and/ or TSP.	The Bidder should be a company duly incorporated under the relevant laws (Bidding Company) or a Consortium of companies (Bidding Consortium) with one of the companies acting as the Lead Member of the Bidding Consortium. The Bidder shall be selected on meeting the Qualification Requirements specified in Section 2 of this RFP, as demonstrated by the Bidder's Technical Bid and the lowest Quoted Transmission Charges discovered from Final Offers quoted during the e-reverse bidding. A Bidding Consortium can participate in the bidding process for the Project if any Member of the Consortium has purchased the RFP document for such Project. Bidder who agrees and undertake to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide **Orders No. P-45021/2/2017-PP (BE-II)-Part (4) Vol.II dated 19.07.2024** for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard, shall be eligible hereunder. Further, it is clarified that Procuring Entity as defined in orders shall deemed to have included Selected Bidder and/ or TSP.
2.	Clause 2.1.1 of RFP	Besides, Department of Expenditure, Ministry of Finance vide **Order (Public Procurement No 1) bearing File No. 6/18/2019-PPD dated 23.07.2020, Order (Public Procurement No 2) bearing File No. 6/18/2019-PPD dated 23.07.2020 and Order (Public Procurement No. 3) bearing File No. 6/18/2019-PPD, dated 24.07.2020,** as amended from time to time, have issued directions regarding public procurement from a bidder of a country, which shares land border with India are also applicable.	Besides, Department of Expenditure, Ministry of Finance vide, **OM No. F.7/10/2021-PPD (1) dated 23.02.2023** as amended from time to time, have issued directions regarding public procurement from a bidder of a country, which shares land border with India are also applicable.

Sl. No.	Clause No.	Existing Clause	New/Revised Clause
3.	Annexure 1 of RFP	…….. 4. We hereby agree and undertake to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide **Orders No. 11/5/2018 - Coord. dated 28.07.2020** for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard. We hereby also agree and undertake to comply with Department of Expenditure, Ministry of Finance vide **Order (Public Procurement No 1) bearing File No. 6/18/2019-PPD dated 23.07.2020, Order (Public Procurement No 2) bearing File No. 6/18/2019-PPD dated 23.07.2020 and Order (Public Procurement No. 3) bearing File No. 6/18/2019-PPD, dated 24.07.2020,** as amended from time to time, regarding public procurement from a bidder of a country, which shares land border with India.	…….. 4. We hereby agree and undertake to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide **Order No. P-45021/2/2017-PP (BE-II)-Part (4) Vol.II dated 19.07.2024** for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard. We hereby also agree and undertake to comply with Department of Expenditure, Ministry of Finance **vide Order OM No. F.7/10/2021-PPD (1) dated 23.02.2023,** as amended from time to time, regarding public procurement from a bidder of a country, which shares land border with India.

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Amendment No. 02 (dated:23.12.2024) to RFP documents for Inter State Transmission Scheme "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" through tariff based competitive bidding process.

Sl. No.	Clause No.	Existing Clause	New/Revised Clause
1.	A.23.0	New Clause	RoW width and Span in different terrain shall be as per Schedule VII of CEA (Technical Standards for Construction of Electrical plants and Electric Lines) Regulations 2022 and RoW guidelines issued vide CEA-PS-14-86/2/2019-PSETD Division dated 24.09.2024.
2.	A.24.0	New Clause	The stringing of the transmission line in forest area shall be carried out through drone.
3.	A.25.0	New Clause	The tower shall be designed considering the porcelain Insulators with creepage factor of 31 mm/ kV irrespective of type of insulator used.
4.	Clause 2.1.1 of RFP and Article 4	The Bidder should be a company duly incorporated under the relevant laws (Bidding Company) or a Consortium of companies (Bidding Consortium) with one of the companies	The Bidder should be a company duly incorporated under the relevant laws (Bidding Company) or a Consortium of companies (Bidding Consortium) with one of the companies acting as the Lead Member of

	of TSA	acting as the Lead Member of the Bidding Consortium. The Bidder shall be selected on meeting the Qualification Requirements specified in Section 2 of this RFP, as demonstrated by the Bidder's Technical Bid and the lowest Quoted Transmission Charges discovered from Final Offers quoted during the e-reverse bidding. A Bidding Consortium can participate in the bidding process for the Project if any Member of the Consortium has purchased the RFP document for such Project. Bidder who agrees and undertake to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide Orders No. 11/5/2018 - Coord. dated 28.07.2020 for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard, shall be eligible hereunder. Further, it is clarified that Procuring Entity as defined in orders shall deemed to have included Selected Bidder and/ or TSP.	the Bidding Consortium. The Bidder shall be selected on meeting the Qualification Requirements specified in Section 2 of this RFP, as demonstrated by the Bidder's Technical Bid and the lowest Quoted Transmission Charges discovered from Final Offers quoted during the e-reverse bidding. A Bidding Consortium can participate in the bidding process for the Project if any Member of the Consortium has purchased the RFP document for such Project. Bidder who agrees and undertake to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide Orders No. P-45021/2/2017-PP (BE-II)-Part (4) Vol.II dated 19.07.2024 for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard, shall be eligible hereunder. Further, it is clarified that Procuring Entity as defined in orders shall deemed to have included Selected Bidder and/ or TSP.

5.	Clause 2.1.1 of RFP and Article 4 of TSA	Besides, Department of Expenditure, Ministry of Finance vide Order (Public Procurement No 1) bearing File No. 6/18/2019-PPD dated 23.07.2020, Order (Public Procurement No 2) bearing File No. 6/18/2019-PPD dated 23.07.2020 and Order (Public Procurement No. 3) bearing File No. 6/18/2019-PPD, dated 24.07.2020, as amended from time to time, have issued directions regarding public procurement from a bidder of a country, which shares land border with India are also applicable.	Besides, Department of Expenditure, Ministry of Finance vide, OM No. F.7/10/2021-PPD (1) dated 23.02.2023 as amended from time to time, have issued directions regarding public procurement from a bidder of a country, which shares land border with India are also applicable.
6.	Annexure 1 of RFP	…….. 4. We hereby agree and undertake to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide Orders No. 11/5/2018 - Coord. dated 28.07.2020 for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard. We hereby also agree and undertake to comply with Department of Expenditure, Ministry of Finance vide Order (Public Procurement No 1) bearing File No. 6/18/2019-PPD dated 23.07.2020, Order (Public Procurement No 2) bearing File No. 6/18/2019-PPD	…….. 4. We hereby agree and undertake to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide Order No. P-45021/2/2017-PP (BE-II)-Part (4) Vol.II dated 19.07.2024 for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard. We hereby also agree and undertake to comply with Department of Expenditure, Ministry of Finance vide Order OM No. F.7/10/2021-PPD (1) dated 23.02.2023, as amended from time to time, regarding public

		dated 23.07.2020 and Order (Public Procurement No. 3) bearing File No. 6/18/2019-PPD, dated 24.07.2020, as amended from time to time, regarding public procurement from a bidder of a country, which shares land border with India.	procurement from a bidder of a country, which shares land border with India.

S. N.	Clause No. and Existing provision	Clarification required	Clarifications
1.	RFP document General	Is Anantpur II greenfield station a pooling station or intermediate station? Whether for the location of station radius to be considered within 3km or 10km of BPC location?	The proposed location of Anantapur-II pooling station shall not be beyond 3 kms radius of the proposed location.
2.	RFP document Scope of work	There is no bus reactor in 400kV system. Also there is no bay allocated for bus reactor. Please confirm our understanding.	Bidder to follow the scope of work mentioned in RfP.
3.	RFP document Project completion period	The project completion period of 24 months from date of SPV transfer is practically not feasible. Request BPC to increase it to 36 months minimum from date of SPV transfer.	Bidder to follow the scope of work mentioned in RfP.
4.	RFP document BPC survey report	Request you to provide BPC survey report for this project in line with other TBCB projects. Also provide BPC location coordinates for greenfield Ananthapur II station.	Survey Report already shared with bidders dated 22.11.2024.
5.	RFP document Future scope of work	For 400kV future bus section, space for future bus reactors & its future bays is not mentioned in RFP & same need not be considered. Please confirm our understanding.	Bidder to follow the scope of work mentioned in RfP.

6.	RFP document Scope of work	What is the make & model of GIS at Cuddappah 765kV?	Refer clause B.1.2 (xii) of RfP for bay requirements at Cuddapah S/s.
7.	RFP document Scope of work	At Cudappah end, how much GIS bus duct length is required for both the bays?	GIS duct length is to be estimated by the bidder. Bidder may visit the site to get the existing details with respect to make and model of GIS.
8.	RFP document Scope of work	The 220kV 6 nos of line bays are for RE connectivity or for any other purpose? Request to clarify terminal scope with respect to line side equipments, CRP & bay for these lines.	The 220 kV line bays are for integration of RE generation projects. Further these line bays can also be utilised for drawl of power by STU/Bulk consumer. 220 kV line bays shall be complete in all respects including line side equipment and CRP etc. as per RfP.
9.	RFP document Scope of work	At Cuddappah GIS - As per scope of work, the GIS bays are already available at Cuddapah & there is no modification / augmentation required in the primary circuit of GIS bay. Also, please mention requirement and availability of PIR in the GIS bay breaker at site.	Refer clause B.1.2 (xii) of RfP with respect to bay requirements. Bidder may also visit the site for further existing details.
10.	RFP document Scope of work	Request you to provide SLD, substation layout, earthing layout and mark bay numbers / positions for line beays being terminated at Davangere & Cuddappah substation.	SLD and GA of existing Cuddapah S/s are already provided with the RfP.

			Developer of Davangere S/s is yet be finalised by the BPC. Drawings shall be obtained after finalisation by the developer of Davangere S/s.
11.	RFP document Annexure E.1 Clause (i) TSP shall ensure that NMS/EMS/NE supplied by them is NBI compliant and all FCAPS functionality is supported in the NBI such as NE Inventory, Hardware Inventory – Shelf/Slot/Card/SFP/Port, Topology, Protections, Alarms, Performance- real time and periodic, Performance KPI parameters (E-1, STM, Ethernet) , Remote Configuration, Cross Connects, Trails and Circuits, Services Provisioning (NE), E-1 , STM, Ethernet , TX and RS Trace, loop back and details are published in the NBI guide for the configuration parameters.	Please share details of existing central UNMS for integrating the supplied FOTE. We understand that connectivity from existing equipment to the central UNMS would be provisioned by PGCIL and respective State Power Transmission Company limited, please confirm.	Regarding first query- Please refer RFP Annexure E.1- to be complied for integration with regional NMS/UNMS. Regarding 2nd query: Yes and Please refer the relevant clause mentioned at Annexure E ('SPECIFIC TECHNICAL REQUIREMENTS FOR INTEGRATION OF COMMUNICATION EQUIPMENT WITH REGIONAL LEVEL NMS / REGIONAL UNMS) and E.1 of RFP and same to be complied by TSP for connectivity.

12.	RFP document Annexure D.4.0 Pg. 196 Clause (iii) FOTE/FODP panel shall be installed in any new Bay Kiosk (Switchyard Panel Room (SPR)). The FOTE under present scope shall be integrated by TSP with the existing FOTE at control room of Davangere PS which shall be communicating with respective control center.	Please share details (make and model) of existing FOTE panel at Davangere PS.	*Make & Model:* Tejas, TJ 1400
13.	RFP document Annexure D.5.0 Pg. 148 Clause (iii) FOTE/FODP panel shall be installed in any new Bay Kiosk (Switchyard Panel Room (SPR)). The FOTE under present scope shall be integrated by TSP with the existing FOTE at control room of Cuddapah S/S which shall be communicating with respective control center.	Please share details (make and model) of existing FOTE panel at Cuddapah S/S.	*Make & Model of FOTE:* GE, e-teraagdicom DXC-S
14.	RFP document Pg.194 Section: SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION	We understand connectivity of SCADA, AGC (wherever applicable), VoIP, AMR and PMU will be provisioned from existing FOTE at Cuddapah S/S and Davangere PS to Main control center, PDC and Backup	TSP to extend channels of SCADA, AGC (wherever applicable), VoIP, AMR and PMU etc. up to existing FOTE at Cuddapah S/s and Davangere PS thereafter regional ULDC team shall extend channels up to

TC

	The communication services viz. SCADA, AGC (wherever applicable), VoIP, AMR and PMU have been identified as critical services and therefore shall be provisioned with 2+2 redundancy i.e. 2 channels for Main Control Centre and 2 channels for Backup Control Centre. In order to meet this requirement, suitable redundancy at port and card level need to be ensured by the TSP to avoid any single point of failure which may lead to interruption in real-time grid operation.	Control center by PGCIL or respective state power transmission company limited. Please confirm.	Control Centre / backup control centre using NMS/ UNMS
15.	RFP document Annexure C.5.0 Pg. 147 PLCC and PABX	Kindly confirm if PLCC consisting of one set of analog PLCC channel along with circuit protection coupler and one set of Digital protection coupler is to be considered for 6 Nos. 220kV future line bays at Ananthapuram-II end only.	Refer clause D.7.0 of RfP where name of lines has been mentioned for which PLCC is required.
16.	RFP document B5.0 Extension of Existing substation	We assume that the existing SCADA at 765 kV Davangere S/s and 765 kV Cuddapah S/s will have sufficient hardware , software & tag capacity to integrate the new bays as per RFP. TSP will consider	Refer clause No. B.2.6 of RfP where requirements for augmentation of SAS are mentioned.

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		only the integration services of SCADA for the new bays with existing SAS system. Kindly confirm TSP understanding is correct.	Bidder may also visit the site for existing details.
17.	RFP document B.2.6 Substation Automation System	We understand that Substation SCADA data of existing bays at 765 kV Davangere S/s and 765 kV Cuddapah S/s is already reaching SLDC & RLDC through respective networks. For additional new bays TSP can connect SCADA data to existing network present at these Substation so that it can reach SLDC & RLDC.	Refer clause No. B.2.6 of RfP.
18.	RFP document B5.0 Extension of Existing substation	Please share the existing SCADA details of viz. Make , Model and Version of the SCADA and SAS architecture of 765 kV Davangere S/s and 765 kV Cuddapah S/s.	Refer clause No. B.2.6 of RfP where requirements for augmentation of SAS are mentioned.
19.	RFP document C.8.2.2 Operator Interface	Please share the reference architecture, IO list of Statcom for integration with SAS as well as with RLDC.	As per RfP, the same is in present scope and to be finalised by the TSP. TSP shall coordinate with respective RLDC for IO list of Statcom with associated coordination.
20.	RFP document D.6.0 Specific Requirement for Phasor Measurement Units (PMUs)	We assume that PMU at 765 kV Davangere S/s and 765 kV Cuddapah S/s is already present and not in scope of TSP.	PMUs are under the present scope. TSP shall provide PMUs as per RFP.
21.	RFP document B.1.2 clause no.Xii 765 kV Cuddapah S/s Extn. (GIS):	Kindly confirm whether Gas density monitor of 765 kV GIS Bus duct shall be monitored through existing LCC or separate LCC panel needs to be procured.	Bidder to meet the requirements of RfP either in existing LCC (in co-ordination with existing owner)/ new LCC.

22.	RFP document B.1.2 clause no.Xii 765 kV Cuddapah S/s Extn. (GIS):	Existing Plan and section layouts (pdf and Autocadd) at 765 kV Cuddapah S/S extension for proposed 2 no. of GIS and proposed Gantry area so that GIB length can be finalized accordingly.	SLD and GA of existing Cuddapah S/s are already provided with the RfP. Bidder may also visit the site for existing details.
23.	RFP document B.1.2 clause no.Xii 765 kV Cuddapah S/s Extn. (GIS):	SLD PG/PGCIL/CDP.EXTN./SLD-drg/001R2 GA TCE-XXXXX-4007-GA-40001R0 Above drawings are not available along with RFP. Request to pl provide the same.	Bidder may refer the uploaded RFP document.
24.	RFP document B.1.2 clause no.Xii 765 kV Cuddapah S/s Extn. (GIS):	Kindly confirm whether PIR are provided for existing Line and Tie Breakers for both the proposed 765 kV Anantpur II Cuddapah Lines?	Bidder may refer the uploaded RFP document. Further, bidder may also visit the site for existing details.
25.	RFP document Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW) Page no. 4 point no. 3	As per RFP, Point B.1.2 clause no.Xii 765 kV Cuddapah S/s Extn. (GIS):, two no. of 765 kV GIS bays (713 and 716) are already available at Cuddapah end. Only terminal equipments along with GIS bus duct and bushings needs to be considered at Cuddapah end. Kindly confirm.	Refer clause B.1.2 (xii) of RfP with respect to bay requirements.

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Sl. No.	Clause No.	Existing Clause	New/Revised Clause
1	D.1.0 (I) of RFP	TSP shall supply, install and commission 2 no. FODP (96F or higher) and 1 no. FODP (48F or higher) along with panel and approach Cable (24F each) with all associated hardware fittings from gantry tower to Control Room for all the incoming lines envisaged under the present scope.	TSP shall supply, install and commission 2 no. FODP (192F or higher) and 1 no. FODP (96F or higher) along with panel and approach Cable (48F each) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control Room for all the incoming lines envisaged under the present scope.
2.	D.2.0 (I) of RFP	On Ananthapuram-II – Davangere 765 kV D/C line, TSP shall supply, install and commission One (1) no. OPGW cable containing 24 Fibres (24F) on one E/W peak and conventional earth wire on other E/W peak.	On Ananthapuram-II – Davangere 765 kV D/C line, TSP shall supply, install and commission One (1) no. OPGW cable containing 48 Fibres (48F) on one E/W peak and conventional earth wire on other E/W peak. Proposed OPGW Hardware, Joint Box and other accessories shall be as per 48 Fiber OPGW.
3.	D.3.0 (I) of RFP	On Ananthapuram-II – Cuddapah 765 kV D/C line, TSP shall supply, install and commission One (1) no. OPGW cable containing 24 Fibres (24F) on one Earth Wire peak and conventional earth wire on other Earth Wire peak.	On Ananthapuram-II – Cuddapah 765 kV D/C line, TSP shall supply, install and commission One (1) no. OPGW cable containing 48 Fibres (48F) on one Earth Wire peak and conventional earth wire on other Earth Wire peak. Proposed OPGW Hardware, Joint Box and other accessories shall be as per 48 Fiber OPGW.
4.	D.4.0 of RFP	TSP shall supply, install and commission 1 no. FODP (72F or higher) alongwith panel and required Approach Cable (24F) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control room.	TSP shall supply, install and commission 1 no. FODP (144F or higher) alongwith panel and required Approach Cable (48F) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control room.

TC

5.	D.5.0 of RFP	TSP shall supply, install and commission 1 no. FODP (72F or higher) alongwith panel and required Approach Cable (24F) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control room.	TSP shall supply, install and commission 1 no. FODP (144F or higher) alongwith panel and required Approach Cable (48F) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control room.
6.	Annexure F Clause 3.3 of RFP	In case LILO lines are on same towers (e.g. both Line in and Line Out portion are on same towers, generally done LILO of S/C lines). Then 2x24F OPGW shall be required to install by TSP on both earthwire peak on 400 kV and 765 kV lines where two E/W peaks are available. On 220 and 132 kV lines where only one E/W peak is available TSP to install one no. 48F OPGW. Incase LILO lines are on different towers (e.g. both Line In and Line Out portion are on different towers, generally done LILO of D/C lines). Then 1x24F OPGW shall be required to install by TSP on one earthwire peak and conventional earthwire on second earthwire peak, on both Line In and Line Out portion towers of 400 kV and 765 kV lines. On 220 kV and 132 kV lines where only one E/W peak is available TSP to install one No. 24F OPGW in place of conventional earthwire	In case LILO lines are on same towers (e.g. both Line in and Line Out portion are on same towers, generally done LILO of S/C lines). Then 2x48F OPGW shall be required to install by TSP on both earthwire peak on 400 kV and 765 kV lines where two E/W peaks are available. On 220 and 132 kV lines where only one E/W peak is available TSP to install one no. 96F OPGW. Incase LILO lines are on different towers (e.g. both Line In and Line Out portion are on different towers, generally done LILO of D/C lines) Then 1x48F OPGW shall be required to install by TSP on one earthwire peak and conventional earthwire on second earthwire peak, on both Line In and Line Out portion towers of 400 kV and 765 kV lines. On 220 kV and 132 kV lines where only one E/W peak is available TSP to install one No. 48F OPGW in place of conventional earthwire.
7.	Annexure F Clause 3.4 of RFP	In case two different lines are using common multi circuit portion for some distance (originating from different stations, may be terminating on same or on different stations). Two No. 24F OPGW to be installed on both E/W peaks for common M/C portion of 765 kV and 400 kV lines. Incase 220/132 kV lines using multi circuit portion where single E/W peak is available one No. 48F may be installed for common multi circuit portion.	In case two different lines are using common multi circuit portion for some distance (originating from different stations, may be terminating on same or on different stations). Two No. 48F OPGW to be installed on both E/W peaks for common M/C portion of 765 kV and 400 kV lines. Incase 220/132 kV lines using multi circuit portion where single E/W peak is available one No. 96F may be installed for common multi circuit portion.

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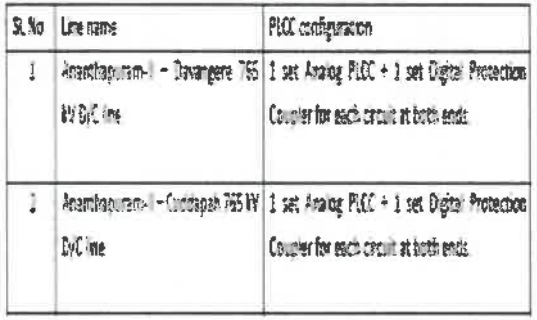
8.	A.25.0 New Clause	The tower shall be designed considering the porcelain Insulators with creepage factor of 31 mm/ kV irrespective of type of insulator used.	Deleted
9.	Name of SPV	**All the relevant clauses of RFP, TSA and SPA** "SPV [which is under incorporation]"	**All the relevant clauses of RFP, TSA and SPA** "SPV [which is under incorporation]" in the subject RFP, TSA and SPA may be read as " ANANTAPUR II REZ TRANSMISSION LIMITED"

Set-4 of Clarifications to RFP documents for Inter State Transmission Scheme "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"

Sl. No.	Clause No. and Existing provision	Bidder Queries	Clarification
1.	RFP SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION Sl. No. D.7.0 PLCC and PABX Power line carrier communication (PLCC) equipment complete for speech, tele-protection commands and data channels shall be provided on each transmission line.	Data channel requirement is mentioned in PLCC. Also, in clause no. (ii) of sections D.1.0, D.4.0 & D.5.0 for FOTE, it is mentioned "TSP shall provide the Communication Equipment with necessary interfaces to meet the **voice and data communication** requirement between…" BPC to confirm which communication protocol is to be used for data reporting to LDC. If Ethernet based protocol i.e. IEC 60870-5-104 is to be used than data channel is not required in PLCC.	PLCC channels shall be provided as per requirements of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022. Communication protocol to be used for data reporting to LDC through fiber optic communication system shall be IEC 60870-5-104.
2.	RFP SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION Sl. No. D.7.0 PLCC and PABX	1 set of Digital Protection Coupler requirement is mentioned in clause no. (vi) of section D.7.0 But in clause no. (ii) of sections D.1.0, D.4.0 & D.5.0 for FOTE, it is mentioned "TSP shall provide the Communication Equipment with necessary interfaces to meet the **voice and data communication** requirement between…" The above section refers that FOTE is to be used only for Data and voice communications.	Digital Protection Coupler shall be provided as per RfP. Pls also refer FAQ 3.1 of the RFP, where it is clearly mentioned" Communication systems e.g. OPGW, FOTE etc. & PMU are required for grid operation through RLDC/SLDC, speech communication, tele-protection and tele-metering."

Set-4 of Clarifications to RFP documents for Inter State Transmission Scheme "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"

Sl. No.	Clause No. and Existing provision	Bidder Queries	Clarification
		BPC to confirm if tele protection is envisaged from FOTE also.	
3.	RFP Bay configuration B1.2 x) & (i)	There is mismatch in bay configuration of 765kV, 400kV between two detail tables provided in clause (x) & i). Only one of these configurations can be adhered to. Request to provide clarity on this point as per discussion during Prebid meeting. Required for correct estimation of scope of work	Refer Amendment No. 4 issued dated 08.01.2025 in this regard.
4.	CEA letter dated 22-Nov-24: Facilitating Broadband expansion by allowing leasing of OPGW- regd. (Ref. Annexure-I: CEA letter)	In reference to CEA letter dated 22-Nov-2024; wherein, on request of DoT (Ministry of Communications) to Secretary -MoP for laying of atleast 48F (48 Fibers) OPGW in future transmission projects making provisions for leasing of additional fibers for the use of telecom licensee, CEA has requested CTU, STU	Refer Amendment No. 03 issued dated 06.01.2025 in this regard.

Set-4 of Clarifications to RFP documents for Inter State Transmission Scheme "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"

Sl. No.	Clause No. and Existing provision	Bidder Queries	Clarification
		& TSPs to incorporate 48F instead of 24 F in their future transmission schemes. Further, CEA has advised BPCs to modify the schemes which are currently under bidding, wherever applicable. BPC is requested to confirm if the bidders shall consider 24F or 48F OPGW in the subject bid.	
5.	Amendment No. 02 (dated:23.12.2024)	Sr. No. 1 A.23.0 New Clause: RoW width and Span in different terrain shall be as per Schedule VII of CEA (Technical Standards for Construction of Electrical plants and Electric Lines) Regulations 2022 and RoW guidelines issued vide CEA-PS- 14-86/2/2019-PSETD Division dated 24.09.2024 With reference to the referred clause, it is understood that the Spans mentioned in the regulation & guidelines are provided with intention to reduce the Transmission line impact on environment & also lower the ROW compensation.	In general Design span in the forest/urban/populated area shall be followed. However, at some particular locations if there is obstruction, the individual span may be changed provided RoW specified for the forest/urban/populated area as per CEA (Technical Standards for Construction of Electrical plants and Electric Lines) Regulations 2022 and RoW guidelines issued vide CEA-PS-14-86/2/2019-PSETD Division dated 24.09.2024 is not violated.

TC

Set-4 of Clarifications to RFP documents for Inter State Transmission Scheme "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"

Sl. No.	Clause No. and Existing provision	Bidder Queries	Clarification
		It is also understood that in terrain such as forest/ Urban/ Populated areas, TSP is free to evaluate the options available and finalize the best scenario from compliance as well as techno commercial point of view. Restriction of span in forest may lead to increased tree cutting as number of locations shall increase in forest. This may lead to rejection/revision of forest approval eventually delaying the completion of project. Also, unless the ROW width & spans are updated in MOEF guidelines, reduction in ROW width as specified in CEA regulations & guidelines may not be applicable.	
6.	Survey Report 6.0 Ananthapuram- II - Davangere 765 kV D/C Line 6.1 Coordinate of Both End	BPC is requested to confirm our understanding that the "**765kV** Davangere Greenfield substation" covered under separate package shall be classified as "Generation pooling substation" shall not be beyond 3 Km radius of the location proposed by the BPC in the survey report.	The substation location would not be beyond 3 kms radius of the location and the same is mentioned in survey report.
7.	RFP for Selection of Bidder as Transmission Service Provider	General	Bidder may refer Clause 1.3 of Section-1 of RfP.

Set-4 of Clarifications to RFP documents for Inter State Transmission Scheme "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"

Sl. No.	Clause No. and Existing provision	Bidder Queries	Clarification
		BPC is requested to confirm, whether the Project / Elements are covered under "Generation linked Project" or "System Strengthening Project.	
8.	RFP for Selection of Bidder as Transmission Service Provider	6.0 Ananthapuram- II - Davangere 765 kV D/C Line 6.1 Coordinate of Both End We understand that all substations (i.e Anantapur-II & Davangere) are classified as Generation pooling substation. The selected TSP can choose substation location within 3 km radius of the location proposed by the BPC in the survey report. As the Davangere substation location under separate package is not freeze, the route length of proposed 765 kV D/c line may differ based on actual location of substation and have cost impact on overall estimation. In an extreme case the route length of "765 kV D/c line" may increase upto ~ 6KM which will be approx.-6-7% of the project cost. We	Provisions of TSA are amply clear in this regard and shall prevail.

Set-4 of Clarifications to RFP documents for Inter State Transmission Scheme "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"

Sl. No.	Clause No. and Existing provision	Bidder Queries	Clarification
		understand that if such a situation occurs then it will be treated under change in law and TSP shall be compensated accordingly. Kindly confirm our understanding.	

Amendment-4 (dated:08.01.2025) to RFP Documents for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" through tariff based competitive bidding process.

<table>
<tr><th>Sl. No.</th><th>Clause No.</th><th>Existing Clause</th><th>New/Revised Clause</th></tr>
<tr><td>1</td><td>RFP
Specific Technical Requirements for Substation
Clause no. B.1.2 (x) (i)</td><td>
B.1.2 (x)
.....
(i) 400 kV Bus Sectionalization shall be with the following feeder distribution.
<table>
<tr><th>400 kV Bus Section-1</th><th>400 kV Bus Section-2 (Future)</th></tr>
<tr><td>a) 3 Nos. of 765/400 kV ICT
b) 6 Nos. of 400/220 kV ICT
c) 1 Nos. of STATCOM
d) 3 Nos. of Future 400/220 kV ICT
e) 6 Nos. of Future 400 kV Lines (with provision for Switchable line reactor)</td><td>a) 1 No. of 765/400 kV ICT
b) 2 Nos. of Future 765/400 kV ICT
c) 9 Nos. of Future 400/220 kV ICT
d) 6 Nos. of Future 400 kV Lines (with provision for Switchable line reactor)</td></tr>
</table>
.....
</td><td>
B.1.2 (x)
.....
(ii) 400 kV Bus Sectionalization shall be with the following feeder distribution.
<table>
<tr><th>400 kV Bus Section-1</th><th>400 kV Bus Section-2 (Future)</th></tr>
<tr><td>a) 3 Nos. of 765/400 kV ICT
b) 5 Nos. of 400/220 kV ICT
c) 1 Nos. of STATCOM
d) 4 Nos. of Future 400/220 kV ICT
e) 6 Nos. of Future 400 kV Lines (with provision for Switchable line reactor)</td><td>a) 1 No. of 765/400 kV ICT
b) 1 Nos. of 400/220 kV ICT
c) 2 Nos. of Future 765/400 kV ICT
d) 8 Nos. of Future 400/220 kV ICT
e) 6 Nos. of Future 400 kV Lines (with provision for Switchable line reactor)</td></tr>
</table>
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</td></tr>
</table>

Sl. No.	Clause No.	Existing Clause	New/Revised Clause
2.	SPECIFIC TECHNICAL REQUIREMENTS FOR STATCOM	**C.6.1 STATCOM Station Ratings** d) The STATCOM Stations shall continue to inject reactive power during temporary under voltage down to 60 kV (0.15 p.u.) for the duration 0.3 sec (Point C) and STATCOM behavior for voltages above 0.15 p.u. shall be as specified under section C.5 above; the STATCOM system may be **tripped (or** blocked) if the under voltage persists for time beyond limits specified under section C.5 above	**C.6.1 STATCOM Station Ratings** d) The STATCOM Stations shall continue to inject reactive power during temporary under voltage down to 60 kV (0.15 p.u.) for the duration 0.3 sec (Point C) and STATCOM behavior for voltages above 0.15 p.u. shall be as specified under section C.5 above; the STATCOM system may be ~~**tripped (or**~~ blocked if the under voltage persists for time beyond limits specified under section C.5 above.

Sl. No.	Clause No. and Existing provision	Clarification Required	Clarification
1.	RFP Clause 765/400/220kV Ananthpuram-II SS Amendment-4 & NOTE:- X (i) & (2)	**As per Amendment-4** **B.1.2 (X)** **400 kV Bus Sectionalization shall be with the following feeder distribution.** Section-1 a. 3 Nos. of 765/400 kV ICT b. 5 Nos. of 400/220 kV ICT c. 1 Nos. of STATCOM d. 4 Nos. of Future 400/220 kV ICT e. 6 Nos. of Future 400 kV Lines (with provision for Switchable line reactor) Section-2 a. 1 No. of 765/400 kV ICT b. 1 No. of 400/220 kV ICT c. 2 Nos. of Future 765/400 kV ICT d. 8 Nos. of Future 400/220 kV ICT e. 6 Nos. of Future 400 kV Lines (with provision for Switchable line reactor) **And As per RFP NOTE- X) (ii)** **220 kV Bus Sectionalization shall be with the following feeder distribution.** Section-1	Refer Amendment No. 05 regarding feeder distribution in future bus sections.

TC

Sl. No.	Clause No. and Existing provision	Clarification Required	Clarification
		a. 4 Nos. of 400/220 kV ICT b. 5 Nos. of 220 kV Lines Section-2 a. 2 Nos. of 400/220 kV ICT b. 1 No. of 220 kV Lines c. 2 Nos. of future 400/220 kV ICT d. 4 Nos. of future 220 kV Line. Section-3 a. 5 Nos. of future 400/220 kV ICT b. 8 Nos. of future 220 kV Lines Section-4 a. 5 Nos. of future 400/220 kV ICT b. 8 Nos. of future 220 kV Lines From the above feeder distribution there is six nos. of 400/220kV ICT available to terminate in 220kV bus section 3 and four nos. for bus section 4 400kV & 220kV feeder distributions are not matching BPC to confirm the feeder distribution. The following is being suggested for amendment:	

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Sl. No.	Clause No. and Existing provision	Clarification Required	Clarification
		220 kV Bus Sectionalization shall be with the following feeder distribution. Section-1 4 Nos. of 400/220 kV ICT 5 Nos. of 220 kV Lines Section-2 2 Nos. of 400/220 kV ICT 1 No. of 220 kV Lines 2 Nos. of future 400/220 kV ICT 4 Nos. of future 220 kV Line. Section-3 6 Nos. of future 400/220 kV ICT 8 Nos. of future 220 kV Lines Section-4 4 Nos. of future 400/220 kV ICT 8 Nos. of future 220 kV Lines	
2.	Network Data and PSS/E files 1 *This is to inform that PSSE files for Indian National Grid is for internal circulation, considering the security of the Grid.*	You may appreciate that PSSE files are required for various studies to be done by bidder to check system stability and to finalize technical specifications of the Statcom systems these studies require reasonable time and efforts.	The relevant PSSE file & Dynamic data shall be shared with successful bidder with the limited use for the purpose of STATCOM studies for specific project only.

Sl. No.	Clause No. and Existing provision	Clarification Required	Clarification
	Therefore, it may not be appropriate to share the PSSE file with the prospective bidders, who may or may not participate in the bidding process. However, if any other data is required for studies of STATCOM such as Short Circuit values, fault contributions from different feeders, X/R ratio etc. may be provided on the requests. 2 *Further, the relevant PSSE file & Dynamic data shall be shared with successful bidder with the limited use for the purpose of STATCOM studies for specific project only.*	Please note that based on executed and under execution projects including Statcom, it has been observed that the final PSSE files provided to the successful bidder are incomplete (i.e. missing dynamic model and parameters) and not converging during simulation. Use of generic models and tuning to get the file converging under such cases take considerable time and effort which impacts project timeline. Further, you shall appreciate that it is difficult to estimate the time that will be required for tuning and rectification to get the file converging. Hence, without studying the PSSE files it is impossible to estimate the time and effort required for convergence and rectification. As the duration required for study is crucial in estimation of time and cost of the project, BPC is requested to share PSSE files **at bidding stage itself.**	However, if any other data is required for studies of STATCOM may be provided on request.
3.		In case of PSSE files **are not** being provided during bidding stage itself and for estimation at bid stage. a. BPC is requested to provide following minimum data about the network for the STATCOM Bus and nearby buses upto 2 levels from STATCOM Bus (under light load and peak load condition): 1. X/R ratio 2. Short Circuit ratio and Short Circuit MVA 3. Fault contribution from feeders 4. Fault level	The data to the extent required is already provided in the RfP under clause C.5. Bidder may carry out preliminary studies with the data provided in the RfP. CTU have not received the Connectivity applications for full quantum of Pooling Station. Further this is suitable for integration of PSP projects identified by Govt. of Andhra

Sl. No.	Clause No. and Existing provision	Clarification Required	Clarification
		As stated in above Sr.1 query, that the final PSSE files provided to the successful bidder are incomplete (i.e. missing dynamic model and parameters) and not converging during simulation. Use of generic models and tuning to get the file converging under such cases take considerable time and effort which impacts project timeline. Hence, we understand that that BPC shall ensure that the final PSSE files that will be provided to the successful bidder are complete, error free and converging under load flow and dynamic cases. Please confirm.	Pradesh. Therefore, at moment for preliminary studies, determination of Short Circuit ratio and Fault contribution from feeders may be tentative and may vary in the PSSE files. Accordingly, detailed studies may be carried out by successful bidder upon transfer of SPV. CTU shall provide the PSSE files to successful bidder.
4.	Network Data and PSS/E files *Further, the relevant PSSE file & Dynamic data shall be shared with successful bidder with the limited use for the purpose of STATCOM studies for specific project only.*	In case of PSSE files **are not** being provided during bidding stage itself and for estimation at bid stage please confirm the following: 1. Relevant PSSE file which is converging in different load case shall be provided with successful bidders on or before the SPV transfer date. Please confirm 2. In case of delay in handing over of the "relevant PSSE file which is converging in different load cases", with the successful bidders on or before the SPV transfer date, then the successful bidder shall be suitably compensated for the time & cost accordingly Please confirm.	The relevant data for PSSE file & Dynamic data shall be shared with successful bidder with the limited use for the purpose of STATCOM studies for specific project only. Accordingly, bidders shall submit their bids and no compensation shall be allowed.

<table>
<tr><th>Sl. No.</th><th>Clause No. and Existing provision</th><th>Clarification Required</th><th>Clarification</th></tr>
<tr><td></td><td></td><td>Further, in case of delay & effort required to correct the file for converging shall also be compensated to successful bidder in terms of its time & cost in suitable mechanism. Please confirm.</td><td></td></tr>
<tr><td>5.</td><td>Specific technical requirement for S/s
Clause no B.1.1
Insulation Coordination
The system design parameters for substations/switchyards shall be as given below:
<table>
<tr><th>Sl. No.</th><th>Description of parameters</th><th colspan="3">765/400/220 kV Ananthapuram-II PS (AIS)</th><th>765 kV Davangere S/s Extn.</th><th>765 kV Cuddapah S/s Extn.</th></tr>
<tr><td></td><td></td><td>765 kV System</td><td>400 kV System</td><td>220 kV System</td><td>765 kV System</td><td>765 kV System</td></tr>
<tr><td>1.</td><td>System Operating Voltage</td><td>765 kV</td><td>400 kV</td><td>220 kV</td><td>765 kV</td><td>765 kV</td></tr>
<tr><td>2.</td><td>Maximum voltage of the system (rms)</td><td>800 kV</td><td>420 kV</td><td>245 kV</td><td>800 kV</td><td>800 kV</td></tr>
<tr><td>3.</td><td>Rated Frequency</td><td>50 Hz</td><td>50 Hz</td><td>50 Hz</td><td>50 Hz</td><td>50 Hz</td></tr>
<tr><td>4.</td><td>No. of Phases</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td>5.</td><td>Rated Insulation Levels</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>i)</td><td>Lightning Impulse Withstand Voltage for (1.2/50 micro sec.)
- For Equipment other than Transformer and Reactor
- for Insulator String</td><td>2100 kVp
2100 kVp</td><td>1425 kVp
1550 kVp</td><td>1050 kVp
1050 kVp</td><td>2100 kVp
2100 kVp</td><td>2100 kVp
2100 kVp</td></tr>
<tr><td>ii)</td><td>Switching Impulse Withstand Voltage</td><td>1550 kVp</td><td>1050 kVp</td><td>--</td><td>1550 kVp</td><td>1425 kVp</td></tr>
</table>
<table>
<tr><th>Sl. No.</th><th>Description of parameters</th><th colspan="3">765/400/220 kV Ananthapuram-II PS (AIS)</th><th>765 kV Davangere S/s Extn.</th><th>765 kV Cuddapah S/s Extn.</th></tr>
<tr><td></td><td></td><td>765 kV System</td><td>400 kV System</td><td>220 kV System</td><td>765 kV System</td><td>765 kV System</td></tr>
<tr><td></td><td>(250/2500 micro sec.) dry and wet</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>iii)</td><td>One minute power frequency dry withstand voltage (rms)</td><td>850 kV</td><td>650 kV</td><td>--</td><td>830 kV</td><td>960 kV</td></tr>
</table></td><td>In the given table 5. ii) Switching Impulse withstand voltage for Cuddapah S/s Extn. is 1425kVp and in 5. iii) One minute power frequency dry withstand voltage (rms) for Cuddapah S/s Extn. is 960kV.

However, for 765kV system, Switching Impulse withstand voltage shall be 1550kVp. Please confirm.

Also, please confirm that the given "One minute power frequency dry withstand voltage (rms) for Cuddapah S/s Extn. is 960kV" is for SF6 to Air Bushing only. Also, provide the same for Outer Bus duct.

Bidder needs information for proper estimation</td><td>Parameters mentioned in RfP are as per CEA regulations. Hence, Bidder shall follow the requirements of RfP/ CEA regulations.</td></tr>
<tr><td>6.</td><td>Specific Technical Requirement for STATCOM
For ±300 MVAR STATCOM:</td><td>Bidder understand that for "Option 3 i.e. Full STATCOM option", circuit breaker at MV-level will not be applicable and hence for "Any fault (bus/branch) on MV side will trip the 400kV breaker."</td><td>Acceptable.</td></tr>
</table>

TC

Sl. No.	Clause No. and Existing provision	Clarification Required	Clarification
	Option 1: ±300 MVAr STATCOM, 2x125 MVAr Mechanically switched Shunt Reactor (MSR). **Option 2**: +300/-425 MVAr STATCOM, 1x125 MVAr Mechanically switched Shunt Reactor (MSR). **Option 3**: +300/-550 MVAr STATCOM	Bidder understand that the key requirements of MV-CB is based on switching requirement of MSR and hence as in case of option-3 MSR are not required, bidder recommend to amend the requirement of MV-CB in case of option-3 suitably. Please confirm.	
7.	Annexure-I Details of System Studies to be performed Contingency Cases for Ananthapuram-II STATCOM	1. To perform the subsequent contingency (Single phase fault) zero Sequence Impedance of power system models (Transformer, Transmission Line, Machines, etc..), needs to be furnished at the time of/before Award of Contract 2. Please Specify the contingency Bus names and numbers as per PSSE data.	The relevant data for PSSE file & Dynamic data shall be shared with successful bidder with the limited use for the purpose of STATCOM studies for specific project only. However, the list of contingencies has already been provided in the RfP document and the relevant buses can be identified by their names upon receipt of the above PSSE files.
8.	Annexure-I Details of System Studies to be performed A) N-1 Contingency	Contingency cases has been given for 765kV and 400kV level only. Please confirm that no other contingency cases is to be considered at 220kV level for study purposes.	Confirmed
9.	Annexure-I Details of System Studies to be performed B) N-1-1 Contingency	Contingency cases has been given for 765kV level only. Please confirm that no other contingency cases is to be considered at 400kV & 220kV level for study purposes.	Confirmed

Amendment-5 (Dated:30.01.2025) to RFP Documents for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" through tariff based competitive bidding process.

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Specific Technical Requirements for Substation
Clause no. B.1.2 (x) (ii)</td><td>
B.1.2 (x)
.....
(ii) 220 kV Bus Sectionalization shall be with the following feeder distribution.
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<tr><th>220kV Bus Section-1</th><th>220kV Bus Section-2</th></tr>
<tr><td>a) 4 Nos. of present 400/220 kV ICTs
b) 5 Nos. of present 220 kV Lines</td><td>a) 2 No. of present 400/220 kV ICTs
b) 1 No. of present 220 kV Line
c) 2 No. of future 400/220 kV ICT
d) 04 Nos. future 220 kV Line.</td></tr>
<tr><th>220kV Bus Section-3 (Future)</th><th>220kV Bus Section-4 (Future)</th></tr>
<tr><td>a) 05 Nos. future 400/220 kV ICT.
b) 08 Nos. future 220 kV Lines.</td><td>a) 05 Nos. future 400/220 kV ICT.
b) 08 Nos. future 220 kV Lines.</td></tr>
</table>
.....
</td><td>
B.1.2 (x)
.....
(iii) 220 kV Bus Sectionalization shall be with the following feeder distribution.
<table>
<tr><th>220kV Bus Section-1</th><th>220kV Bus Section-2</th></tr>
<tr><td>a) 4 Nos. of present 400/220 kV ICTs
b) 5 Nos. of present 220 kV Lines</td><td>a) 2 No. of present 400/220 kV ICTs
b) 1 No. of present 220 kV Line
c) 2 No. of future 400/220 kV ICT
d) 04 Nos. future 220 kV Line.</td></tr>
<tr><th>220kV Bus Section-3 (Future)</th><th>220kV Bus Section-4 (Future)</th></tr>
<tr><td>a) 06 Nos. future 400/220 kV ICT.
b) 10 Nos. future 220 kV Lines.</td><td>a) 04 Nos. future 400/220 kV ICT.
b) 06 Nos. future 220 kV Lines.</td></tr>
</table>
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</td></tr>
</table>

Amendment-5 (dated:30.01.2025) to RFP Documents for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" through tariff based competitive bidding process.

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Specific Technical Requirements for Substation
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b) 5 Nos. of present 220 kV Lines</td><td>a) 2 No. of present 400/220 kV ICTs
b) 1 No. of present 220 kV Line
c) 2 No. of future 400/220 kV ICT
d) 04 Nos. future 220 kV Line.</td></tr>
<tr><th>220kV Bus Section-3 (Future)</th><th>220kV Bus Section-4 (Future)</th></tr>
<tr><td>a) 05 Nos. future 400/220 kV ICT.
b) 08 Nos. future 220 kV Lines.</td><td>a) 05 Nos. future 400/220 kV ICT.
b) 08 Nos. future 220 kV Lines.</td></tr>
</table>
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</td><td>
B.1.2 (x)
……..
(ii) 220 kV Bus Sectionalization shall be with the following feeder distribution.
<table>
<tr><th>220kV Bus Section-1</th><th>220kV Bus Section-2</th></tr>
<tr><td>a) 04 Nos. of present 400/220 kV ICTs
b) 05 Nos. of present 220 kV Lines</td><td>a) 02 Nos. of present 400/220 kV ICTs
b) 01 Nos. of present 220 kV Line
c) 03 Nos. of future 400/220 kV ICT
d) 06 Nos. future 220 kV Line.</td></tr>
<tr><th>220kV Bus Section-3 (Future)</th><th>220kV Bus Section-4 (Future)</th></tr>
<tr><td>a) 05 Nos. future 400/220 kV ICT.
b) 08 Nos. future 220 kV Lines.</td><td>a) 04 Nos. future 400/220 kV ICT.
b) 06 Nos. future 220 kV Lines.</td></tr>
</table>
……
</td></tr>
</table>

Sl. No.	Clause No. and Existing provision	Clarification Required	Clarification
1.	Specific Technical Requirement for STATCOM **For ±300 MVAR STATCOM:** **Option 1**: ±300 MVAr STATCOM, 2x125 MVAr Mechanically switched Shunt Reactor (MSR). **Option 2**: +300/-425 MVAr STATCOM, 1x125 MVAr Mechanically switched Shunt Reactor (MSR). **Option 3**: +300/-550 MVAr STATCOM	Bidder understand that for "Option 3 i.e. Full STATCOM option", circuit breaker at MV-level will not be applicable and hence for "Any fault (bus/branch) on MV side will trip the 400kV breaker." Bidder understand that the key requirements of MV-CB is based on switching requirement of MSR and hence as in case of option-3 MSR are not required, bidder recommend to amend the requirement of MV-CB in case of option-3 suitably. Please confirm.	For Option 3, MV breaker is optional in case only single branch is connected to MV side of coupling transformer.
2.	Section-1, Clause 1.2 Note: i. POWERGRID shall provide space for 2 Nos. of 765 kV GIS line bays (only 765 kV line terminal equipments) at Cuddapah for termination of Ananthapuram-II PS – Cuddapah 765 kV D/C line. ii. Developer of Davanagere PS shall provide space for 2 Nos. of 765 kV line bays at Davanagere PS for termination of Ananthapuram-II PS – Davanagere 765 kV D/C	Bidder understands that the land required for the extension work to be done at Cuddapah SS shall be provided to TSP free of cost by respective SS owners. Please confirm.	2 nos. of 765 kV GIS bays are already available at Cuddapah and the same is to be utilised for termination of Ananthapuram-II PS – Cuddapah 765 kV D/c line. However, 765 kV line terminal equipment are required for the termination of above line. Kindly refer clause B.1.2 (xii) of RfP. Bidder may visit the Cuddapah site to get the details.

Sl. No.	Clause No. and Existing provision	Clarification Required	Clarification
3.	Specific technical requirements for STATCOM C 6.7 Loss Requirement	BPC is requested to state how the STATCOM system losses are cost evaluated, and which cost of losses should be considered in the evaluation of the bid.	As per the RfP there is no provision of cost evaluation of STATCOM losses. Bidder shall meet the requirement of losses mentioned in the RfP.

Sl. No.	Clause No.	Existing Clause	New/Revised Clause
1.	A.7.0	(A) For power line crossing of 400 kV or above voltage level large angle and dead end towers (i.e. D/DD/QD) shall be used on either side of power line crossing. (B)For power line crossing of 132 kV and 220 kV (or 230 kV) voltage level, angle towers (B/C/D/DB/DC/DD/QB/QC/QD) shall be used on either side of power line crossing depending upon the merit of the prevailing site condition and line deviation requirement. (C)For power line crossing of 66 kV and below voltage level, suspension/tension towers shall be provided on either side of power line crossing depending upon the merit of the prevailing site condition and line deviation requirement. (D)For crossing of railways, national highways and state highways, the rules/ regulations of appropriate authorities shall be followed.	**(A) Under crossing of the existing transmission line of same Voltage shall not be allowed. In the case where it is inevitable to under-cross the existing transmission line then TSP shall seek prior approval from Chief Electrical Inspector, CEA with detailed study ensuring that all statutory electrical clearances and Electric Field limit of 10 kV/m at 1 m and 1.8 m from ground level is not violated.** (B) For power line crossing of 400 kV or above voltage level large angle and dead end towers (i.e. D/DD/QD) shall be used on either side of power line crossing. (C) For power line crossing of 132 kV and 220 kV (or 230 kV) voltage level, angle towers (B/C/D/DB/DC/DD/QB/QC/QD) shall be used on either side of power line crossing depending upon the merit of the prevailing site condition and line deviation requirement.

+C

			(D)For power line crossing of 66 kV and below voltage level, suspension/tension towers shall be provided on either side of power line crossing depending upon the merit of the prevailing site condition and line deviation requirement. (E)For crossing of railways, national highways and state highways, the rules/ regulations of appropriate authorities shall be followed.
2.	A.23.0	**New Clause**	**The stringing of the transmission line in forest area shall be carried out through drone.**
3.	A.24.0	**New Clause**	**The tower shall be designed considering the porcelain Insulators with creepage factor of 31 mm/ kV irrespective of type of insulator used.**

TC

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION, NEW DELHI

PETITION NO. /TL/2025

IN THE MATTER OF:

Anantapur II REZ Transmission Limited **...PETITIONER**

VERSUS

Central Transmission Utility of India Limited & Ors. **...RESPONDENTS**

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THROUGH

MATRUGUPTA MISHRA/ SWAGATIKA SAHOO
NIPUN DAVE/ SONAKSHI/ AKANSHA V. INGOLE
ADVOCATES FOR THE PETITIONER

M/S. RITAM LEGAL,
ADVOCATES AND ADVISORY,
M-15, FIRST FLOOR,
SOUTH EXTENSION PART 2
NEW DELHI-110049.
PHONE: +91-11-43552390-91
E-MAIL: desk@ritamlegal.com

PLACE: NEW DELHI
DATE: 07.04.2025

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पीएफसी कंसल्टिंग लिमिटेड
(पावर फाइनेंस कॉर्पोरेशन लिमिटेड की पूर्णतःस्वामित्वाधीन सहायक कम्पनी)
PFC CONSULTING LIMITED
(A wholly owned subsidiary of Power Finance Corporation Limited)
CIN U74140DL2008GOI175858

Ref. No. 04/ITP-97/24-25/RFP **October 24, 2024**

To
Secretary,
Central Electricity Regulatory Commission,
3rd Floor, Chanderlok Building,
Janpath, Connaught Place,
New Delhi – 110001.

Subject: Intimation about initiation of the bid process for selection of Transmission Service Provider (TSP) for establishing transmission system for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" and issuance of RFP Document.

Dear Sir,

Ministry of Power vide Gazette Notification no. **CG-DL-E-13092024-257122** dated September 12, 2024, has appointed PFC Consulting Limited (PFCCL) as Bid Process Coordinator (BPC) to undertake the bid process for the selection of Transmission Service Provider (TSP) for establishing **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"** in accordance with the Guidelines namely "Tariff based Competitive Bidding Guidelines for Transmission Service" and "Guidelines for encouraging Competition in Development of Transmission Projects" issued by Ministry of Power.

The Request for Proposal (RFP) process has been initiated on October 15, 2024, with the publication of RFP notification in:

i) Hindustan Times (English) – All Edition
ii) Mint (English) – All Edition
iii) Hindustan (Hindi) – All Editions
iv) Financial Times (Worldwide) – All Editions

The same has also been made available along with the RFP documents on the PFCCL website 'www.pfcclindia.com' w.e.f. 08 May, 2024. It may be noted that these RFP Documents are based on the Single Stage Two Envelope (RFQ & RFP combined) based Standard Bidding Documents (SBD) issued by the Ministry of Power on August 06, 2021, and project-specific inputs furnished by Central Transmission Utility of India Limited (CTUIL) and Central Electricity Authority (CEA). The last date for submission of Responses to RFP is December 19, 2024.

As per the requirements of the Guidelines (Clause 4.2 of Tariff-based Competitive-bidding Guidelines for Transmission Service), we hereby inform the Commission about the initiation of

पंजीकृत कार्यालय : प्रथम तल "ऊर्जानिधि", 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली-110001
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Corporate Office : 9th Floor (A Wing) Statesman House, Connaught Place, New Delhi-110001 Phone : 011-23443900 Fax : 011-23443990
ई-मेल/E-mail : pfcconsulting@pfcindia.com वेबसाईट/Website : www.pfcclindia.com

PFC CONSULTING LTD.

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(पावर फाइनेंस कॉर्पोरेशन लिमिटेड की पूर्णतःस्वामित्वाधीन सहायक कंपनी)
PFC CONSULTING LIMITED
(A wholly owned subsidiary of Power Finance Corporation Limited)
CIN U74140DL2008GOI175858

the bid process for the selection of a Transmission Service Provider (TSP) for establishing a transmission system for "**Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)**" We are also enclosing herewith the RFP documents for your kind information, perusal, and records please.

Thanking You,

Yours sincerely,

Naveen Phougat)
General Manager

Encl.: As Above

पंजीकृत कार्यालय : प्रथम तल "ऊर्जानिधि", 1 बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली-110001
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ई मेल/E-mail : pfcconsulting@pfcindia.com वेबसाईट/Website : www.pfcindia.com

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GLOBAL INVITATION (THROUGH E-BIDDING ONLY)

FOR SELECTION OF TRANSMISSION SERVICE PROVIDER ON BUILD, OWN, OPERATE AND TRANSFER (BOOT) BASIS FOR INTER-STATE TRANSMISSION PROJECTS

PFC Consulting Limited, a wholly owned subsidiary of Power Finance Corporation Limited (A Government of India Undertaking), invites proposals for setting up of transmission projects on Build, Own, Operate and Transfer (BOOT) basis following single stage two envelope process of 'Request for Proposal' (RFP).

Interested bidders may refer to the RFP notification and RFP documents available on the website https://www.mstcecommerce.com and https://www.pfcclindia.com.

The Bidders may obtain the RFP documents on all working days between 10:30 hrs (IST) and 16:00 hrs (IST) from 15.10.2024 to one working day prior to bid submission for the projects mentioned below on payment of a non-refundable fee of Rs. 5,00,000/- or USD 7,000 plus applicable GST @18% from 9th Floor, Wing A, Statesman House, Connaught Place, New Delhi - 110001, Tel: 91-11-23443996; Fax: 91-11-23443990; e-mail: pfccltp@pfcindia.com. The RFP documents can also be downloaded from https://www.mstcecommerce.com and https://www.pfcclindia.com, however, in such case, interested party can submit Response to RFP only on submission of non-refundable fee of Rs. 5,00,000/- or USD 7,000 plus applicable GST @18% separately. The survey report and clarification to RFP documents shall be issued to those bidders, who have obtained/ purchased RFP documents by paying requisite fee at least one working day prior to bid submission date. Bidders should regularly visit website to keep themselves updated regarding clarifications/ amendments/ time extensions etc., if any. The important timelines in this regard are as follows:

S. No.	Name of Transmission Scheme	Last Date for seeking clarifications (dd/mm/yyyy)	Last Date for submission of response to RFP (dd/mm/yyyy)	Date of opening of Response to RFP (dd/mm/yyyy)
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recognised accounting practices and policies to the extent applicable.

5. The above is an extract of the detailed format of quarterly/annual financial results filed with the Stock Exchanges under Regulation 33 of the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015. The full formats of the quarterly/annual financial results are available on the websites of the Stock Exchanges, www.nseindia.com, www.bseindia.com, and on the Company's website, www.hcltech.com.

By the order of the Board of Directors
for HCL Technologies Limited

Roshni Nadar Malhotra
Chairperson
DIN - 02346621

C. Vijayakumar
Chief Executive Officer and
Managing Director
DIN - 09244485

Shiv Walia
Chief Financial Officer

Noida (UP), India
14 October 2024

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(Enterprise)

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By the order of the Board of Directors
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Roshni Nadar Malhotra	C. Vijayakumar	Shiv Walia
Chairperson	Chief Executive Officer and Managing Director	Chief Financial Officer
DIN : 02346621	DIN : 09244485	

Noida (UP), India
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GLOBAL INVITATION THROUGH BIDDING ONLY

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By the order of the Board of Directors
for HCL Technologies Limited

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Chairperson
DIN - 02346621

C. Vijayakumar
Chief Executive Officer and
Managing Director
DIN - 09244485

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Chief Financial Officer

Noida (UP), India
14 October 2024

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PFC CONSULTING LIMITED

(A wholly owned subsidiary of PFC Ltd.)
Regd. Office: First Floor, Urjanidhi, 1, Barakhamba Lane, Connaught Place, New Delhi 110001, (India) Fax : 011-23443990

GLOBAL INVITATION (THROUGH E-BIDDING ONLY)

FOR SELECTION OF TRANSMISSION SERVICE PROVIDER ON BUILD, OWN, OPERATE AND TRANSFER (BOOT) BASIS FOR INTER-STATE TRANSMISSION PROJECTS

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Bid Process Coordinator
(A wholly owned subsidiary of PFC Ltd.)
(A Govt. of India Undertaking)

An Initiative of
Ministry of Power
Government of India

Initiative Partner
Central Electricity Authority

Limited
(An Enterprise)
. 13/24
s on fixed term basis as per details

Required Qualification
B.Sc. in Agriculture Science from a recognized university/college/ institute

:.co.in or careers section at eligibility criteria, upper age limit, nerations, other terms & conditions f application will be accepted. The nain open for the period from r addendum/ corrigendum/updates

ower Sector

DUSTRIAL DEVELOPMENT CORPORATION LTD.
overnment Undertaking)
2005, Phone-0141-2227751, 4593201
Website-www.rico.co.in

NOTICE

vice rajasthan.gov.in for the following works/

	Estimated Cost (Rs.in Lacs)
uctures at Industrial Area	520.63

tender online. Detailed information of tenders , if any in future, may be seen by bidders on than.gov.in
4593243 Raj.Samvad/C/24/6537

ड (भरतपुर) राजस्थान
Date :- 04/10/2024

सूचना
कार्यों की निविदायें आमंत्रित की जाती है –

निविदा का माध्यम	यूबीएन नम्बर
ऑनलाईन	CDF2425SLRC00723
सील बन्द लिफाफा	CDF2425GSOB00721
सील बन्द लिफाफा	CDF2425GSRC00722
सील बन्द लिफाफा	CDF2425SSRC00720

दा प्रपत्र मय शर्तों के विभाग की वेबसाईट rajasthan.gov.in, https://eproc.rajasthan.gov.in
हस्ताक्षर,
सीएमओ भरतपुर

Catch the latest column of

HT TWTW

THE WEEK THAT WAS

A quiz on the week's development



Mint (E) - Bengaluru - 15/10/2024

TC

RAJASTHAN STATE INDUSTRIAL DEVELOPMENT & INVESTMENT CORPORATION LTD.

(A Rajasthan Government Undertaking)

Jdyog Bhawan, Tilak Marg, Jaipur- 302005, Phone- 0141-2227751, 4593201
E mail: dicog@rico.co.in Website-www.rico.co.in

TENDER NOTICE

...tender/bids through eproc.rajasthan.gov.in for the following works/ ...

Name of Work	Estimated Cost (Rs.in Lacs)
...pad, Bhiwadi-II	
...ction of Rain Water Harvesting Structures at Industrial Area ... Code RDC2425WHO801218	520.63

...structions for download and submit tender online. Detailed information of tenders ...al of corrigendum/ date extension, if any in future, may be seen by bidders on ... www.rico.co.in and www.eproc.rajasthan.gov.in
...ase contact GM (Civil) Ph. 0141-4593243 Raj.Samvad/C/24/6537

MAHATRANSCO — E TENDER NOTICE

...RANSCO ... Transmission Co. Ltd.

...CL invites online bids (E Tender) from registered ...ctors / agencies on Mahatransco E-Tendering website ...mahatransco.in; for following works.

...der ... all) No.: CE/EHV PC O&M Zone/Pune/T-55/2024, ...0034128

...: ...tender (5th call) for the Work Contract for Installation, ... and Commissioning of 125 MVAr, 400 kV Bus Reactor along ...y bay at 400 kV Chakan s/s and replacement of old 50 MVAr, ... Bus Reactor by new 125 MVAr, 400 kV Bus Reactor along ...lled equipment at 400 kV Lonikand-I under Pune Zone: ...or will be supplied by MSETCL).

... Amount: Rs. 5,16,96,971/-, EMD: Rs. 5,16,970/-, Tender Rs. 5,000/-+GST.

...load of tender Documents: From dtd. 15/10/2024 @14:00 ...22/10/2024 up to 14:00 Hrs.

...pening: Dtd. 22/10/2024 after 14:05Hrs (Tech.), Dtd. ...2024 after 11:00Hrs (Price)

...rther details visit our website http://mahatransco.in and ...above RFX for downloading tender document, schedules, ...nnexures.

Sd/-
Chief Engineer (I/C), EHV PC O&M Zone Pune

MUMBAI METRO RAIL CORPORATION LIMITED

(A JV-SPV of Govt. of India and Govt. of Maharashtra)

...RC

...nder ...MMRC/PLN-86(4)-A/RFP_VB/2024/1 dt. 03.10.2024

INVITATION TO ROADSHOW

...ai Metro Rail Corporation Limited (MMRC) has invited Request for ...al (RFP) dt. 03/10/2024 for **Property development on plot bearing ...o. 1987, 1988 at Nariman Point, A Ward, Mumbai (Maharashtra; ...) on Long-term Lease Basis**

...of Prebid: 28.10.2024 @ 11:00 hours (IST)

...er the RFP and Notice Inviting Tender (NIT) document, visit the CPPP portal: ...elminders.gov.in/eprocure/app

...show for the above said property shall be organized at Mumbai, ..., Bangalore and other international locations by MMRC starting ... next week onwards.

...sted parties with minimum net worth mentioned in Clause 2.2.2 (i) of the RFP ...ment, may submit their credentials for seeking appointment & one-to-one ...action with authorized representatives of MMRC.

...ested parties are requested to fill the form: ...://forms.office.com/r/cYuzumcHGf

...ppointment, please contact at the earliest: ...wetal Kanwalu, DGM (TP), MMRC (Email: swetal.kanwalu@mmrcl.com; ...o. +91-2269061-355) Mr. Saurabh Mehrotra, Executive Director, Knight ...k (Email: saurabh.mehrotra@in.knightfrank.com; Ph. No. +91-226745 0154)

...urther details, visit: https://corporate.mmrcl.com/en/latest-tenders/166

-Sd-
Director (Planning)

...mer: This notice has been issued to maximize outreach concerning the above-mentioned RFP to relevant ... The authority is not responsible to publish further information in the public domain.

MAHATRANSCO — NOTICE INVITING TENDER CPD/97 -2024-25

The due Date and Time of submission and opening of following SRM e-tender is extended as follows:

Tender No. & Description of Item	Estimated Amount (In Rs. Lakhs / Tender Fee in (In Rs.)	Due Date & Time (Hrs.) for Submission & Opening of Tender
SP/T-0832/1024 [RFX No. 5000001309] [1st Call] (Two Bid System) Procurement of LT Control Cables for works under CAPEX schemes at EHV PCC O&M Zone, Nashik, Nagpur & Pune of MSETCL on VARIABLE PRICE basis.	Rs.7,71,36,983.01 / Rs. 5000.00 (excluding taxes)	25.10.2024 / 25.10.2024 Up to 17:00 Hrs. at 17:30 Hrs
Pre-bid meeting Date, Time & Venue	Date: 15.10.2024 Time: 15:00 Hrs. Venue: 8th Floor, MSETCL C.O. 'Prakashganga' Plot No. C-19, E-Block, Bandra Kurla Complex, Bandra East, Mumbai, Maharashtra 400051.	

Contact Person: Office of the Executive Engineer (P&C)
Tel. No.022- 69852717/ Cell no:-8329909813/9833579766
Email:ceopn@mahatransco.in,eecpa@mahatransco.in,eegrp8@mahatransco.in, eepc@mahatransco.in
For further details visit our website http://www.srmetender.mahatransco.in
Any further amendments will be published on the MSETCL website www.mahatransco.in. So bidders are requested to check the website.

Sd/-
Executive Engineer, (P&C)

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Bid Process Coordinator — An Initiative of: Ministry of Power, Government of India — Initiative Partner

HT (E) – Pune – 15/10/2024

TC

HT (E) Patna - 15/10/2024

{ CROP DAMAGE DUE TO FLOODS }

U.P. GOVT PROVIDES ₹164 CRORE RELIEF TO FARMERS

HT Correspondent
letters@htlive.com

LUCKNOW: The Uttar Pradesh government has provided ₹163.151 crore in compensation for crops damaged by floods across Uttar Pradesh this Monsoon season.

So far, 3,12,866 farmers from 34 flood-affected districts have received financial assistance, said a government spokesperson.

Lakhimpur Kheri has received the highest compensation, with over ₹70 crore distributed to more than 1.10 lakh farmers, the spokesperson said.

Relief commissioner Bhanu Chandra Goswami said a survey of damaged crops was conducted in the flood-hit regions on the instructions of CM Yogi Adityanath to ensure timely payment to affected farmers. The floods, caused by water released from Nepal and hilly areas, impacted 1,10,989.26 hectares of crops in 34 districts.

He said, "The government compensates farmers for crop losses exceeding 33 percent due to unseasonal rain, hailstorms, and floods. In total, crops of 3,71,370 farmers were affected, and compensation has been provided to 3,12,866 farmers so far. The flood's impact was most severe in Lakhimpur Kheri, where the crops of 1,10,990 farmers were damaged, and ₹70.88 crore has been paid to 1,10,105 farmers. In Lalitpur, ₹21.9 crore has been distributed to 54,462 farmers whose crops were affected, out of a total of 81,839 farmers impacted. Similarly, in Siddharthnagar, ₹15.41 crore has been allocated to 29,261 farmers, out of 30,144 affected by the flood." Under the CM's directive, compensation for crop damage has been promptly provided. The assistance covers districts such as Ambedkarnagar, Auraiya, Ayodhya, Azamgarh, Badaun, Bahraich, Ballia, Balrampur, Banda, Barabanki, Basti, Bulandshahr, Farrukhabad, Gonda, Gorakhpur, Hamirpur, Hardoi, Hathras, Jalaun, Jhansi, Kanpur Dehat, Kushinagar, Mau, Mirzapur, Pilibhit, Pratapgarh, Saharanpur,

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(A wholly owned subsidiary of PFC Ltd.) (A Govt. of India Undertaking) — Ministry of Power, Government of India — Central Electricity Authority

OFFICE OF THE DIRECTOR GENERAL, MEDICAL EDUCATION & TRAINING, UTTAR PRADESH

6th FLOOR, JAWAHAR BHAWAN, LUCKNOW

No. ME-3/2024/2340 — Lucknow: Dated-14 October, 2024

The Time Schedule of Special Stray Vacancy Round of Online Counseling for UP NEET MDS-2024

In continuation of the time-table issued by Medical Counseling Committee (MCC), Government of India, New Delhi, for counseling of NEET MDS course, the time-table of Special Stray Vacancy round of online counseling for admission of state quota seats of MDS course in Government/Private Dental Colleges/Universities of the State is as follows:-

S.No	Description	Dates	Total Days
1	Date of online registration	15th October 2024 (From 11:00 AM) To 18th October 2024 (Till 11:00 AM)	03 Days
2	Date of depositing registration fee and security Fee	15th October 2024 (From 11:00 AM) To 18th October 2024 (Till 2:00 PM)	04 Days
3	Date of declaration of merit List	18th October 2024	01 Days
4	Date of online choice filling	18th October 2024 (From 2:00 PM) To 21st October 2024 (Till 11:00 AM)	03 Days
5	Date of declaration of result of seat allotment	21st October 2024	01 Days
6	Date for downloading allotment letters and admission process	22nd October 2024 to 25th October 2024	04 Days

- To participate in the Special stray vacancy round, it is mandatory for all eligible candidates to get fresh registration done by paying Rs. 2000/- (Rs. Two Thousand only) as online registration fee separately.
- All information related to UP NEET-MDS 2024 counseling will be uploaded on website https://upneet.gov.in and www.dgme.up.gov.in

(Director General)

जाता है।

विश्व मानक दिवस के उपलक्ष्य में आयोजित एक कार्यक्रम को संबोधित करते हुए जोशी ने कुछ एयर प्यूरीफायर कंपनियों द्वारा अपनाई गई भ्रामक विपणन रणनीति पर चिंता जताई।

रिलायंस का शुद्ध लाभ 5 फीसदी घट गया

मुंबई, एजेंसी। रिलायंस इंडस्ट्रीज लि. का एकीकृत शुद्ध लाभ चालू वित्त वर्ष की जुलाई-सितंबर तिमाही में पांच प्रतिशत घटकर 16,563 करोड़ रुपये रहा है। मुख्य रूप से तेल रिफाइनरी और पेट्रोरसायन कारोबार के कमजोर प्रदर्शन से कंपनी का मुनाफा घटा है।

कंपनी ने कहा कि चालू वित्त वर्ष 2024-25 की दूसरी तिमाही में उसका एकीकृत शुद्ध लाभ 16,563 करोड़ रुपये यानी 24.48 रुपये प्रति शेयर रहा। एक साल पहले इसी तिमाही में यह 17,394 करोड़ रुपये यानी 25.71 रुपये प्रति शेयर था। कुल आय आलोच्य तिमाही में बढ़कर 2.4 लाख करोड़ रुपये रही, जो एक साल पहले 2023-24 की सितंबर तिमाही में 2.38 लाख करोड़ रुपये थी।

सेंसेक्स 592 अंक चढ़ा, निफ्टी 25 हजार के पार

मुंबई, एजेंसी। वैश्विक स्तर पर मजबूत रुख के बीच सूचना प्रौद्योगिकी (आईटी) और बैंक शेयरों में लिवाली से बीएसई सेंसेक्स में सोमवार को करीब 592 अंक की तेजी आई।

एनएसई निफ्टी भी बढ़त के साथ 25,000 अंक के पार निकल गया। बीएसई में सूचीबद्ध कंपनियों का बाजार पूंजीकरण करीब 1.35 लाख करोड़ रुपये चढ़कर 4,63,62,781.71 रुपये पर पहुंच गया।

सेंसेक्स 591.69 अंक उछलकर 81,973.05 अंक पर बंद हुआ। कारोबार के दौरान एक समय यह 690.81 अंक तक चढ़ गया था। निफ्टी भी 163.70



अंक, यानी 0.66 प्रतिशत की बढ़त के साथ 25,127.95 अंक पर बंद हुआ। कारोबार के दौरान एक समय यह 195.5 अंक तक चढ़ गया था।

जानकारों ने कहा, कच्चे तेल की कीमतों में कमी आई है और ऐसा लगता है कि कंपनियों के हल्के तिमाही परिणामों को निवेशक पहले ही मानकर चल रहे हैं।

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)
पंजीकृत कार्यालय: प्रथम तल, 'ऊर्जानिधि', 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली– 110001, (भारत) फैक्स नं. 011 23443990

वैश्विक आमंत्रण (एकल चरण निविदा के माध्यम से)

पारेषण परियोजना के लिए निविदा: रणनीतिक संचालन और स्थानांतरण (टूट)-
आधार पर पारेषण परियोजना के प्रदाता के चयन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कम्पनी एकल चरण दो लिफाफा प्रक्रिया वाले "प्रस्ताव हेतु अनुरोध" (आरएफपी) का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाइट https://www.mstcecommerce.com एवं https://www.pfcclindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता अ-प्रतिदेय शुल्क रु. 5,00,000/- या यूएस$ (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने से एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10.30 बजे (आईएसटी) से 16.00 बजे (आईएसटी) के बीच 9वां तल, विंग–ए, स्टेटमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली–110001, फोन नं. 91–11–23443990, फैक्स: 91–11–23443998, ई–मेल: pfcol.ltp@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com तथा https://www.pfcclindia.com से भी अपलोड किए जा सकते हैं। यद्यपि, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ-प्रतिदेय शुल्क रु. 5,00,000/- या यूएस$ (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी को जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए सर्वेक्षण रिपोर्ट एवं स्पष्टीकरण उन बोलीदाताओं को जारी किए जाएंगे। जिन्होंने उपरोक्त परियोजना हेतु आरएफपी को निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त/खरीदा था। स्पष्टीकरण/संशोधन/समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए, निविदाता नियमित रूप से वेबसाइट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	पारेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि./मा.भा./व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि./मा.भा./व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि./मा.भा./व.व.)
1	गुजरात के कांडला क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (चरण–I: 3 गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक
2	चरण–I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम भाग बी। योजना (नेविगेशन एस/एस में 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	अनंतपुर–II REZ, चरण–I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कंसल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक — पंजीकृत कार्यालय — अग्रणी भागीदार

Hindustan (H) Patna- 15/10/2024

...तिशत हो गई। अगस्त ... प्रतिशत थी। ...मुद्रास्फीति सितंबर में ... प्रतिशत थी। इसकी ... प्रतिशत बढ़ी थी।

तरह आटा दाल और चावल की भी कीमतें बढ़ी हैं। टमाटर सौ रुपए तो प्याज 80 रुपये प्रति किलो के दर से मिल रहा है। सूखे मेवे के भी दाम में और अप्रत्याशित वृद्धि हुई है। लहसुन 230 रुपये की जगह 400 रुपये प्रति किलो मिल रहा है। दलहन की कीमतों में भी इजाफा हुआ है।

वृद्धि 10 वर्षों में हुई उतनी सिर्फ छह महीनों में हो गई। हरी मिर्च 40 से 50 रुपए पौवा तक चला गया है। सूखा मिर्च 350 से 400 रुपए किलो है। लहसुन 300 रुपए के करीब चला गया है। अजवाइन भी ढाई सौ रुपए किलो चल रहा है। वहीं सब्जियों के दामों में भी अप्रत्याशित वृद्धि हुई है।

नई दिल्ली। केंद्रीय सड़क परिवहन एवं राजमार्ग मंत्री नितिन गडकरी ने सोमवार को कहा कि डीजल में 15 प्रतिशत एथनॉल मिलाने को लेकर शोध का काम उन्नत चरण में है और सरकार ठोस प्रमाण के आधार पर इसे प्राथमिकता देने के तरीके तलाश रही है।

2024 (इंटरनेशनल कॉन्फ्रेंस ऑफ सिविल, मटेरियल्स, एनवायरनमेंटल सस्टेनेबिलिटी) का बहुप्रतीक्षित उद्घाटन 4 अक्टूबर 2024 को जेपी यूनिवर्सिटी ऑफ इंफॉर्मेशन टेक्नोलॉजी, वाकनघाट,



...फलतापूर्वक ... प्रतिष्ठित ... इंजीनियरिंग, ... पर्यावरणीय ... वैश्विक विशे... लाकर, शोधक... उद्योग के पे... महत्वपूर्ण मंच... सम्मेलन का ... सिविल इंजी... किया गया है

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)
पंजीकृत कार्यालयः प्रथम तल, 'ऊर्जानिधि', 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली– 110001, (भारत) फैक्स नं.: 011 23443990

वैश्विक आमंत्रण (केवल ई–निविदा के माध्यम से)

अन्तर्राज्यीय पारेषण परियोजना के लिए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण सेवा प्रदाता के चयन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉर्पोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कम्पनी एकल चरण दो लिफाफा प्रक्रिया वाले "प्रस्ताव हेतु अनुरोध" (आरएफपी) का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाइट https://www.mstcecommerce.com एवं https://www.pfcclindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने से एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10.30 बजे (आईएसटी) से 16.00 बजे (आईएसटी) के बीच 9वां तल, विंग–ए, स्टेटमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली–110001, फोन नं. 91–11–23443996 फैक्स 91–11–23443990, ई–मेल: pfccl.hp@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com तथा https://www.pfcclindia.com से भी डाउनलोड किए जा सकते हैं, यद्यपि, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी को जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए सर्वेक्षण रिपोर्ट एवं स्पष्टीकरण उन बोलीदाताओं को जारी किए जाएंगे। जिन्होंने उपरोक्त परियोजना हेतु आरएफपी को निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त/खरीदा था। स्पष्टीकरण/संशोधन/समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए निविदाता नियमित रूप से वेबसाइट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	पारेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि./मा.मा./व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि./मा.मा./व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि./मा.मा./व.व.)
1	गुजरात के कांडला क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (चरण–I: 3 गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक
2	चरण–I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम: भाग बी1 योजना (नेविनल एस/एस में 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	अनंतपुर–II REZ- चरण–I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कंसल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक
CONSULTING LTD.
(पीएफसी लिमिटेड की पूर्णतः स्वामित्वाधीन सहायक कंपनी)
(भारत सरकार का एक उपक्रम)

पहलकर्ता
विद्युत मंत्रालय
भारत सरकार

अग्रणी भागीदार
केन्द्रीय विद्युत प्राधिकरण

जयपुर रग्स ने रंग उत्सव 202... सिंगापुर फ्लैगशिप के उद्घाट... वैश्विक मील का पत्थर स्थापि...

लंदन की सफलता के आधार पर, जयपुर रग्स ने मात्र 3 महीनों में फिर से विस्तार किया, जिससे APAC में इसकी उपस्थिति मजबूत हुई।

भारतीय शिल्प कौशल और लक्जरी का वैश्विक अवतार, जयपुर रग्स, सिंगापुर में अपने प्रमुख शोरूम के भव्य उद्घाटन की गर्व से घोषणा करता है - जो ब्रांड के चल रहे अंतर्राष्ट्रीय विस्तार का एक उज्ज्वल प्रमाण है। यह प्रतिष्ठित लॉन्च जयपुर रग्स के बहुप्रतीक्षित रंग उत्सव 2024 के साथ मेल खाता है, जो भारतीय कलात्मकता और शिल्प कौशल का जश्न मनाने वाला एक राष्ट्रव्यापी उत्सव है, जो हस्तनिर्मित कालीनों की कालातीत सुंदरता को दुनिया तक पहुंचाने के ब्रांड के मिशन को रेखांकित करता है।

सिंगापुर प... उपस्थिति ... इस साल ... लंदन शोरू... महज ती... अंतरराष्ट्रीय ... पुर र... ...ण्य मे... जारी रखत...



त्योहारों का जश्न महिंद्रा ट्रै... का ट्रैक्टर कैंपेन के साथ

"दुनिया की सबसे बड़ी ट्रैक्टर निर्माता कंपनी महिंद्रा ट्रैक्टर्स इस साल एक महत्वपूर्ण उपलब्धि का जश्न मना रही है। 60 वर्षों में 40 लाख ट्रैक्टरों की बिक्री पूरी करने

ग्राहकों ... मिलेंगे ... स्कीम... अपने पे... करने ...

फेस्टिवल ऑफर' 2024 की...

ग्रेट ईस्टर्न ट्रेडिंग कंपनी ने 'शानदार फेस्टिवल ऑफर' 2024 की घोषणा की है। वे आपके घर पर आपके लिए इलेक्ट्रॉनिक उत्पादों को लाने के लिए कुछ अनूठे अवसर प्रदान कर रहे हैं।

ग्राहक 26,000/– रुपये तक का कैश बैक, 36 महीने की ईएमआई के साथ 1 ईएमआई की छूट, 0 डाउन पेमेंट की सुविधा, बहुत कम

ईएमआ... रिप्लेस... Great Easte... लकी ... पास 1 ... एलईडी ... जीतने ... कई औ... उपलब्ध...

...र के पार

...सेंसेक्स 591.69 ...81,973.05 अंक ...टी भी 163.70 अंक ...25,127.95 अंक

...साहेबगंज

सूचना :–

...पताल, साहेबगंज में ... उपकरण एवं अन्य ... उनके अधिकृत ... संधित डाक

...– Medicine, ...rgency Life ...ab. Reagents & ...bles Items

...to 05.00 PM

...03.30 PM

...(One Lac) Only ...ayable at

...Two Thousand) ...DD Payable at

...Sadar Hospital,

...to 05:00 PM

...सर्जन, ...4, साहेबगंज।

...-शाहगंज जंक्शन- ...होकर चलेगी तथा ...नी जंक्शन एवं सीवान ...पुर-गाँधीधाम स्पेशल ...मान मार्ग गोरखपुर ... गोरखपुर जंक्शन- ...पर नहीं ठहरेगी। ...रम्भ होने की तारीख ...पोंडा जंक्शन-बस्ती- ...क्शन-बढ़नी-गोरखपुर ...ों पर नहीं ठहरेगी। ...त्री परिवहन प्रबंधक

...ilwayheadquarter

GOVT OF BIHAR

Counselling.

(c) Admitted on MDS seats through NEET(MDS)-2024 Round 1 / Round 2 / Round-3 / Stray Vacancy Round / Special Stray Vacancy Round Counselling conducted by Other States.

(d) Allotted on MDS seats through AIQ on the basis of NEET(MDS)-2024 Round-3 / Stray Vacancy Round / Special Stray Vacancy Round Counselling.

(e) Allotted on MDS seats through PGDAC-2024 Round-3 / Stray Vacancy Round Counselling.

If any candidate duly submits fresh Online Application form by providing wrong information, his / her Security Deposit amount paid for participating in Special Stray Vacancy Round Counselling will be forfeited and he/ she will become not eligible for Special Stray Vacancy Round Counselling as Data will be scrutinized before preparation / publication of Merit List.

5. The online Registration and submission of Application / Willingness Form will start from 15.10.2024 and close on 17.10.2024 (10.00 P.M.).

6. Eligibility criteria for counselling, Fee payment procedure, instructions and other details are available in the prospectus of PGDAC-2024 and the related detailed Advertisement No. BCECEB(PGDAC)-2024/14 Dated 14.10.2024 which can be downloaded from the Board's website : bceceboard.bihar.gov.in.

Controller of Examination

Hindustan (H) Bhagpur - 15/10/2024

[illegible] जम्मू-कश्मीर से राष्ट्रपति शासन हटाए जाने के अगले दिन दिया गया।

उमर अब्दुल्ला को लिखे पत्र में सिन्हा ने कहा, मुझे जम्मू-कश्मीर नेशनल कॉन्फ्रेंस के अध्यक्ष डॉ. फारूक अब्दुल्ला का 11 अक्तूबर का पत्र मिला है। जिसमें बताया गया है कि आपको सर्वसम्मति से विधायक दल का नेता चुना गया है। उन्होंने कहा कि उन्हें जम्मू-कश्मीर कांग्रेस प्रमुख तारिक हमीद कर्रा, माकपा सचिव जीएन गलिक, आप के राष्ट्रीय सचिव पंकज कुमार गुप्ता और निर्वाचित निर्दलीय विधायक प्यारे लाल शर्मा, सतीश शर्मा, मोहम्मद अकरम, रामेश्वर सिंह तथा मुजफ्फर इकबाल खान से भी

'पाक नौसेना को चीन से मिल रही मदद पर नजर'

नई दिल्ली। भारतीय नौसेना प्रमुख एडमिरल दिनेश त्रिपाठी ने सोमवार को पाकिस्तान को चीन से उपकरण और हथियार मिलने पर चिंता जताई। इस दौरान उन्होंने आश्चर्य भी जताया कि एक ऐसी अर्थव्यवस्था, जो अंतरराष्ट्रीय स्तर पर लड़खड़ा रही है, वह सशस्त्र बलों का आधुनिकीकरण के लिए कैसे धन जुटा सकती है। नौसेना प्रमुख ने कहा कि यह पाकिस्तान नौसेना को चीन से मिल रही मदद पर नजर रख रहे हैं। एडमिरल त्रिपाठी ने कहा, पाक नौसेना को विभिन्न स्रोतों से किस तरह के हथियार और प्लेटफॉर्म मिल रहे हैं, इसके लिए यह सुनिश्चित करने के लिए एक रणनीति है।

थरूर पर मानहानि मामले की सुनवाई जारी रहेगी

नई दिल्ली। उच्चतम न्यायालय ने सोमवार को प्रधानमंत्री नरेंद्र मोदी के खिलाफ अपमानजनक टिप्पणी को लेकर आपराधिक मानहानि के मामले में कांग्रेस सांसद शशि थरूर के खिलाफ जिला अदालत में लंबित मामले की सुनवाई पर रोक के अपने आदेश को चार सप्ताह के लिए बढ़ा दिया है। शीर्ष अदालत ने यह आदेश मामले में दिल्ली पुलिस और मानहानि का शिकायत दाखिल करने वाले भाजपा नेता राजीव बब्बर को कांग्रेस नेता थरूर की याचिका पर जवाब दाखिल करने का समय देते हुए पारित किया है।

[illegible] लिए आमंत्रित किया

नेशनल कॉन्फ्रेंस का समर्थन दिए जाने के बारे में पत्र मिला है। सिन्हा ने पत्र में लिखा, मुझे आपको जम्मू-कश्मीर सरकार बनाने और उसका नेतृत्व करने के लिए आमंत्रित करते हुए खुशी हो रही है।

उन्होंने कहा, जैसा कि तय किया गया है, मैं 16 अक्तूबर को पूर्वाह्न 11:30 बजे एसके आईसीसी, श्रीनगर में आपको और आपकी मंत्रिपरिषद के सदस्यों के रूप में शामिल करने के लिए आपके द्वारा अनुशंसित लोगों को पद और गोपनीयता की शपथ दिलाऊंगा। अब्दुल्ला ने भी एक्स पर पत्र मिलने की पुष्टि की।


हल्का और चुस्त महसूस करे

1 बार में असरदार राहत



रातोरात आराम | गैस-एसिडिटी से राहत | पेट साफ करे | बिना पेट मरोड़

झंडू नित्यम

आयुर्वेदिक कब्जनाशक एक्सपर्ट

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)

पंजीकृत कार्यालय: प्रथम तल, 'ऊर्जानिधि', 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली– 110001, (भारत) फैक्स नं. 011 23443990

वैश्विक आमंत्रण (केवल ई-निविदा के माध्यम से)

अन्तर्राज्यीय पारेषण परियोजना के लिए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण सेवा प्रदाता के चयन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कंपनी एकल चरण दो लिफाफा प्रक्रिया वाले 'प्रस्ताव हेतु अनुरोध' (आरएफपी) का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाइट https://www.mstcecommerce.com एवं https://www.pfcclindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने से एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10.30 बजे (आईएसटी) से 16.00 बजे (आईएसटी) के बीच 9वां तल, विंग–ए, स्टेटमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली–110001, फोन नं. 91–11–23443996 फैक्स 91–11–23443990, ई–मेल: pfccl.ltp@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com तथा https://www.pfcclindia.com से भी डाउनलोड किए जा सकते हैं, यद्यपि, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी को जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए सर्वेक्षण रिपोर्ट एवं स्पष्टीकरण उन बोलीदाताओं को जारी किए जाएंगे। जिन्होंने उपरोक्त परियोजना हेतु आरएफपी को निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त/खरीदा था। स्पष्टीकरण/संशोधन/समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए निविदाता नियमित रूप से वेबसाइट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	पारेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि./भा.मा./व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि./भा.मा./व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि./भा.मा./व.व.)
1	गुजरात के कांडला क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (चरण–I: 3 गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक
2	चरण–I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम: भाग बी1 योजना (निर्मल एस/एस में 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	अनंतपुर–II REZ- चरण–I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कंसल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक — CONSULTING LTD. (पीएफसी लिमिटेड की पूर्ण स्वामित्वाधीन सहायक कंपनी) (भारत सरकार का एक उपक्रम)

पहलकर्ता — निदेशक, नेशनल ग्रिड, भारत सरकार

अग्रणी भागीदार — कन्सल्टिंग लिमिटेड

मुद्रक तथा प्रकाशक राजीव बेओतरा द्वारा हिन्दुस्तान मीडिया वेन्चर्स लिमिटेड (एच एम वी एल) के पक्ष में इन्फोमिडिया पब्लिशर्स प्राईवेट लिमिटेड, नेशनल हाईवे-28, मोटलपुर, निवर्तमान सुधा से

प्रधान सम्पादक : शशि शेखर

स्थानीय सम्पादक : आलोक कुमार मिश्रा*

*सम्पादक इस अंक में प्रकाशित समाचार के चयन एवं सम्पादन हेतु

Hindustan (H) Muzaffarpur – 15/10/2024

लाईन जमा करना होगा एवं इस संबंध में कोई दावा मान्य नहीं होगा ।

PR 338774 (Minor Irrigation)24-25*D

कार्यपालक अभियन्ता,
लघु सिंचाई प्रमंडल,खूँटी

आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड

(स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार के अधीन एक स्वायत्त निकाय)
एनएएमएस भवन, मेडिकल एंक्लेव, अंसारी नगर, नई दिल्ली- 110029

एनबीईएमएस डिप्लोमा अंतिम सैद्धांतिक परीक्षा – दिसम्बर 2024

सूचना

आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड द्वारा एनबीईएमएस डिप्लोमा अंतिम सैद्धांतिक परीक्षा का आयोजन **13, 14 एवं 15 दिसम्बर 2024** को किया जाएगा।

पात्रता मानदंड, शुल्क संरचना, परीक्षा की योजना और अन्य विवरणों से संबंधित सूचना के लिए कृपया एनबीईएमएस वेबसाइट https://natboard.edu.in पर सूचना बुलेटिन देखें।

महत्वपूर्ण तिथियाँ	
आवेदन फॉर्म को ऑनलाइन जमा करना (सैद्धांतिक एवं प्रायोगिक परीक्षा)	15 अक्टूबर 2024 (दोपहर 3 बजे से) से 4 नवंबर 2024 (रात 11:55 बजे तक)
सैद्धांतिक परीक्षा की तिथि	13, 14 और 15 दिसंबर 2024
"केवल प्रायोगिक परीक्षा" आवेदन जमा करने की अंतिम तिथि	31 दिसंबर 2024

उम्मीदवार सहायता केंद्र : +91-7996165333

- आवेदक लॉगिन पेज पर हेल्पलाइन पोर्टल
- एनबीईएमएस वेबसाइट पर संचार सेवा पोर्टल

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)
पंजीकृत कार्यालय: प्रथम तल, 'ऊर्जानिधि', 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली– 110001, (भारत) फैक्स नं: 011-23443990

वैश्विक आमंत्रण (केवल ई–निविदा के माध्यम से)

अन्तर्राज्यीय पारेषण परियोजना के लिए वित्तपोषण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण लीला प्रस्ताव के चयन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कम्पनी एकल चरण दो लिफाफा प्रक्रिया वाले "प्रस्ताव हेतु अनुरोध" (आरएफपी) का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाइट https://www.mstcecommerce.com एवं https://www.pfcclindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने से एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10.30 बजे (आईएसटी) से 16.00 बजे (आईएसटी) के बीच 9वां तल, विंग–ए, स्टेटमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली–110001, फोन नं. 91–11–23443998 फैक्स: 91–11–23443990, ई–मेल: pfcl.ip@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com तथा https://www.pfcclindia.com से भी डाउनलोड किए जा सकते हैं, यद्यपि, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी को जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए संक्षिप्त रिपोर्ट एवं स्पष्टीकरण उन बोलीदाताओं को जारी किए जाएंगे, जिन्होंने उपरोक्त परियोजना हेतु आरएफपी को निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त/खरीदा था। स्पष्टीकरण/संशोधन/समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए निविदाता नियमित रूप से वेबसाइट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	पारेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि./मा.मा./व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि./मा.मा./व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि./मा.मा./व.व.)
1	गुजरात के कांडला क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (चरण–I: 3 गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक
2	चरण–I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम: भाग बी1 योजना (निर्जलन एस/एस में 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	अनंतपुर–II REZ- चरण–I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कंसल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक — पहलकर्ता — अग्रणी भागीदार

...ट्रैक्टर्स के "देश
...य
...हकों को ट्रैक्टर खरीदने पर
...लेंगे निश्चित उपहार।
...स्कीम्स और ऑफर्स के अलावा,
...पने पोर्टफोलियो को और मजबूत
...खने के लिए महिंद्रा ट्रैक्टर्स ने
...न्च किये है कई नए प्रोडक्ट्स।
...ई नई पहल किसानों को इस
...स वर्ष में त्योहारों का जश्न
...लाने का अवसर प्रदान कर रही

...पूरथला निर्मित
...किलोमीटर प्रति
...रीक्षण
...तंबर 2024 को रवाना किया गया
...। इस ट्रेन ने 145 किलोमीटर
...घंटे की गति से लगभग 50
...लोमीटर की दूरी सफलतापूर्वक
...की।

...ने की 'शानदार
...की घोषणा
...मआई दर के साथ 30 दिन की
...सेसमेंट गारंटी प्राप्त कर सकते
...हैं। यहां फाइनेंस
...विकल्प भी उपलब्ध
...है।
...की इस कॉन्टेस्ट के जरिए आपके
...1 कार, 5 दू व्हीलर, 101
...ईडी टीवी और 101 माइक्रोवेव
...ने का अवसर भी है। साथ ही
...और बेहतरीन आकर्षक ऑफर
...ब्ध है।

Hindustan (H) Ranchi – 15/10/2024

श्रीमद्भागवत कथा को लेकर कलश यात्रा के दौरान पूजा करते श्रद्धालु।

देवघर।

[illegible]चना–13/2024-25

[illegible]024 समय :– 11:00 पूर्वाह्न
[illegible]2023 समय :– 11:00 पूर्वाह्न से
[illegible]2024 समय :– 5:00 अपराह्न तक
[illegible]024 समय :– 11:00 पूर्वाह्न
[illegible]जला परिषद, देवघर।

[illegible], 7979033663

अग्रधन की राशि	परिमाण विपत्र का मूल्य	कार्य पूर्ण करने की अवधि
900.00	5000.00	दो माह
900.00	5000.00	दो माह
540.00	2500.00	दो माह
800.00	5000.00	तीन माह
800.00	5000.00	तीन माह
764.00	2500.00	दो माह
900.00	5000.00	दो माह
260.00	5000.00	दो माह
540.00	2500.00	दो माह
360 [illegible]40.00	2500.00	दो माह

[illegible]र वैसे संवेदक जिनको जिला परिषद [illegible]ी है वैसे संवेदकों को निविदा में भाग [illegible] द्वारा एकरारनामा नहीं किया गया है [illegible]सी खाते में अग्रधन की राशि वापस [illegible]

जिला अभियंता
जिला परिषद, देवघर।

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)
पंजीकृत कार्यालय: प्रथम तल, 'ऊर्जानिधि', 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली– 110001, (भारत) फैक्स नं: 011 23443990

वैश्विक आमंत्रण (केवल ई–निविदा के माध्यम से)

अन्तर्राज्यीय पारेषण परियोजना के लिए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण पॉक अद्यतन के सृजन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कम्पनी एकल चरण दो लिफाफा प्रक्रिया वाले प्रस्ताव हेतु अनुरोध (आरएफपी) का मालूम करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाइट https://www.mstcecommerce.com एवं https://www.pfcclindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने से एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10.30 बजे (आईएसटी) से 16.00 बजे (आईएसटी) के बीच ब्रा–तल, विंग–ए, स्टेटमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली–110001, फोन नं. 91–11–23443990 फैक्स: 91–11–23443990, ई–मेल: pfccl.tip@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com तथा https://www.pfcclindia.com से भी डाउनलोड किए जा सकते हैं। यद्यपि, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ–प्रतिदेय शुल्क रु. 6,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी को जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए सर्वेक्षण रिपोर्ट एवं स्पष्टीकरण उन बोलीदाताओं को जारी किए जाएंगे। जिन्होंने उपरोक्त परियोजना हेतु आरएफपी को निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त/खरीदा था। स्पष्टीकरण/संशोधन/समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए निविदादाता नियमित रूप से वेबसाइट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	पारेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि./मा.मा./व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि./मा.मा./व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि./मा.मा./व.व.)
1	गुजरात के कांडला क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (चरण–I: 3 गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक
2	चरण–I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम: भाग बी1 योजना (नेविनल एस/एस में 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	अनंतपुर–II REZ: चरण–I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कंसल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक — प्रहलकर्ता — अग्रणी भागीदार

DONSVIN PVT. LTD.
(कंपनी लिमिटेड की पूर्ण स्वामित्वाधीन सहायक कंपनी)
(भारत सरकार का एक उपक्रम)

(KL/13/2025)			
चौदहवाँ चक्र (KL/14/2025)	प्रारम्भ 11.00 बजे पूर्वा0 अन्त 5.00 बजे अप0	27.12.2024 30.12.2024	02.01.2025

क्रेता पंजीकरण पत्र, निविदा शुल्क, सत्यंकर राशि, निविदाकार की करारनामा, आयकर विभाग द्वारा निर्गत PAN की अभिप्रमाणित प्रति, पिछले तीन लेखा वर्षों के आयकर रिटर्न की अभिप्रमाणित प्रतियाँ, GST निबंधन संख्या के प्रमाण–पत्र की अभिप्रमाणित प्रति, विगत लेखा वर्ष के GST रिटर्न की प्रति तथा अपलोड किये गये अन्य दस्तावेज की एक–एक प्रति निविदादाता निविदा खुलने की तिथि के एक दिन पूर्व (11:00 बजे पूर्वाह्न) तक प्रमण्डलीय प्रबन्धक के कार्यालय में जमा करेंगे। समस्त इच्छुक निविदाकारों को ऑनलाईन निविदा भरने हेतु Digital Signature Certificate प्राप्त करना अनिवार्य है।

विस्तृत जानकारी यथा निविदा प्रपत्र, लॉट सूची, निविदाकार का करारनामा, निविदा से संबंधित शर्तें एवं बंधेज आदि वेब साईट www.jharkhandtenders.gov.in पर देखा जा सकता है। ऑनलाईन निविदा समर्पित करने के पूर्व निविदा प्रक्रिया की पूर्ण जानकारी प्राप्त कर लें। अधिक जानकारी के लिये वन निगम के प्रमण्डलीय/अंचलीय कार्यालयों से तथा वन निगम मुख्यालय के निम्न पदाधिकारी/कर्मी से भी सम्पर्क कर सकते हैं:–

(1) उप निदेशक (विपणन), राँची, 8086653797
(2) उप निदेशक (मुख्यालय), राँची, 9431402051
(3) श्री प्रसून कुमार FPI, राँची, 9153989366
(4) TOLL FREE NO. 18008891131

80/–

उप निदेशक (विपणन),
झारखण्ड राज्य वन विकास निगम लि0, राँची

PR 338882 Jharkhand State Forest Development Corp Ltd(24-25) D.S.

Hindustan Dhanbaad (H) – 1

Dhanbaad – 15/10/2024

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and having sound financial status.

Sl. No.	NIT No.	Name of Work	Estimated cost (In Rs.)	Earnest money to be deposited (In Rs.)	Cost of BOQ including GST @ 18 % (Non-refundable) (In Rs.)	Time of completion of work
1	215/PR/JBVNL/2024-25	Repair and maintenance of control room building at 33/11 Kv PSS, Baliapandh.	3,97,46 0.00	8,000.00	885.00 (750.00+135.00)	120 Days
2	216/PR/JBVNL/2024-25	Repair and maintenance of pathway of 33/11 Kv P/S/S Kitadih under ESD Ghatshila	3,74,75 0.00	7,500.00	885.00 (750.00+135.00)	90 Days
3	217/PR/JBVNL/2024-25	Repair and maintenance of boundary wall in front side of 33/11 Kv P/S/S, Dalbhumgarh under ESD Ghatshila	3,97,16 0.00	8,000.00	885.00 (750.00+135.00)	120 Days
4	218/PR/JBVNL/2024-25	Repair and maintenance of shed in front of Electric Supply Sub-Division, Karandih, Jamshedpur	3,79,01 0.00	7,600.00	885.00 (750.00+135.00)	90 Days
5	219/PR/JBVNL/2024-25	Repair and maintenance of pathway of 33/11 Kv P/S/S Baliguma at Jamshedpur	3,95,93 0.00	8,000.00	885.00 (750.00+135.00)	90 Days
6	220/PR/JBVNL/2024-25	Repair and maintenance of shed in front of panel room at 33/11 Kv P/S/S Chhotagobindpur, Jamshedpur.	1,99,54 0.00	4,000.00	590.00 (500.00+90.00)	90 Days

Availability of tender document on website	15.10.2024 at 02:00 pm
Last date and time for uploading of E-Tender	30.10.2024 up to 2:00 pm
Date and time for opening of tender Part-I (Technical and Commercial)	01.11.2024 at 2:30 pm
Date and time for opening of tender Part-II (Price Part)	Further communicated
Tendering Officer and address for communication	Electric Supply Circle, Jamshedpur

1. E-Tender document and BOQ including terms & condition, specification etc. can be downloaded and submitted online on website https://jharkhandtenders.gov.in any details required in this regard can also be had from the office of the undersigned during office hours. NIC Help line no.06034-222109, for any clarification regarding NIT Contact –7050303680.
2. The tenders will be received through electronic tendering mode only.

स्वहित एवं राष्ट्रहित में ऊर्जा बचावें। कृपया अपनी शिकायतों को 18003456570 कॉल सेन्टर पर दर्ज करावें।

Sd/-
Deputy General Manager (Technical)
Electric Supply Circle, Jamshedpur

BR 388852 (Jharkhand Bijlee Vitran Nigam Ltd)24-25*D

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)
पंजीकृत कार्यालय: प्रथम तल, कुर्जा निधि, 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली– 110001, (भारत) फैक्स नं.: 011 23443990

वैश्विक आमंत्रण (केवल ई–निविदा के माध्यम से)

उत्तर प्रदेश में पारेषण परियोजना के लिए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण सेवा प्रदाता का चयन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कंपनी एकल चरण दो लिफाफा प्रक्रिया वाले "प्रस्ताव हेतु अनुरोध" (आरएफपी) का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाइट https://www.mstcecommerce.com एवं https://www.pfcclindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने से एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10.30 बजे (आईएसटी) से 16.00 बजे (आईएसटी) के बीच तृतीय तल, विंग–ए, स्टेटमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली–110001, फोन नं. 91–11–23443990 फैक्स: 91–11–23443990, ई–मेल: pfcl.ilp@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com तथा https://www.pfcclindia.com से भी डाउनलोड किए जा सकते हैं, यद्यपि, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी को जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए सर्वेक्षण रिपोर्ट एवं स्पष्टीकरण उन बोलीदाताओं को जारी किए जाएंगे। जिन्होंने उपरोक्त परियोजना हेतु आरएफपी को निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त/खरीदा था। स्पष्टीकरण/संशोधन/समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए निविदाता नियमित रूप से वेबसाइट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	पारेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि./मा.मा./व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि./मा.मा./व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि./मा.मा./व.व.)
1	गुजरात के कांडला क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (चरण–I: 3 गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक.
2	चरण–I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम: भाग बी1 योजना (नेविनल एस/एस में 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	अनंतपुर–II REZ- चरण–I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कंसल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक — पहलकर्ता — अग्रणी भागीदार

(पीएफसी लिमिटेड की पूर्ण स्वामित्वाधीन सहायक कंपनी) (भारत सरकार का एक उपक्रम) — विद्युत मंत्रालय भारत सरकार — केंद्रीय विद्युत प्राधिकरण

Hindustan (H) Jamshedpur

इसके बाद स्थानीय लोगों ने ऑटो से महिला को एलबीएस अस्पताल रहती है। वह सेक्टर-63, नोएडा स्थित एक एक्सपोर्ट कंपनी में गाजीपुर गोल चक्कर पर पहुंचते ही पीछे से आई बस ने टक्कर मार दी।

के बाद एक युवक पर फायरिंग करने का मामला सामने आया है। गोली युवक के मोबाइल में लगी और उसकी जान बच गई।

पीड़ित रितिक अपने परिवार के साथ सीमेंट साइडिंग कॉलोनी, पंजाबी बाग में रहता है। इसी कॉलोनी में रहने वाली शांति के परिवार सतनाम द्वारा गुल्ली की पिटाई करने को लेकर रितिक के परिवार का झगड़ा हो गया था। झगड़े के दौरान ही गोली चली।

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)
पंजीकृत कार्यालय: प्रथम तल, 'ऊर्जानिधि', 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली– 110001, (भारत) फैक्स नं.: 011 23443990

विश्वेक आमंत्रण (केवल ई-निविदा के माध्यम से)
[illegible] परियोजना के लिए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) [illegible] आधार पर पारेषण सेवा प्रदाता के चयन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कम्पनी एकल चरण दो लिफाफा प्रक्रिया वाले "प्रस्ताव हेतु अनुरोध" (आरएफपी) का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाइट https://www.matcecommerce.com एवं https://www.pfcclindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने से एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10.30 बजे (आईएसटी) से 16.00 बजे (आईएसटी) के बीच 9वां तल, विंग–ए, स्टेटमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली–110001, फोन नं. 91–11–23443996 फैक्स: 91–11–23443990, ई–मेल: pfccl.itp@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.matcecommerce.com तथा https://www.pfcclindia.com से भी डाउनलोड किए जा सकते हैं, यद्यपि, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी को जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए सर्वेक्षण रिपोर्ट एवं स्पष्टीकरण उन बोलीदाताओं को जारी किए जाएंगे। जिन्होंने उपरोक्त परियोजना हेतु आरएफपी को निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त/खरीदा था। स्पष्टीकरण/संशोधन/समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए निविदाता नियमित रूप से वेबसाइट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	पारेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि./मा.मा./व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि./मा.मा./व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि./मा.मा./व.व.)
1	गुजरात के कांडला क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (चरण–I: 3 गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक
2	चरण–I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम: भाग बी1 योजना (नेविनल एस/एस में 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	अनंतपुर–II REZ- चरण–I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कंसल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक — CONSULTING LTD. (पीएफसी लिमिटेड की पूर्ण स्वामित्वाधीन सहायक कंपनी) (जमा सरकार का एक संकल्प)

पहलकर्ता — [illegible]

अग्रणी मार्गदार — [illegible]

Government of India
Department of Science & Technology
Office of the Surveyor General of India
Survey of India, Dehradun

No.: S-5377/1333/2/2022-Store-SGO Dated: 14.10.2024

Notice Inviting Tender

[illegible] 1000 hrs [illegible] General of India invites proposals for entering

Tender Opening (techno-commercial bid) Date & Time	06/11/2024, 1000 hrs	Tender Opening (Financial bid) Date & Time	To be intimated later to technically qualified bidders.

The Request for Proposal for providing Services for 2D/3D Mapping of Urban Areas, Tender Reference Number T-1590/1147-Project (NAKSHA)_DoLR/Comp_25313 dated 10/10/2024 should be referred at https://eprocure.gov.in/eprocure/app for further details.

Chairman
Tender Committee

दो भाइयों पर [illegible] करने वाला ए[illegible]

हि फॉलोअप

नई दिल्ली, कार्यालय संवाददाता। उत्तर पूर्वी दिल्ली के हर्ष विहार इलाके में दशहरे की रात दो भाइयों पर चाकू से हमले का वीडियो सोमवार को सोशल मीडिया पर वायरल हो गया।

फिलहाल पुलिस मौके के आसपास लगे सीसीटीवी कैमरों की फुटेज खंगाल रही है। मामले में विकास को गिरफ्तार किया गया है। वायरल वीडियो में दिख रहा है कि दोनों भाई जा रहे हैं और तीनों आरोपी लड़के एक ही बाइक पर सवार होकर पीछे से आते दिखाई देते हैं। इसी

मुंबई एयरपो[illegible]

शिकंजा

नई दिल्ली, वरिष्ठ संवाददाता। विदेश में रहकर भारत में लोगों से ठगी करने वाले गिरोह के अकाउंट संभालने वाले को दक्षिण-पश्चिमी जिला पुलिस की साइबर थाना पुलिस ने 12

I.	आदिकैलाश (ज्योलिकांग) पेयजल योजना निर्माण कार्य।	1,[illegible]

ई–निवि[illegible]
www.uktend[illegible]

Hindustan (H) New Delhi - 15/10/2024

— JC —

संतों से परामर्श भी किया जा रहा है।

अयोध्या शोध संस्थान (अब अन्तर्राष्ट्रीय रामायण एवं वैदिक शोध संस्थान) की ओर से रामायण कालीन वृक्षों पर शोध के दौरान कोविदार वृक्ष की जानकारी सामने आई। वनस्पति विज्ञान के कुछ विशेषज्ञ मानते हैं कि यह वृक्ष कचनार प्रजाति से सम्बन्धित है।

लखनऊ से अमेठी के शुक्लबाजार शव लेकर जा रहे थे।

अमरेश को डूबते देख साथियों ने चीख पुकार मचाई पर तब तक वह डूब गया।

ना दिया चोर

है। वहीं रवि मैकेनिक है। मनीष की पारा में सर्राफ की दुकान थी। जुए की लत के चलते उसकी दुकान टूट गई। वह चोरी की वारदात को अंजाम देने लगा।

जूतों से पकड़े गए आरोपित: आरोपितों ने स्वामी शरण के घर से कुछ दूर पहले ही बाइक झाड़ियों के पीछे खड़ी कर दी। एक व्यक्ति बाइक के पास ही खड़ा रहा। दो व्यक्ति शिक्षक के घर में घुस गये। चोरी के बाद शर्ट बदल दी लेकिन जूते वही पहने रहे। जूतों से आरोपी पकड़े गए।



रदार राहत

-एसिडिटी पेट साफ बिना पेट से राहत करे प्रयोग

नित्यम

क कब्जनाशक एक्सपर्ट

कार्यालय महानिदेशक, चिकित्सा शिक्षा एवं प्रशिक्षण, जवाहर भवन, उ0प्र0, लखनऊ

लखनऊ : दिनांक 14 अक्टूबर, 2024

संख्या–एम0ई0–3 / 2024 / 2338

यू0पी0 नीट एम0डी0एस0-2024 के अन्तर्गत स्पेशल स्ट्रे वैकेन्सी राउन्ड की ऑन लाईन काउंसिलिंग की समय-सारिणी

मेडिकल काउंसिलिंग कमेटी (एम0सी0सी0) भारत सरकार नई दिल्ली, द्वारा नीट एम0डी0एस0 पाठ्यक्रम की काउंसिलिंग हेतु निर्गत स्पेशल स्ट्रे वैकेन्सी राउण्ड की समय–सारिणी के क्रम में प्रदेश के राजकीय / निजी क्षेत्र के डेटल कालेजों / विश्वविद्यालयों में संचालित एम0डी0एस0 पाठ्यक्रम की स्टेट कोटे की सीटों पर प्रवेश हेतु स्पेशल स्ट्रे वैकेन्सी राउण्ड की ऑन–लाईन काउंसिलिंग की समय–सारिणी निम्नवत है :–

क्र.सं.	विवरण	तिथि	कुल दिवस
1	ऑनलाईन पंजीकरण की तिथि	दिनांक 15 अक्टूबर 2024 (पूर्वान्ह 11:00 बजे) से 18 अक्टूबर 2024 तक (पूर्वान्ह 11:00 बजे) तक	03 दिवस
2	पंजीकरण धनराशि एवं धरोहर धनराशि जमा करने की तिथि	दिनांक 15 अक्टूबर 2024 (पूर्वान्ह 11:00 बजे) से 18 अक्टूबर 2024 तक (अपरान्ह 2:00 बजे) तक	04 दिवस
3	मेरिट सूची घोषित करने की तिथि	दिनांक 18 अक्टूबर 2024	01 दिवस
4	ऑनलाईन च्वॉइस फिलिंग की तिथि	दिनांक 18 अक्टूबर 2024 से (अपरान्ह 2:00 बजे) से 21 अक्टूबर 2024 (पूर्वान्ह 11:00 बजे) तक	03 दिवस
5	सीट आवंटन का परिणाम घोषित करने की तिथि	दिनांक 21 अक्टूबर 2024	01 दिवस
6	आवंटन पत्र डाउनलोड करने तथा प्रवेश लेने की तिथि	दिनांक 22 अक्टूबर से 25 अक्टूबर 2024	04 दिवस

- स्पेशल स्ट्रे वैकेन्सी राउण्ड में प्रतिभाग किये जाने हेतु समस्त अर्ह अभ्यर्थियों को पृथक से रू0 2000 / – (रू0 दो हजार मात्र) आनलाईन पंजीकण शुल्क जमा करते हुए नवीन पंजीकरण कराना अनिवार्य है।
- अद्यतन सूचनाओं के लिए विभागीय वेबसाईट https://upneet.gov.in एवं www.dgme.up.gov.in पर निरन्तर अवलोकन करते रहें।

महानिदेशक

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)

पंजीकृत कार्यालय: प्रथम तल, 'ऊर्जानिधि', 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली– 110001, (भारत) फैक्स नं: 011 23443990

वैश्विक आमंत्रण (केवल ई–निविदा के माध्यम से)

अन्तर्राष्ट्रीय पारेषण परियोजना के लिए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण सेवा प्रदाता के चयन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कम्पनी एकल चरण दो लिफाफा प्रक्रिया वाले "प्रस्ताव हेतु अनुरोध" (आरएफपी) का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाइट https://www.mstcecommerce.com एवं https://www.pfcclindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता अ–प्रतिदेय शुल्क रु. 5,00,000 / – या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने से एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10.30 बजे (आईएसटी) से 16.00 बजे (आईएसटी) के बीच 9वां तल, विंग–ए स्टेटमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली–110001, फोन नं. 91–11–23443996 फैक्स: 91–11–23443990, ई–मेल: pfccl.itp@pfclindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com तथा https://www.pfcclindia.com से भी डाउनलोड किए जा सकते हैं, यद्यपि, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ–प्रतिदेय शुल्क रु. 5,00,000 / – या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी को जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए सर्वेक्षण रिपोर्ट एवं स्पष्टीकरण उन बोलीदाताओं को जारी किए जाएंगे। जिन्होंने उपरोक्त परियोजना हेतु आरएफपी को निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त / खरीदा था। स्पष्टीकरण / संशोधन / समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए निविदाता नियमित रूप से वेबसाइट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	पारेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि. / भा.मा. / व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि. / भा.मा. / व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि. / भा.मा. / व.व.)
1	गुजरात के कांडला क्षेत्र में ग्रीन हाइड्रोजन / अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (चरण–I: 3 गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक
2	चरण–I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन / अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम: पाम बी1 योजना (नेविगल एस / एस में, 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	अनंतपुर–II REZ- चरण–I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कन्सल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक

CONSULTING LTD.

(पीएफसी लिमिटेड की पूर्ण स्वामित्वाधीन सहायक कंपनी)

(भारत सरकार का एक उपक्रम)

पहलकर्ता

विद्युत मंत्रालय भारत सरकार

अग्रणी भागीदार

केन्द्रीय विद्युत प्राधिकरण

Hindustan (H) Lucknow - 15/10/2024

TC

निर्णय लिया गया। इसके लिये प्रति पये प्र... छात्र प्रति दिवस की दर तय ने गई है। इस पर लगभग 95 करोड़ पये खर्च होगा। इसमें 57 करोड़ रुपये ...द्रांश व 38 करोड़ रुपये राज्यांश ...मिल है।

...छ्य सचिव ने कहा कि योजना में ...ने वाले विद्यालयों में अध्ययनरत ...क छात्र को उच्चतम गुणवत्ता का ... स्तर पर निर्धारित मानक के अनुसार ... किया जाए। यह अतिरिक्त सप्लीमेन्ट्री न्यूट्रीशन अगले महीने से मार्च 2025 तक प्रत्येक बृहस्पतिवार (कुल-19 विद्यालय दिवस) को समस्त छात्रों को दिया जाएगा। बैठक में महानिदेशक स्कूल शिक्षा कंचन वर्मा सहित अन्य वरिष्ठ अधिकारी शामिल हुए।

...राजभवन का नाम बदल कर 'सेवा भवन' कर दिया जाए। साथ ही, वहां बदलाव निर्माण का नक्शा भी जनता के ध्यानार्थ वहीं प्रदर्शित कराया जाए। अखिलेश सोमवार रात एक्स पर लिखा, "आशा है, राजभवन के नव निर्माण का नक्शा सभी मानकों के साथ पहले से ही पास करवा कर ही निर्माण शुरू करवाया गया होगा।

...के विधायक आवास परिसर में सोमवार को नया मोड़ आया। विधायक आवास में आत्महत्या करने वाली नाबालिग नौकरानी की मां के प्रार्थना पत्र पर कोर्ट ने युवक के खिलाफ जांच करने का आदेश दिया है। अदालत ने मुकदमे की जांच कर रहे अधिकारी को यह आदेश जारी किया है।

...शाहजहांपुर निवासी मृतक नाबा... मां ने अधिवक्ता के जरिए 175(बीएनएस के तहत प्रार्थना पत्र दे केस दर्ज करने की मांग की थ सोमवार को मुख्य न्यायिक मजिस्ट ने पहले से बदोही कोतवाली में द मामले में जांच अधिकारी को प्रार्थ पत्र का संज्ञान लेकर जांच करते ह उचित कार्रवाई का आदेश दिया।

पेट्रोल पंप प्रवेश मार्ग 7 मीटर होने पर भी पास होगा नक्शा

लखनऊ, विशेष संवाददाता। राज्य सरकार ने शहरों में पेट्रोल पंप खोलने ...लों को बड़ी राहत दी है। लोक ...र्माण विभाग के शासनादेश के ...धार पर 20 गुणे 20 मीटर आकार ... पेट्रोल पंप पर प्रवेश और बाहर ...कलने के लिए 7.5 मीटर चौड़ी ...क होने पर भी नक्शा पास किया ...ए अभी तक नौ मीटर की ...नि... ता थी।

...वन निर्माण एवं विकास ...धिनियम 2008 में इसके लिए

09 मीटर चौड़ाई की थी अनिवार्यता

प्रावधान करते हुए सोमवार को विशेष सचिव आवास उदय भानु त्रिपाठी द्वारा शासनादेश जारी किया गया। इसके मुताबिक प्रत्येक पेट्रोल फिलिंग स्टेशन और पेट्रोल फिलिंग स्टेशन कम सर्विस स्टेशन में प्रवेश करने व बाहर निकलने के लिए सड़कों की चौड़ाई का न्यूनतम मानक नौ मीटर पहले रखा गया था।

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)
पंजीकृत कार्यालय: प्रथम तल, 'ऊर्जानिधि', 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली– 110001, (भारत) फैक्स नं.: 011 23443990

वैश्विक आह्वान (केवल ई-निविदा के माध्यम से)

...परियोजना के लिए निविदा का प्रशासन, और ...(BOT) ...पर, परियोजना सेवा प्रदाता का चयन

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कम्पनी एकल चरण दो लिफाफा प्रक्रिया वाले 'प्रस्ताव हेतु अनुरोध' (आरएफपी) का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाईट https://www.mstcecommerce.com एवं https://www.pfccliindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने से एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10.30 बजे (आईएसटी) से 16.00 बजे (आईएसटी) के बीच 9वीं तल, विंग–ए, स्टेटमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली–110001, फोन नं. 91–11–23443986, फैक्स: 91–11–23443990, ई–मेल: pfcci.ipc@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com तथा https://www.pfccliindia.com से भी डाउनलोड किए जा सकते हैं, हालांकि, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी की जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए सर्वेक्षण रिपोर्ट एवं स्पष्टीकरण उन बोलीदाताओं को जारी किए जाएंगे। जिन्होंने उपरोक्त परियोजना हेतु आरएफपी की निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त/खरीदा था। स्पष्टीकरण/संशोधन/समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए निविदाता नियमित रूप से वेबसाईट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	परेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि./मा.मा./व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि./मा.मा./व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि./मा.मा./व.व.)
1	गुजरात के कांडला क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (चरण–I: 3 गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक
2	चरण–I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम: भाग बी1 योजना (निर्यात एस/एस में 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	खावड़ा–II REZ चरण–I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कंसल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक — पहलकर्त्ता — अग्रणी भागीदार

छावनी परिषद कार्यालय, फतेहगढ़, फर्रुखाबाद

पत्रांक संख्या: एफ0सी0बी0/3/22/0/990 — 14 अक्टूबर 2024

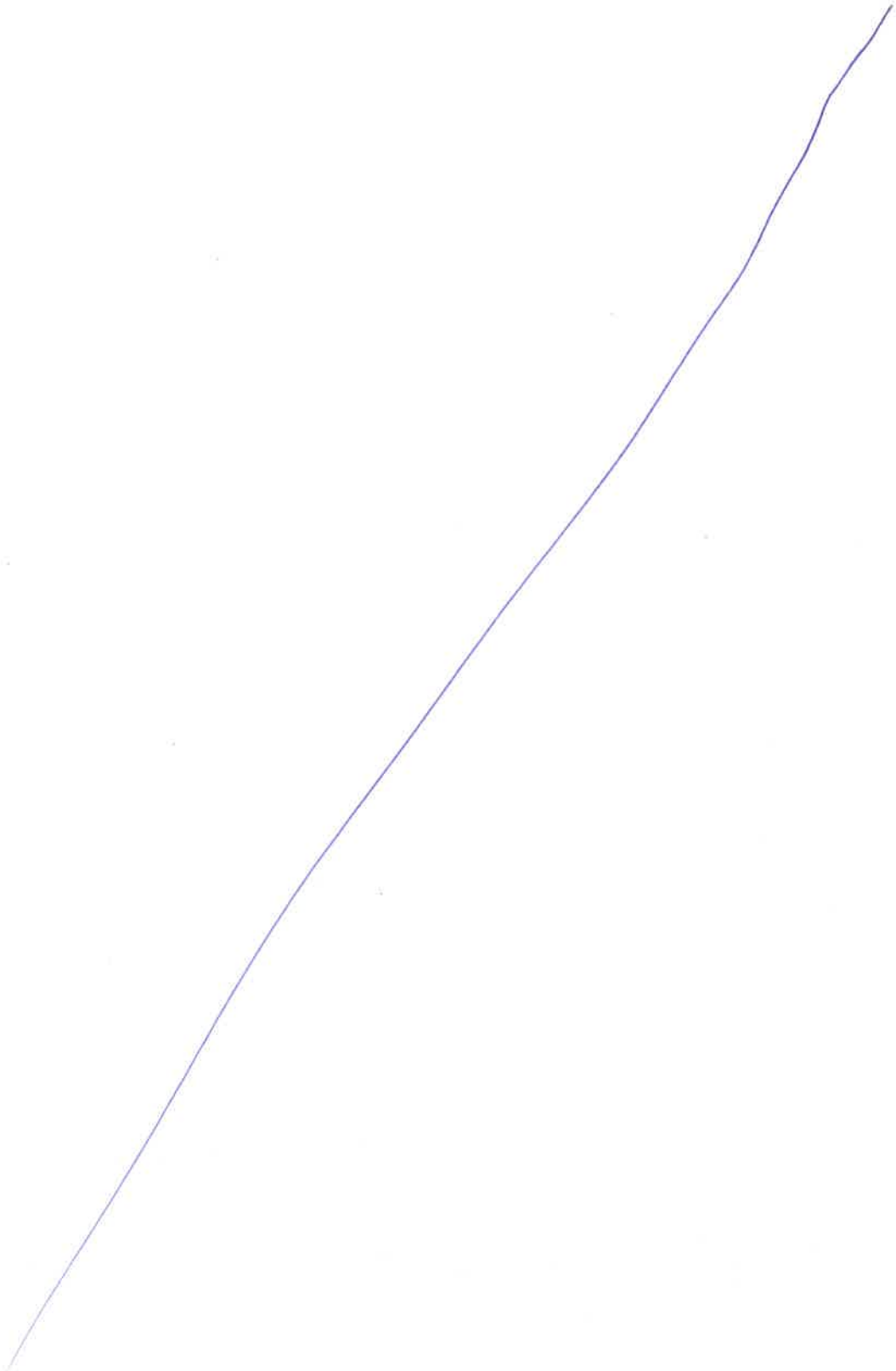
पुनः नीलामी सूचना

सर्वसाधारण को सूचित किया जाता है, कि पिलर संख्या 01 जीवा घटिया से पिलर संख्या 36 बरसदियाघाट के बीच गंगा नदी की मध्य धारा तक जिसका छावनी में सर्वे संख्या 259 है, जिसके अन्तर्गत आने वाला तल में सब्जी, फल की फसल उगाने हेतु पहलेज/भाग की नीलामी जोकि दिनांक 16.10.2024 को 03:30 बजे कार्यालय छावनी परिषद फतेहगढ़ कैण्ट में होनी नियत थी, प्रशासनिक कारणों से स्थगित की जाती है। उक्त नीलामी अब दिनांक 26.10.2024 को 03:30 बजे कार्यालय छावनी परिषद फतेहगढ़ में आयोजित की जायेगी।

नीलामी के नियम व शर्तें पूर्ववत रहेंगी।

(सुधीर कुमार)
मुख्य अधिशाषी अधिकारी
छावनी परिषद फतेहगढ़

Hindustan (H) Kanpur- 15/10/2024



TC

किए जा रहे हैं।

ality Cancer Institute

, Lucknow-226002
Email: jdmm.sscih@gmail.com

NOTICE

...ding/Bidding from Manufacturers/ ...ealers/Accredited Agents for the ...arious departments of the institute ...nequin, Advance Life Support, ...od and Fluid Warmer, Peripheral ...ine MFM (Xerox laser, Mono ...ortable Vein Viewing Device for ...se with pump, Medical Training ...dical Education or Training, ...gical Operating ENT Microscope, ...tor & Video Laryngoscope & Laboratory Drying Oven, Tissue ...ed to submit their offers on GeM ...and financial Bid as per terms and ...

...their EMD against previous tender ...ed need to submit bid again with ...o submit EMD again.

...nt, Date of Submission and opening ...: The list of equipment will also be ...tute.edu.in for reference only. The ...ortal with terms and conditions as ...rves the right to accept or reject any ...reason thereof. In case any legal ...w at Lucknow (UP), India.

Director

...ब्जा सूचना

...न 8 (1) के अन्तर्गत]

...(3)(12) तथा प्रतिभूति हित (प्रवर्तन) ...फ इंडिया का प्राधिकृत अधिकारी ने ...करने को कहा था। ऋणियों के द्वारा ...सूचित किया जाता है कि प्राधिकृत ...प्रदत्त अधिकारों का प्रयोग हुए ...कराने हेतु उपलब्ध समय सीमा से ...विशेष रूप से तथा सर्वसाधारण को ...हैं। सम्पत्तियों के सम्बन्ध में किया ...सौदा ऋणी/बन्धककर्ताओं का ध्यान ...ी की तरफ आकर्षित किया जाता है।

...ख्या	...देय ...की तिथि	कब्जे की तिथि	बकाया राशि ₹
...ल, ...पुर, ...86,	26.06.2024	09.10.2024	11,64,688.05 + ब्याज व अन्य खर्चे

प्राधिकृत अधिकारी

...tion Ltd.

...102425
...ion, Lucknow

Date: 10/10/2024

...n GeM Portal from eligible and ...Equipments. The schedules of

...	Last Date & Submission of Online Bids	Date & Time of Opening of Technical Bids
	...0/10/2024 upto 19:00 PM	30/10/2024 at 19:30 PM
	...19/10/2024 upto 19:00 PM	19/10/2024 at 19:30 PM
	...1/10/2024 upto 15:00 PM	21/10/2024 at 15:30 PM
	...9/10/2024 upto 18:00 PM	19/10/2024 at 18:30 PM
	...1/10/2024 upto 12:00 PM	28/10/2024 at 12:30 PM
	...1/10/2024 upto 12:00 PM	21/10/2024 at 12:30 PM
	...1/10/2024 upto 11:00 PM	21/10/2024 at 11:30 PM
	...0/10/2024 upto 15:00 PM	31/10/2024 at 15:30 PM
	...1/10/2024 upto 18:00 PM	31/10/2024 at 18:30 PM

...n. Kindly check GeM Portal & ...Managing Director, UPMSCL

...ar Pradesh

आगरा नगर निगम, आगरा

निविदा सूचना

नगर निगम आगरा द्वारा नगर निगम सीमान्तर्गत विज्ञापन व्यवसाय के विभिन्न कार्यों हेतु नगर निगम के विज्ञापन / विभाग में पंजीकृत ठेकेदारों से ई-टेण्डरिंग की वेबसाइट https://etender.up.nic.in के माध्यम से निविदा आमंत्रित की जाती है। निविदा की शर्तें एवं कार्यों का विवरण नगर निगम आगरा की वेबसाइट https://nagarnigamagra.com पर उपलब्ध है। जमानत धनराशि एफ.डी.आर के रूप में ली जायेगी, जिसका नगर आयुक्त, नगर निगम आगरा के नाम बन्धक होना अनिवार्य होगा। निविदा प्रपत्र मूल्य की धनराशि RTGS / NEFT के माध्यम से नगर निगम के एच.डी.एफ.सी. बैंक में खाता संख्या- 50200085411620, शाखा-संजय प्लेस, आगरा IFSC Code HDFC0000121 खाता नाम नगर निगम आगरा ई.एम.डी. अकाउंट में जमा कराते हुए धनराशि ट्रांसफर का यूटीआरएन नम्बर आदि की स्कैन कॉपी निविदा के साथ वेबसाईट पर अपलोड करना अनिवार्य होगा। किसी भी निविदा को बिना कारण बताये स्वीकृत / अस्वीकृत करने का अधिकार नगर आयुक्त, नगर निगम आगरा को होगा। सशर्त निविदा मान्य नहीं होगी।

टेण्डर शेड्यूल (Tender Schedule)

S. N.	नगर निगम / ULB Stage	ठेकेदार / Vendor Stage	प्रारम्भ दिनांक एवं दिनांक	अंतिम दिनांक एवं दिनांक
1	Tender Release		17.10.2024, 02:00 PM	24.10.2024, 02:00 PM
2		Tender Download	17.10.2024, 02:00 PM	24.10.2024, 02:00 PM
3		Bid Submission	17.10.2024, 02:00 PM	24.10.2024, 02:00 PM
4	Close for Bid			24.10.2024, 02:00 PM
5	Bid Opening		24.10.2024, 04:00 PM	

प्रभारी विज्ञापन,
नगर निगम, आगरा

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)
पंजीकृत कार्यालय: प्रथम तल, 'ऊर्जानिधि', 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली– 110001, (भारत) फैक्स नं.: 011.23443990

वैश्विक आमंत्रण: (केवल ई–निविदा के माध्यम से)

पारेषण परियोजना के लिए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण सेवा प्रदाता के चयन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कंपनी एकल चरण दो लिफाफा प्रक्रिया वाले, प्रस्ताव हेतु अनुरोध' (आरएफपी) का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाइट https://www.mstcecommerce.com एवं https://www.pfccindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने में एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10:30 बजे से 16:00 बजे (आईएसटी) के बीच दो तल, विंग–ए, स्टेटसमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली–110001, फोन नं. 91–11–23443986 फैक्स: 91–11–23443990, ई–मेल: pfcl.itp@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com तथा https://www.pfccindia.com से भी डाउनलोड किए जा सकते हैं, बशर्ते, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ–प्रतिदेय शुल्क रु. 5,00,000/– या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी को जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए सहभागी रिपोर्ट एवं स्पष्टीकरण सभी बोलीदाताओं को जारी किए जाएंगे। जिन्होंने उपरोक्त परियोजना हेतु आरएफपी को निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त/खरीदा था। स्पष्टीकरण/संशोधन/समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए निविदाता नियमित रूप से वेबसाइट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	पारेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि./मा.मा./व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि./मा.मा./व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि./मा.मा./व.व.)
1	गुजरात के कोहला क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (वरण–I के गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक
2	चरण–I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम मार्ग बी+ योजना (विंचिल एस/एस में 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	अनंतपुर–II REZ चरण–I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कंसल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक — PFC Consulting Ltd. (पीएफसी कंसल्टिंग लिमिटेड की पूर्ण स्वामित्वाधीन सहायक कंपनी) (भारत सरकार का एक उपक्रम) — पंडलकर्ता — अग्रणी भागीदार

Hindustan (H) Agra - 15/10/2024

र, थोक खाद्य महंगाई में भी जोरदार तेजी

टमाटर में भी बढ़ोतरी दर्ज

ाता कम होने के कारण इस वर्ष जुलाई प्रतिशत तक बढ़ गई। जबकि अगस्त त बढ़ोतरी देखी गई। इसके पीछे भी में कमी है, जो बीते वित्तीय वर्ष के प्रतिशत कम रहा है। टमाटर की ंबर 2023-जून 2024 के दौरान सदी बढ़ गए है।

उत्पाद	खुदरा	थोक (सीपीआई)	(डब्ल्यूपीआई)
सब्जी	21.7	16.1	
दालें	16.0	19.4	
अनाज	8.3	8.9	
चीनी	5.8	6.5	
मसाले	3.3	10.2	
पेट्रोल डीजल	-1.8	-1.2	

(यह आंकड़ा मार्च से अगस्त 2024 तक का है।)

दिल्ली : सब्जियों के दाम आसमान पर

राजधानी में टमाटर 80 से 100 रुपये प्रति किलोग्राम पर बिक रहा है। आलू भी 40 रुपये, प्याज 60 से 70 रुपये और गोभी 100 रुपये प्रति किलोग्राम की दर से बिक रही है।

नोएडा : तीन गुना तक कीमतें बढ़ीं

नोएडा में सब्जियों के दाम छह माह में तीन गुना बढ़ गए। तोरी 30 से 90 रुपये किलो हो गई है। टमाटर के दाम 90 से 100 रुपये प्रति किलो पहुंच गए हैं।

गाजियाबाद : 100 रुपये पहुंचा टमाटर

शहर में आलू, प्याज और टमाटर के दाम सबसे ज्यादा बढ़े। टमाटर के दाम 30-35 से बढ़कर 100 रुपये किलो तक पहुंच गए। आलू 25 से बढ़कर 45 रुपये किलो हो गया है।

चर्चा कंज्यूमर कनेक्ट इनिशिएटिव

व कलेक्शन लॉन्च अपने अंदाज में

ए सुंदर कुर्तियां व इंडो त्योहारी हौल को और खूबसूरत बना रही है वही पुरुषों के लिए कैजुअल से कर एथनिक परिधानों की एक स्तृत श्रृंखला है तथा बच्चों के लिए शेष रेंज में रंगीन और आकर्षक जाइन उपलब्ध है।



न सिविल, मटेरियल्स, ेनेबिलिटी ICCMES-द्घाटन

ोलन, हिमाचल प्रदेश में फलतापूर्वक संपन्न हुआ। यह तिथित आयोजन सिविल जीनियरिंग, मटेरियल साइंस और र्यावरणीय स्थिरता के क्षेत्रों में श्विक विशेषज्ञों को एक साथ ाकर, शोधकर्ताओं, वैज्ञानिकों और द्योग के पेशेवरों के लिए एक महत्वपूर्ण मंच साबित हो रहा है। इस म्मेलन का आयोजन जेयूआईटी के सिविल इंजीनियरिंग विभाग द्वारा किया गया है।

व 2024 के दौरान उद्घाटन के साथ स्थापित किया

करता है।

सिंगापुर फ्लैगशिप ने APAC

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)
पंजीकृत कार्यालय: प्रथम तल, 'कंजीनिधि', 1, बाराखम्बा लेन, कनॉट प्लेस, नई दिल्ली- 110001, (भारत) फैक्स नं. 011-23443990

पात्रक आमंत्रण (केवल ई-निविदा के माध्यम से)

अन्तर्राष्ट्रीय पारेषण परियोजना के लिए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण सेवा प्रदाता के चयन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का उपक्रम) की पूर्ण स्वामित्वाधीन सहायक कम्पनी एकल चरण दो लिफाफा प्रक्रिया वाले "प्रस्ताव हेतु अनुरोध" (आरएफपी) का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजना की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक बोलीदाता वेबसाइट https://www.mstcecommerce.com एवं https://www.pfccIindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेज देख सकते हैं।

निविदादाता, अ-प्रतिदेय शुल्क रु. 5,00,000/- या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी का भुगतान करके आरएफपी दस्तावेज 28.09.2024 से निम्नलिखित परियोजना के लिए निविदा जमा करने से एक कार्य दिवस पूर्व तक सभी कार्य दिवसों में 10.30 बजे (आईएसटी) से 16.00 बजे (आईएसटी) के बीच 9वां तल, विंग-ए, स्टेटमैन हाउस, बाराखम्बा रोड, कनॉट प्लेस, नई दिल्ली-110001, फोन नं. 91-11-23443990 फैक्स: 91-11-23443990, ई-मेल: pfccl.itp@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com तथा https://www.pfccIindia.com से भी डाउनलोड किए जा सकते हैं, यद्यपि, ऐसे मामले में इच्छुक पार्टियों को आरएफपी के उत्तर के साथ अलग से अ-प्रतिदेय शुल्क रु. 5,00,000/- या यूएसडी (यूएस डॉलर) 7,000 प्लस 18 प्रतिशत की दर से लागू जीएसटी को जमा करके आरएफपी के उत्तर जमा कर सकती है। आरएफपी दस्तावेज के लिए सर्वेक्षण रिपोर्ट एवं स्पष्टीकरण उन बोलीदाताओं को जारी किए जाएंगे। जिन्होंने उपरोक्त परियोजना हेतु आरएफपी को निविदा जमा करने की तिथि से कम से कम एक कार्य दिवस पूर्व आवश्यक शुल्क का भुगतान कर आरएफपी दस्तावेज प्राप्त/खरीदा था। स्पष्टीकरण/संशोधन/समय विस्तार यदि होगा, आदि के संबंध में स्वयं को अद्यतन रखने के लिए निविदाता नियमित रूप से वेबसाइट देखते रहें। इस संबंध में महत्वपूर्ण तिथियां निम्नानुसार हैं:

क्र. सं.	पारेषण योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दि.दि./मा.मा./व.व.)	आरएफपी का उत्तर जमा करने की अंतिम (दि.दि./मा.मा./व.व.)	आरएफपी के उत्तर खोलने की तिथि (दि.दि./मा.मा./व.व.)
1	गुजरात के कांडला क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम (चरण-I: 3 गीगावॉट)	04/11/2024	17/12/2024 को 15:00 बजे (आईएसटी) तक	17/12/2024 को 15:30 बजे (आईएसटी) तक
2	चरण-I के तहत गुजरात के मुंद्रा क्षेत्र में ग्रीन हाइड्रोजन/अमोनिया उत्पादन क्षमता के लिए बिजली की आपूर्ति हेतु ट्रांसमिशन सिस्टम: भाग बी: योजना (नेविनल एस/एस में 3 गीगावॉट)	04/11/2024	18/12/2024 को 15:00 बजे (आईएसटी) तक	18/12/2024 को 15:30 बजे (आईएसटी) तक
3	अनंतपुर-II REZ- चरण-I के एकीकरण के लिए ट्रांसमिशन सिस्टम (4.5 गीगावॉट के लिए)	04/11/2024	19/12/2024 को 15:00 बजे (आईएसटी) तक	19/12/2024 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कंसल्टिंग लिमिटेड बिना कोई कारण बताए और बिना किसी दायित्व के निविदा प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

बोली प्रक्रिया समन्वयक
PFC Consulting Ltd.
(पीएफसी लिमिटेड की पूर्ण स्वामित्वाधीन सहायक कंपनी)
(भारत सरकार का एक उपक्रम)

पहलकर्ता
ऊर्जा मंत्रालय
भारत सरकार

अग्रणी भागीदार
केंद्रीय विद्युत प्राधिकरण

कार्यालय खण्ड विकास अधिकारी लखावटी (बुलन्दशहर)

पत्रांक: 211/निविदा आमंत्रण/2024-25 दिनांक: 28.09.2024

निविदा आमंत्रण सूचना

एतद द्वारा सर्व साधारण को सूचित किया जाता है कि वर्ष 2024-25 में क्षेत्र पंचायत के योजनान्तर्गत निम्नांकित कार्यों की निविदायें शासकीय विभाग में पंजीकृत ठेकेदारों/फर्मों जो आयकर, वाणिज्यकर (जी0एस0टी0), विभाग में पंजीकृत हो, से सीलबन्द निविदायें आमंत्रित की जाती हैं। निम्नलिखित निविदायें दिनांक-21-10-2024 को सायं 4:00 बजे अपरान्ह तक कार्यालय में रखे टेण्डर बॉक्स में डाली जा सकती है। और बिल ऑफ क्वान्टिटी/टेण्डर फार्म की बिक्री दिनांक-21-10-2024 को अपरान्ह 2:00 अपरान्ह बजे तक कार्यालय में की जायेगी। प्राप्त निविदाओं को दिनांक-22-10-2024 को 11:00 बजे पूर्वान्ह में अधोहस्ताक्षरी अथवा अधिकृत/गठित समिति एवं टेण्डर दाताओं अथवा उनके अधिकृत प्रतिनिधि के समक्ष खोली जायेगीं। यदि उक्त दिनांक को अवकाश रहने की दशा में निविदायें आगामी कार्यदिवस को खोली जायेगी।

recognised accounting practices and policies to the extent applicable.

5. The above is an extract of the detailed format of quarterly/annual financial results filed with the Stock Exchanges under Regulation 33 of the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015. The full formats of the quarterly/annual financial results are available on the websites of the Stock Exchanges, www.nseindia.com, www.bseindia.com, and on the Company's website, www.hcltech.com.

By the order of the Board of Directors
for HCL Technologies Limited

Roshni Nadar Malhotra	C. Vijayakumar	Shiv Walia
Chairperson	Chief Executive Officer and	Chief Financial Officer
DIN - 02346621	Managing Director	
	DIN - 09244485	

Noida (UP), India
14 October 2024

HCL

PFC CONSULTING LIMITED

(A wholly owned subsidiary of PFC Ltd.)
Regd. Office: First Floor, Urjanidhi, 1, Barakhamba Lane, Connaught Place, New Delhi 110001, (India) Fax : 011-23443990

GLOBAL INVITATION (THROUGH E-BIDDING ONLY)

FOR SELECTION OF TRANSMISSION SERVICE PROVIDER ON BUILD, OWN, OPERATE AND TRANSFER (BOOT) BASIS FOR INTER-STATE TRANSMISSION PROJECTS

PFC Consulting Limited, a wholly owned subsidiary of Power Finance Corporation Limited (A Government of India Undertaking), invites proposals for setting up of transmission projects on Build, Own, Operate and Transfer (BOOT) basis following single stage two envelope process of Request for Proposal (RFP).

Interested bidders may refer to the RFP notification and RFP documents available on the website https://www.mstcecommerce.com and https://www.pfcclindia.com.

The Bidders may obtain the RFP documents on all working days between 10:30 hrs (IST) and 16:00 hrs (IST) from 15.10.2024 to one working day prior to bid submission for the projects mentioned below on payment of a non-refundable fee of Rs. 5,00,000/- or USD 7,000 plus applicable GST @18% from 9th Floor, Wing A, Statesman House, Connaught Place, New Delhi - 110001, Tel.: 91-11-23443996; Fax: 91-11-23443990; e-mail: pfcclitp@pfcindia.com. The RFP documents can also be downloaded from https://www.mstcecommerce.com and https://www.pfcclindia.com, however, in such case, interested party can submit Response to RFP only on submission of non-refundable fee of Rs. 5,00,000/- or USD 7,000 plus applicable GST @18% separately. The survey report and clarification to RFP documents shall be issued to those bidders, who have obtained/ purchased RFP documents by paying requisite fee at least one working day prior to bid submission date. Bidders should regularly visit website to keep themselves updated regarding clarifications/ amendments/ time extensions etc., if any. The important timelines in this regard are as follows:

S. No.	Name of Transmission Scheme	Last Date for seeking clarifications (dd/mm/yyyy)	Last Date for submission of response to RFP (dd/mm/yyyy)	Date of opening of Response to RFP (dd/mm/yyyy)
1	Transmission System for supply of power to Green Hydrogen/Ammonia manufacturing potential in Kandla area of Gujarat (Phase-I: 3 GW)	04/11/2024	17/12/2024 up to 15:00 hrs (IST)	17/12/2024 up to 15:30 hrs (IST)
2	Transmission System for supply of power to Green Hydrogen/Ammonia manufacturing potential in Mundra area of Gujarat under Phase-I: Part B1 scheme (3 GW at Navinal S/s)	04/11/2024	18/12/2024 up to 15:00 hrs (IST)	18/12/2024 up to 15:30 hrs (IST)
3	Transmission System for integration of Anantapur-II REZ- Phase-I (for 4.5 GW)	04/11/2024	19/12/2024 up to 15:00 hrs (IST)	19/12/2024 up to 15:30 hrs (IST)

Note: PFC Consulting Limited reserves the right to cancel or modify the process without assigning any reason and without any liability. This is not an offer.

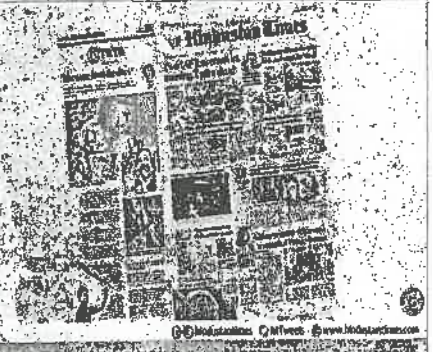
Bid Process Coordinator — An Initiative of — Initiative Partner

Catch the latest column of

TWTW

THE WEEK THAT WAS

A quiz on the week's development.



Mint (CE) - Ahmedabad - 15/10/2024

Head Office: Lala Bazar, Almora-263601 (Uttarakhand)
Phone: 05962 231947/230743 E-mail: info@almorourbanbank.com

Ref : 542/A.O./2024-25 Date : 16.10.2024

Almora Urban Co-operative Bank Ltd. invites proposals for-

1- CTS solution with continuous Clearing & On realisation settlement.

For details/specification of requirements, terms and conditions please visit our bank web site www.almorourbanbank.com under notice column.

MD/CEO

UPSIDA कार्यालय प्रधान महाप्रबन्धक (आर).
उ0प्र0 राज्य औद्योगिक विकास प्राधिकरण
ए-3/4, सरसपुर, कानपुर

ई-निविदा सूचना

एतद्द्वारा सूचित किया जाता है, कि विभिन्न औद्योगिक क्षेत्रों के अन्तर्गत विकास/अनुरक्षण/उन्नीकरण कार्य हेतु सरकारी विभागों/सार्वजनिक उपक्रमों/निगमों/प्राधिकरणों/परिषदों/नगर निकायों में कार्यरत फर्मों/ठेकेदारों से ई-निविदायें आमंत्रित की जाती है, जिसको अपलोड करने की समयसीमा निम्नवत् है:-

1.क्रम सं0 1 पर अंकित कार्य की निविदा दिनांक 18.10.2024 को पूर्वाह्न 11.00 बजे से दिनांक 11.11.2024 को अपराह्न 5.00 बजे तक अपलोड की जा सकती है, जिन्हें दिनांक 12.11.2024 को पूर्वाह्न 11.00 बजे खोला जायेगा (पूर्णकालिक)

निविदादाताओं द्वारा केवल शपथपत्रों की मूल प्रतियों निविदा प्रपत्रों में उल्लिखित दिनांक तक कार्यालय में जमा की जा सकेंगी। ई-निविदा के माध्यम से आमंत्रित की जाने वाली निविदाओं का विवरण निम्नवत् है:-

क्रमांक	कार्य का नाम	कार्य की लागत रू0 (करोड़ में)
1	Development of Bulk Drug Pharma Park at Distt. Lalitpur on 352.91 Acres. (Package-1 – Road work, Storm Water work drain & structures, Minor Bridge and RCC Trench, Water Supply, Wastewater Network (LTDIs + HTDIS), Truck Parking, Compound Wall, Landscaping, Admin Building, Firefighting Building, Entrance Gate, ICT Network, Power Supply) (On EPC Basis)	103.67

नोट:- निविदादाता अपनी निविदाओं में समस्त कर सहित दरें अंकित करें। जी0एस0टी0 अलग से देय होगा।

निविदा सम्बन्धी विस्तृत जानकारी प्राधिकरण की website:www.onlineupsidc.com पर स्थित ई-लिंक एवं यूपीएलसी की website: http://etender.up.nic.in पर देखी जा सकती है। अन्य जानकारी हेतु कार्यालय के सहायक प्रबन्धक (सिविल) के मोबाइल नं0 9044197188 पर सम्पर्क किया जा सकता है।

प्रधान महाप्रबन्धक (आर), उ0प्र0रा0औ0वि0प्रा0, कानपुर

HALDWANI: Police registered a first information report (FIR) against a bank manager for allegedly attempting to rape a 35-year-old woman in Nainital district and abetting the suicide of her husband, officials familiar with the matter said on Tuesday.

The FIR was lodged against the accused, Uttarakhand Gramin Bank Daulatpur branch manager Rohit Tamta, based on a complaint filed by the woman.

Chorgalia police station in-charge Rajesh Kumar Joshi said, "Based on the complaint of the woman, we have registered a FIR against manager Rohit Tamta under sections 108 (abetment of suicide), 33 (house trespass after preparation for hurt, assault or wrongful restraint), 351 (3) (criminal intimidation), 77 (voyeurism), and 78 (attempt to rape) of the Bharatiya Nyaya Sanhita (BNS). Our efforts to nab the accused are underway."

In her complaint, the woman said that she had a bank account in the bank where Tamta worked. The woman alleged that Tamta used to "stare at her with bad intentions" during her visits to the bank in Daulatpur area of Haridwar district.

Around a month ago, Tamta tried to call her on her phone. The woman notified her husband about the call. He later called Tamta and asked him to stop calling his wife.

"The bank manager threatened to kill the victim's husband and implicate him in a false SC/ST case," said a police officer, requesting anonymity. "Since then, the victim's husband had been living in distress."

On October 3, Tamta entered the woman's house and attempted to rape her. But, when she shouted for help, he ran away from the scene. "The next day, the husband killed himself," the officer added.

The victim alleged that her husband complained to the police against the manager, but the police didn't take any action.

PFC CONSULTING LIMITED
(A wholly owned subsidiary of PFC Ltd.)
Regd. Office: First Floor, Urjanidhi, 1, Barakhamba Lane, Connaught Place, New Delhi 110001 (India) Fax : 011-23443990

GLOBAL INVITATION (THROUGH E-BIDDING ONLY)
FOR SELECTION OF TRANSMISSION SERVICE PROVIDER ON BUILD, OWN, OPERATE AND TRANSFER (BOOT) BASIS FOR INTER-STATE TRANSMISSION PROJECTS

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Note: PFC Consulting Limited reserves the right to cancel or modify the process without assigning any reason and without any liability. This is not an offer.

Bid Process Coordinator: PFC CONSULTING LTD. (A wholly owned subsidiary of PFC Ltd.) (A Govt. of India Undertaking)
An Initiative of: Ministry of Power, Government of India
Initiative Partner: Central Electricity Authority

4 arrested ir firing case, p cartridges r

HT Correspondent
letters@hindustantimes.com

RUDRAPUR: Police on Tuesday arrested four people in connection with the firing incident between two groups in Jafarpur area in Udham Singh Nagar district last week, and recovered two illegal pistols and 40 used cartridges of 12-bore guns from them, said officers.

"Police have arrested four people from both sides involved in the firing incident which took place late at night last Saturday. Two illegal pistols and 40 used cartridges have been recovered from them. Police are looking for other accused involved in the incident. Primary investigation suggests dispute over commission obtained from sending people abroad was the cause behind the firing," said Manikant Mishra, senior superintendent of police (SSP), US Nagar.

A shootout took place in Jafarpur village around 11.30pm on Saturday between two groups. People of both sides were injured and two cars were vandalised. Police registered FIRs based on the complaints lodged by both sides in Dineshpur police station.

Uttarakhand NewDelhi
HT (G) New Delhi - 18/10/2024

ANNEXURE P-5

सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF CORPORATE AFFAIRS

Central Registration Centre

Certificate of Incorporation

[Pursuant to sub-section (2) of section 7 and sub-section (1) of section 8 of the Companies Act, 2013 (18 of 2013) and rule 18 of the Companies (Incorporation) Rules, 2014]

I hereby certify that ANANTAPUR II REZ TRANSMISSION LIMITED is incorporated on this SIXTH day of JANUARY TWO THOUSAND TWENTY FIVE under the Companies Act, 2013 (18 of 2013) and that the company is Company limited by shares

The Corporate Identity Number of the company is **U42201DL2025GOI440759**

The Permanent Account Number (PAN) of the company is **ABBCA9199H***

The Tax Deduction and Collection Account Number (TAN) of the company is **DELA80721E***

Given under my hand at Manesar this SIXTH day of JANUARY TWO THOUSAND TWENTY FIVE

Certification signature by DS MINISTRY OF CORPORATE AFFAIRS , CRC MANESAR 1 <ROC.CRC@MCA.GOV.IN>, Validity Unknown

Digitally signed by DS MINISTRY OF CORPORATE AFFAIRS , CRC MANESAR 1
Date: 2025.01.07 10:25:45 IST

BINNY OBEROI

Assistant Registrar of Companies/ Deputy Registrar of Companies/ Registrar of Companies

For and on behalf of the Jurisdictional Registrar of Companies

Registrar of Companies

Central Registration Centre

Disclaimer: This certificate only evidences incorporation of the company on the basis of documents and declarations of the applicant(s). This certificate is neither a license nor permission to conduct business or solicit deposits or funds from public. Permission of sector regulator is necessary wherever required. Registration status and other details of the company can be verified on mca.gov.in

Mailing Address as per record available in Registrar of Companies office:

ANANTAPUR II REZ TRANSMISSION LIMITED

Urjanidhi, First Floor, 1, Barakhamba Lane, Connaught Place, New Delhi, Central Delhi- 110001, Delhi

*as issued by Income tax Department

TC

Form No. INC-33

e-MOA (e-Memorandum of Association)
[Pursuant to Schedule I (see Sections 4 and 5) to the Companies Act, 2013)]

सत्यमेव जयते

417

Form language

(•) English ( ) Hindi

Refer instruction kit for filing the form

*All fields marked in * are mandatory*

ANNEXURE P-6 (Colly.)

*** Table applicable to company as notified under schedule I of the Companies Act, 2013**

(A - MEMORANDUM OF ASSOCIATION OF A COMPANY LIMITED BY SHARES
B - MEMORANDUM OF ASSOCIATION OF A COMPANY LIMITED BY GUARANTEE AND NOT HAVING A SHARE CAPITAL
C - MEMORANDUM OF ASSOCIATION OF A COMPANY LIMITED BY GUARANTEE AND HAVING A SHARE CAPITAL
D - MEMORANDUM OF ASSOCIATION OF AN UNLIMITED COMPANY AND NOT HAVING SHARE CAPITAL
E - MEMORANDUM OF ASSOCIATION OF AN UNLIMITED COMPANY AND HAVING SHARE CAPITAL)

A - MEMORANDUM OF ASSOCIATION OF A COMPANY LIMITED BY SHARES

Table A/B/C/D/E

1 The name of the company is

ANANTAPUR II REZ TRANSMISSION LIMITED

2 The registered office of the company will be situated in the State of

Delhi

3 (a) The objects to be pursued by the company on its incorporation are:

1. To develop Power System Network

To plan, promote and develop an integrated and efficient power transmission system network in all its aspects including planning, investigation, research, design and engineering, preparation of preliminary, feasibility and definite project reports, construction, operation and maintenance of transmission lines, sub-stations, load dispatch stations and communication facilities and appurtenant works, coordination of integrated operation of state, regional and national grid system, execution of turn-key jobs for other utilities/organizations and wheeling of power in accordance with the policies, guidelines and objectives laid down by the Central Government from time to time.

2. To study, investigate, collect information and data

TC

	To study, investigate, collect information and data, review operation, plan, research, design and prepare Report, diagnose operational difficulties and weaknesses and advise on the remedial measures to improve, undertake development of new and innovative product connected with business of the Company as well as modernize existing EHV, HV lines and Sub-Stations. 3. To act as Consultants/ Technical Advisers of public/ private sector enterprises etc. To act as consultants, technical advisors, surveyors and providers of technical and other services to Public or Private Sector enterprises engaged in the planning, investigation, research, design and preparations of preliminary, feasibility and definite project reports, manufacture of power plant and equipment, construction, generation, operation and maintenance of power transmission system from power generating stations and projects, transmission, distribution and sale of power.
(b) *Matters which are necessary for furtherance of the objects specified in clause 3(a) are	1. To obtain authority etc. to carry out its objects To obtain license, approvals and authorization from Governmental Statutory and Regulatory Authorities, as may be necessary to carry out and achieve the Objects of the Company and connected matters which may seem expedient to develop the business interests of the Company in India and abroad. 2. To obtain charters, concession etc. To enter into any arrangement with the Government of India or with any State Government or with other authorities/ commissions, local bodies or

TC

public sector or private sector undertakings, Power Utilities, Financial Institutions, Banks, International Funding Agencies and obtain such charters, subsidies, loans, advances or other money, grants, contracts, rights, sanctions, privileges, licenses or concessions whatsoever (whether statutory or otherwise) which the Company may think it desirable to obtain for carrying its activities in furthering the interests of the Company or its members.

3. To enter into Implementation/ Construction Agreement

To enter into any agreement, contract or any arrangement for the implementation of the power generation, evacuation, transmission and distribution system and network with Power/Transmission Utilities, State Electricity Boards, Vidyut Boards, Transmission Companies, Generation Companies, Licensees, Statutory bodies, other organizations (whether in Private, Public or Joint Sector Undertaking) and bulk consumers of power etc.

4. To carry on the business or purchasing, importing, exporting and trading power

To carry on the business or purchasing, importing, exporting and trading of power subject to the provisions of Electricity Act, 2003 and to supply electric power generated by other plants to distribution companies, trading companies, other generation companies and other Persons, and in this regard execute agreements with Central and State generating authorities, departments or companies, Independent Power Producers and other Persons.

5. To enter into Agreements; etc.

To secure the payments of

money, receivables on transmission and distribution of electricity and sale of fuel, as the case may be, to the State Electricity Boards, Vidyut Boards, Transmission Utilities, Generating Companies, Transmission Companies, Distribution Companies, State Governments, Licensees, statutory bodies, other organizations (whether in Private, Public or Joint Sector Undertaking) and bulk consumers of power etc. through Letter of Credits/ESCROW and other security documents.

6. To execute transmission service Agreements

To execute Transmission Service Agreements or other agreements for transmission of power to distribution, trading, and other companies, State Electricity Boards, State Utilities and any other organization and Persons.

7. To co-ordinate with Central Transmission Utility

To coordinate with the Central Transmission Utility for transmission of electricity under the provisions of Electricity Act 2003.

8. To borrow money

Subject to provisions of Sections 73, 179, 180 and other applicable provisions of the Companies Act, 2013 and subject to other laws or directives, if any, of SEBI/RBI, to borrow money in Indian rupees or foreign currencies and obtain foreign lines of credits/ grants/aids etc. or to receive money or deposits from public for the purpose of the Company's business in such manner and on such terms and with such rights, privileges and obligations as the Company may think fit. The Company may issue bonds/ debentures whether secured or unsecured; bills of exchange, promissory notes or other

securities, mortgage or charge on all or any of the immovable and movable properties, present or future and all or any of the uncalled capital for the time being of the Company as the Company may deem fit and to repay, redeem or pay off any such securities or charges.

9. To lend money

To lend money on property or on mortgage of immovable properties or against Bank guarantee and to make advances of money against future supply of goods and services on such terms as the Directors may consider necessary and to invest money of the Company in such manner as the Directors may think fit and to sell, transfer or to deal with the same.

10. To acquire, own, lease or dispose off the property

To own, possess, acquire by purchase, lease or otherwise rights, title and interests in and to, exchange or hire real estate, equipment, Transmission lines, lands, buildings, apartments, plants, equipment, machinery, fuel blocks and hereditaments of any tenure or descriptions situated in India or abroad or any estate or interest therein and any right over or connected with land so situated and turn the same to account in any manner as may seem necessary or convenient for the purpose of business of the Company and to hold, improve, exploit, re-organize, manage, lease, sell, exchange or otherwise dispose of the whole or any part thereof.

11. To deal in Scrips/Govt. Securities

Subject to applicable provisions of law, to subscribe for, underwrite, or otherwise acquire, hold, dispose of and deal with the shares, stocks, debentures or

other securities and titles of indebtedness or the right to participate in profits or other similar documents issued by any Government authority, Corporation or body or by any company or body of persons and any option or right in respect thereof.

12. To create funds and appropriate profits

To create any depreciation fund, reserve fund, sinking fund, insurance fund, gratuity, provident fund or any other fund, for depreciation or for repairing, improving extending or maintaining any of the properties of the Company or for any other purposes whatsoever conducive to the interests of the Company.

13. To purchase or otherwise acquire companies

To acquire shares, stocks, debentures or securities of any company carrying on any business which this Company is entitled to carry on or acquisition of undertaking itself which may seem likely or calculated to promote or advance the interests of the Company and to sell or dispose of or transfer any such shares, stocks or securities and the acquired undertaking.

14. To enter into partnership Agreement or Merge /amalgamate

To enter into partnership or into any agreement for joint working, sharing or pooling profits, joint venture, amalgamation, union of interests, co-operation, reciprocal concessions or otherwise or amalgamate with any person or company carrying on or engaged in or about to carry on or engaged in any business or transaction in India or abroad which the Company is authorized to carry on or engage in any business undertaking

TC

having objects identical or similar to, as are being carried on by this Company.

15. To have agencies and branch offices in India and abroad

To establish and maintain agencies, branch offices and local agencies, to procure business in any part of India and world and to take such steps as may be necessary to give the Company such rights and privileges in any part of the world as deemed proper in the interest of the Company.

16. To promote institutions or other companies

To promote and undertake the formation of any institution or Company or subsidiary company or for any aforesaid objects intended to benefit the Company directly or indirectly and to coordinate, control and guide their activities.

17(a) To acquire know how and import-export of machinery and tools etc.

To negotiate and enter into agreements and contracts with domestic and foreign companies, persons or other organizations, banks and financial institutions, in relation to the business of the Company including that of technical know-how, import, export, purchase or sale of plant, machinery, equipment, tools, accessories and consumables, financial assistance and for carrying out all or any of the objects of the Company.

17(b) To negotiate and enter into agreements etc.

To negotiate and enter into agreements and contracts for execution of turnkey jobs, works, supplies and export of plant, machinery, tools and accessories etc.

18. To enter into contracts/arrangements in connection with issue of shares/securities.

Upon and for the purpose of any issue of shares, debentures or any other securities of the Company, to enter into agreement with intermediaries including brokers, managers of issue/commission agents and underwriters and to provide for the remuneration of such persons for their services by way of payment in cash or issue of shares, debentures or other securities of the Company or by granting options to take the same or in any other manner as permissible under the law.

19. To enter into contracts of indemnity and/or guarantee

To enter into contracts of indemnity and get guarantee and allocations for the business of the Company.

20. To arrange for Training and Development

To make arrangements for training of all categories of employees and to employ or otherwise engage experts, advisors, consultants etc. in the interest of achieving the Company's objects.

21. To promote conservation, protect environment, theft etc.

To promote conservation and protection of electricity from theft, safety of life and to protect environments including air, land and water etc.

22. To provide for welfare of employees

To pay and provide for the remuneration, amelioration and welfare of persons employed or formerly employed by the

Company and their families providing for pension, allowances, bonuses, other payments or by creating for the purpose from time to time the Provident Fund, Gratuity and other Funds or Trusts. Further to undertake building or contributing to the building or houses, dwellings or chawls by grants of money, or by helping persons employed by the Company to effect or maintain insurance on their lives by contributing to the payment of premium or otherwise and by providing or subscribing or contributing towards educational institutions, recreation, hospitals and dispensaries, medical and other assistance as the Company may deem fit.

23. To take Insurance

To ensure any rights, properties, undertakings, contracts, guarantees or obligations or profits of the Company of every nature and kind in any manner with any person, firm, association, institution or company.

24. To share the profits pay, dividends and provide bonus etc

To distribute among members of the Company dividend including bonus shares out of profits, accumulated profits or funds and resources of the Company in any manner permissible under law.

25. To institute and defend the legal proceedings

To institute, conduct, defend, compound or abandon any legal proceedings by or against the Company or its officers or otherwise concerning the affairs of the Company and also to compound and to allow time for payment or satisfaction of any debts or recovery due, claims or demands by or against the Company and to refer any claims

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or demands by or against the Company or any differences arising in execution of contracts to conciliation and arbitration and to observe, comply with and/or challenge any awards preliminary, interim or final made in any such arbitration.

26. To pay and subsequently write off preliminary expenses

To pay out of the funds of the Company all costs, charges, expenses and preliminary and incidental to the promotion, formation, establishment and registration of the Company or other expenses incurred in this regard.

27. To contribute and make donations

Subject to provisions of Companies Act, 2013 to contribute money or otherwise assist to charitable, benevolent, religious, scientific national, defense, public or other institutions or objects or purposes.

28. To open accounts in Banks

To open an account or accounts with any individual, firm or company or with any bank bankers or shrofs and to pay into and withdraw money from such account or accounts.

29. To accept gifts, donations etc.

To accept gifts, bequests, devises and donations from members and others and to make gifts to members and others of money, assets and properties of any kind.

30. To pursue the objects of the Company as principal, agents, trustee or in any other capacity

To carry out all or any of the objects of the company and do all or any of the above things in any part of the world and either

as principal, agent, contractor or trustee or otherwise and either alone or in conjunction with others.

31. To enter into Contracts

To negotiate and/or enter into agreement and contract with individuals, companies, corporations, foreign or Indian, for obtaining or providing technical, financial or any other assistance for carrying on all or any of the objects of the Company and also for the purpose of activating, research, development of projects on the basis of know-how and/or financial participation and for technical collaboration, and to acquire or provide necessary formulate and patent rights for furthering the objects of the company.

32. To contribute towards promotion of trade and industry

To aid pecuniary or otherwise, any association, body or movement having for its object the solution, settlement or surmounting of industrial or labour problems or trouble or the promotion of industry or trade.

33. To take all necessary steps for winding up of the company

Subject to the provisions of Companies Act, 2013 or any amendment or re-enactment thereof in the event of winding up to distribute among the members in specie any property of the Company or any proceeds of sale on disposal of any property in accordance with the provisions of the Act.

34. To do and perform all coincidental and ancillary acts for the attainment of its objects

To do all such other things as may be deemed incidental or

conducive to the attainment of the above Objects or any of them and to carry on any business which may seem to the Company capable of being conveniently carried in connection with any of the Company's Objects or calculated directly or indirectly to enhance the value of or render profitable any of the Company's property or rights.

35. To take up studies and research experiments.

To establish, provide, maintain and conduct or otherwise subsidies research laboratories and experimental workshops for scientific, technical or researches, experiments and to undertake and carry on directly or in collaboration with other agencies scientific and technical research experiments and tests of all kinds and to process, improve and invent new products and their techniques of manufacture and to promote, encourage, reward in every manner studies and research, scientific and technical investigations and inventions of any kind that may be considered likely to assist, encourage and promote rapid advances in technology, economies, import substitution or any business which the Company is authorized to carry on.

36. To evolve scheme for restructuring or arrangement.

Subject to provisions of the Companies Act,2013, to evolve scheme for restructuring or arrangement, to amalgamate or merge or to enter into partnership or into any consortium or arrangement for sharing of profits, union of interests, co-operation, joint venture with any Person or Persons, partnership firm/firms, or company or companies carrying on or engaged in any operation capable of being

conducted so conveniently in co-operation with the business of the Company or to benefit the Company or to the activities for which the Company has been established.

37. To apply for purchase, or otherwise acquire.

To apply for purchase, or otherwise acquire any trademarks, patents, brevets, inventions, licenses, concessions and the like, conferring any exclusive or nonexclusive or limited rights to use, or any secret or other information as to any invention which may be capable of being used for any of the purposes of the Company, or the acquisition of which may benefit the Company and to use, exercise, develop or grant licenses in respect of or otherwise turn to account the property, rights or information so acquired.

38. To sell, dispose or hive off an undertaking of the Company

To sell, dispose or hive off an undertaking of the Company or any part thereof for such consideration as the Company may think fit and in particular for shares, debentures or securities of any other association, corporation or company.

39. To sell, improve, manage, develop

To sell, improve, manage, develop, exchange, loan, lease or let, under-lease, sub - let, mortgage, dispose of, deal with in any manner, turn to account or otherwise deal with any rights or property of the Company.

40. To outsource parts of its activities

To outsource parts of its activities to achieve higher efficiencies and throughputs in

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the achievement of its business goals.

4 The liability of the member(s) is limited, and this liability is limited to the amount unpaid if any, on the shares held by them.

5 Every member of the company undertakes to contribute:

(i) to the assets of the company in the event of its being wound up while he is a member, or within one year after he ceases to be a member, for payment of the debts and liabilities of the company or of such debts and liabilities as may have been contracted before he ceases to be a member; and

(ii) to the costs, charges and expenses of winding up (and for the adjustment of the rights of the contributories among themselves), such amount as may be required, not exceeding * _____ rupees.

(iii) The share capital of the company is 100000 rupees, divided into

10000	Equity Share	Shares of	10	Rupees each	

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☑ We, the several persons, whose names and address are subscribed, are desirous of being formed into a company in pursuance of this memorandum of association, and we respectively agree to take the number of shares in the capital of the company set against our respective names:

☐ I, whose name and address is given below, am desirous of forming a company in pursuance of this memorandum of association and agree to take all the shares in the capital of the company:

☐ We, the several persons, whose names and addresses are subscribed, are desirous of being formed into a company in pursuance of this memorandum of association:

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Subscriber Details					
S. No.	*Name, Address, Description and Occupation	DIN / PAN / Passport number	No. of shares taken	DSC	Dated
1	SANJAY KUMAR NAYAK K 713, JALVAYU TOWER, SECTOR 56 GURGAON GURGAON Haryana 122011 NA Gurgaon India Occupation - Service (As Nominee of PFC Consulting Limited)	0*1*7*9*	100 Equity,0 Preference		02/01/2025
2	NEERAJ SINGH C-703, F-2, THE CRESCENT APPARTMENT SEC-50 GAUTAM BUDDHA NAGAR NOIDA Uttar Pradesh 201301 NA Gautam Buddha Nagar India Occupation - Service (As Nominee of PFC Consulting Limited)	0*6*3*9*	100 Equity,0 Preference		02/01/2025
3	NAVEEN KUMAR F-024, Assotech Windsor Court Sector 78 Noida Uttar Pradesh 201301 Noida Gautam Buddha Nagar India Occupation - Service (As Nominee of PFC Consulting Limited)	1*4*7*5*	100 Equity,0 Preference		02/01/2025
4	PFC CONSULTING LIMITED Sachin Arora FIRST FLOOR, URJANIDHI, 1, BARAKHAMBA LANE CONNAUGHT PLACE NEW DELHI Delhi 110001 NA Central Delhi India Occupation - Service	A*G*A*4*4*	9400 Equity,0 Preference		02/01/2025
5	SACHIN SHUKLA 4TH FLOOR HOUSE NO 6 H1 BLOCK GOOD EARTH CITY CENTER SOUTH CITY II Gurgaon Haryana 122018 South City Gurgaon India Occupation - Service (As Nominee of PFC Consulting Limited)	0*6*3*6*	100 Equity,0 Preference		02/01/2025
6	RAKESH MOHAN Flat No-364, Sunehari Bagh Appartment, Sector-13 Rohini New Delhi Delhi 110085 NA India Occupation - Service (As Nominee of PFC Consulting Limited)	0*6*4*2*	100 Equity,0 Preference		02/01/2025
7	RISHAB JAIN T-11, FIRST FLOOR GREEN PARK EXTENSION GREEN PARK MARKET New Delhi Delhi 110016 Green Park South West Delhi India Occupation - Service (As Nominee of PFC Consulting Limited)	0*4*5*6*	100 Equity,0 Preference		02/01/2025
Total shares taken			10000 Equity,0 Preference		

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Signed before me					
Membership type of the witness *(ACA/FCA/ACS/FCS/ACMA/FCMA)*	***Name of the witness**	***Address, Description and Occupation**	**DIN / PAN / Passport number / Membership number**	**DSC**	**Dated**
FCS	Nitin kochhar	Flat No. 608, Sixth Floor, Pragati Tower - 26, Rajendra Place, New Delhi - 110008, Company Secretary	6*3*		02/01/2025

7 Shri / Smt [ ] [ ] Of [ ] resident of [ ] aged [ ] years shall be the nominee in the event of death of the sole member.

Form No. INC-34

e-AOA (e-Articles of Association)

[Pursuant to Section 5 of the Companies Act, 2013 and rules made thereunder read with Schedule I]

सत्यमेव जयते

Form language

(•) English ( ) Hindi

Refer instruction kit for filing the form

*All fields marked in * are mandatory*

Table applicable to company as notified under schedule I of the Companies Act, 2013 *(F, G, H)*

F

Table F / G / H (basis on the selection of above-mentioned field) as notified under schedule I of the companies Act, 2013 is applicable to

(F – a company limited by shares
G– a company limited by guarantee and having a share capital
H – a company limited by guarantee and not having share capital)

F - A COMPANY LIMITED BY SHARES

The name of the company is

ANANTAPUR II REZ TRANSMISSION LIMITED

Check if not applicable	Check if altered	Article No.	Description
			Interpretation
☐	☑		• 1. Interpretation clause In the interpretation of these Articles unless repugnant to the subject or context-Act The Act means The Companies Act 2013 as amended from time to time and includes any statutory modification or re-enactment thereof for the time being in force. Articles of the Company Articles means the articles of association of a company as originally framed or as altered from time to time or applied in pursuance of any previous company law or of this Act. Auditor(s) Auditor(s) mean and include persons appointed as such for the time being by the Comptroller Auditor General of India. Board or Board of Directors Board or Board of Directors in relation to a company means the collective body of the directors of the company. Books of Account Books of account includes records maintained in respect of (i)all sums of money received and expended by a company and matters in relation to which the receipts and expenditure take place (ii) all sales and purchases of goods and services by the company (iii) the assets and liabilities of the company and (iv) the items of cost as may be prescribed under section 148 in the case of a company which belongs to any class of companies specified under that section. Capital Capital means the share capital for the time being raised or authorized to be raised for the purpose of the Company. Company Shall means ANANTAPUR II REZ TRANSMISSION LIMITED Debenture Debenture includes debenture stock bonds or any other instrument of a company evidencing a debt whether constituting a charge on the assets of the company or not. Director(s) Director means a director appointed to the Board of a company under Section 2(34) of the Act. Dividend Dividend includes any interim dividend. Financial Institution Financial Institution includes a scheduled bank and any other financial institution defined or notified under the Reserve Bank of India Act 1934. Gender Words importing the masculine gender also include the feminine gender. Generation Company Generation Company shall mean any entity

		engaged in the business of generation of electricity. In Writing and Written In writing and Written include printing lithography and other modes of representing or reproducing words in a visible form. key managerial personnel key managerial personnel in relation to a company means (i) the Chief Executive Officer or the managing director or the manager (ii) the company secretary (iii) the whole-time director (iv) the Chief Financial Officer and (v) such other officer as may be prescribed. Meeting or General Meeting Meeting means Annual General Meeting or Extraordinary General Meeting of Members duly called and constituted including an adjourned meeting. In the context of Board of Directors it shall mean the meeting of the Directors including an adjourned meeting. Member Member in relation to a company means (i) the subscriber to the memorandum of the company who shall be deemed to have agreed to become member of the company and on its registration shall be entered as member in its register of members (ii) every other person who agrees in writing to become a member of the company and whose name is entered in the register of members of the company (iii) every person holding shares of the company and whose name is entered as a beneficial owner in the records of a depository. Month Month means a calendar month. Office Office means the Registered Office of the company for the time being. paid-up share capital or share capital paid-up means such aggregate amount of money credited as paid-upas is equivalent to the amount received as paid up in respect of shares issued and also includes any amount credited as paid-up in respect of shares of the company but does not include any other amount received in respect of such shares by whatever name called. Persons Persons include Corporations and firms as well as individuals. Power Transmission Utility Power Transmission Utility shall mean any entity engaged in the business of power transmission. Proxy Proxy includes Attorney duly constituted under a valid Power of Attorney. Project-In-Charge A Director of the Company designated as Project In-charge for administrating day to day activities of the Company. Public Company Public Company means a company which a. is not a private company and b. has a minimum paid-up share capital as may be prescribed Provided that a company which is a subsidiary of a company not being a private company shall be deemed to be public company for the purposes of this Act even where such subsidiary company continues to be a private company in its articles. Registrar Registrar means a Registrar an Additional Registrar a Joint Registrar a Deputy Registrar or an Assistant Registrar having the duty of registering companies and discharging various functions under this Act. Register of Members Register of Members means the Register of Members to be kept pursuant to the Act. Related Party Section 2(76)of the Act describes related party with reference to a company which means (i) a director or his relative (ii) a key managerial personnel or his relative (iii) a firm in which a director manager or his relative is a partner (iv) a private company in which a director or manager is a member or director (v) a public company in which a director or manager is a director or holds along with his relatives more than two per cent. of its paid-up share capital (vi) any body corporate whose Board of Directors managing director or manager is

			accustomed to act in accordance with the advice directions or instructions of a director or manager (vii) any person on whose advice directions or instructions a director or manager is accustomed to act Provided that nothing in sub-clauses (vi) and (vii) shall apply to the advice directions or instructions given in a professional capacity (viii) any company which is (A) a holding subsidiary or an associate company of such company or (B) a subsidiary of a holding company to which it is also a subsidiary (ix) such other person as may be prescribed. Seal Means the common seal of the company for the time being. Securities Exchange Board Securities and Exchange Board means the Securities and Exchange Board of India established under section 3 of the Securities Exchange Board of India Act 1992. Securities Securities means the securities as defined in clause (h) of section 2 of the Securities Contracts (Regulation) Act 1956.Share Means a share in the share capital of a company and includes stock. Share Capital Share Capital means the total equity share capital of the Company agreed to be issued and called the Authorized Capital of the Company as mentioned in the Memorandum of Association of the Company. Singular Number Words importing the singular number include where the context admits the plural number and vice-versa. State Electricity Board State Electricity Board means the Electricity Board or Vidyut Board or any other body by whatever name called set up by the State Governments under Electricity (Supply) Act 1948 as amended which expression shall include its successors administrators authorized representatives and permitted assigns. Transmission Company Transmission Company shall mean any entity engaged in the business of transmission of electricity. Year or Financial Year Meaning of Words Year means English calendar year and Financial Year shall have the meaning assigned thereto by Section 2(41) of the Act. Unless the context otherwise requires words or expressions contained in these regulations shall bear the same meaning as in the Act or any statutory modification there of in force at the date at which these regulations become binding on the company. Marginal Notes Marginal Notes are for ease of reference only and shall not affect the construction and interpretation of these Articles. Other Expressions Other words or expressions contained in these Articles shall bear the same meaning as a reassigned to them in the Act or any statutory modifications thereof. 2. Table F not to Apply The regulations contained in Table F in the First Schedule to the Companies Act 2013 shall not apply except to the extent that the same are repeated or contained or expressly made applicable by these Articles or by the Act but the regulations for the management of the Company and for the observance of the members thereof and their representatives shall subject to any exercise of the statutory powers of the Company with reference to the repeal or alteration of or addition to its regulations by Special Resolution as prescribed by the said Companies Act 2013 be such as contained in these Articles. 3. Business Purpose The Company shall be engaged in the business of Transmission of Electricity including construction operation maintenance and other related activities.
			Share Capital and Variation of rights

☐ ☑	II 1	• 4. Share Capital Increase of capital by the Company and how carried in to effect The Authorized Share Capital of the Company is as mentioned in clause V of the Memorandum of Association of the Company. The Company in General Meeting may from time to time by resolution increase its authorized share capital by creation of new shares such increase to be of such aggregate amount and to be divided in to shares of such respective amounts as may be determined by the General Meeting subject to the provisions of the Act.
☐ ☑	2	• 5. New Capital same as existing capital Any capital raised by the creation of new shares shall be considered as part of the original capital and shall be subject to the same provisions herein contained with reference to the payment of calls and installments forfeiture lien surrender transfer and transmission voting and otherwise.
☐ ☑	3	• 6. Reduction of Capital The Company may from time to time by special resolution reduce its capital which may be paid off either with or without extinguishing or reducing liability on shares which is in excess of the wants of the company or canceling such share capital which has been lost or is unrepresented by available assets.
☐ ☑	4	• 7. Subdivision and consolidation of shares The Company in general meeting may from time to time sub-divide or consolidate its shares or any of them and exercise any of the other powers conferred by Section 61of the Act and shall file with the Registrar such notice of exercise of any such powers as may be required by the Act.
☐ ☑	5	• 8. Register and Index of Members Beneficial owners The Company shall cause to be kept a Register and also an Index of Members and Debenture-holders in accordance with Sections 88 of the Act. Further as permissible under Section 88 of the Act the register and Index of beneficial owners maintained by a Depository shall be deemed to be the corresponding Register and Index for the purpose of this Act.
☐ ☑	6	• 9. Foreign Register of members The Company shall been titled to keep in any country outside India a Foreign Register of members resident in that country subject to compliance with the provisions of Section 88 of the Act.
☐ ☑	7	• 10. Shares to be numbered distinctively The shares in the capital held otherwise than in the depository mode shall be numbered progressively in sequence and given distinctive number Except and in the manner herein mentioned no share shall be forfeited or surrendered and shall continue to bear the number which it had originally borne.
☐ ☑		• 11. Share Application Money The Company shall ensure that the shareapplication money paid is held by it in an account with a Scheduled CommercialBank (in the name of the Company). 12. Further Issue of Capital (a) Where atany time the Company wishes to raise its subscribed share capital by issue offurther shares it shall first offer such shares to its existing shareholders inproportion to their existing shareholdings on the date of such issue. Suchoffer to the existing shareholders shall be in

		accordance with the provisionsof Section 62 of the Act. (b) The Company shall subject to applicableprovisions of the Act and Articles of Association make uniform calls from timeto time upon all the Shareholders in respect of the moneys remaining unpaid onthe issued share capital within 30 days or such time as the Board may deem fitand appropriate. 13. Shares under control of Directors Subject to theprovisions of these Articles and of the Act the shares including any sharesforming part of any increased capital of the Company shall be under the controlof the Directors who may allot or otherwise dispose off the shares to suchpersons in such proportion on such terms and conditions and at such times asthe Directors may think fit and subject to the sanction of the Company inGeneral Meeting subject to the provisions of Sections 52 and section 54 of theAct at a premium or par and such option being exercisable for such time and forsuch consideration as the Directors think fit. The Board shall cause to be filedthe returns as to allotment provided for in Section 39(4) of the Act. 14. Issueof shares for consideration other than cash Subject to these Articles and theprovisions of the Act if any the Board may issue and allot shares in thecapital of the Company as payment or in consideration or as part payment or inpart consideration of the purchase or acquisition of any property or forservices rendered to the Company in the conduct of its business and shareswhich may be so issued or allotted shall be credited or deemed to be creditedas fully paid up or partly paid up shares. 15. Power of Company to Issue SharesThe Company in General Meeting may subject to the provisions of Section 42 62of the Act provide that any shares (whether forming part of the original capitalor of any increased capital of the Company) shall be offered to such persons(whether a Member or not) in such proportion and on such terms and conditionsof the Act) at a premium or at par or at a discount as such General Meetingshall determine and with full power to give any person (whether a Member ornot) the option to call for or be allotted shares of any class of the Companyeither subject to compliance with the provisions of Sections 52 and 54 of theAct at a premium or at par or at discount such option being exercisable at suchtimes and for such consideration as may be directed by such General Meeting orthe Company in General Meeting may make any other provisions whatsoever for theissue allotment or disposal of any shares. 16. Acceptance of shares Any personapplying for shares in the Company followed by an allotment of any shares andsubscribers to the Memorandum shall be a shareholder within the meaning ofthese Articles and every person whose name is on the Register of Members shallfor the purposes of these Articles be a Member of the Company. 17. Deposit callto be a debt payable Immediately The Money (if any) which the Board shall onthe application for allotment of any shares being made by them require ordirect to be paid by way of deposit call or otherwise in respect of any sharesallotted by them shall immediately on the insertion of the name of the allotteein the Register of Members as the name of the holder of such shares become adebt due to and recoverable by the Company from the allottee thereof and shallbe paid by him accordingly. 18. Liability of Members Every Member or his heirsexecutors or administrators shall pay to the

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	8	Company the portion of the capitaland premium if any represented by or payable on his share or shares which mayfor the time being remain unpaid thereon in such amounts at such time or timesand in such manner as the Board shall from time to time in accordance with theCompanys regulations require or fix for the payment thereof. 19. ShareCertificates A certificate issued under the common seal of the companyspecifying the shares held by any person shall be prima facie evidence of thetitle of the person to such shares. (a) Every Member or allottee of shares whois holding such shares in the physical form shall be entitled without paymentto receive certificate specifying the name of the person in whose favour it isissued the shares to which it relates and the amount paid-up thereof. Suchcertificates shall be issued only in pursuance of a resolution passed by theBoard and on surrender to the Company of the letter of allotment or thefractional coupons of requisite value save in case of issues against letters ofacceptance or of renunciation or in cases of issue of bonus shares. Every suchcertificate shall be issued under the seal of the Company which shall beaffixed in the presence of two Directors and the Secretary or some other personappointed by the Board for the purpose and the two directors and the Secretaryor other persons as authorized by the Board shall sign the share certificate.Provided if the composition of the Board permits of it at least one of theaforesaid two directors shall be a person other than a Managing or a Whole TimeDirector. Particulars of every share certificate issued shall be entered in theRegister of Members against the name of the person to whom it has been issuedindicating the date of issue. For issue of any further duplicate certificatethe Board shall be entitled to charge such amount which shall not exceed fiftyRupees per Certificate. (b) A Director may sign a share certificate by affixinghis signature thereon by means of any machine equipment or other mechanicalmeans such as engraving in metal or lithography but not by means of a rubberstamp. PROVIDED that the Director shall be personally responsible for the safecustody of such machine equipment or other material used for the purpose. 20.Renewal of Share Certificates (a) No certificate of any share or shares shallbe issued either in exchange for those which are sub-divided or consolidated orin replacement of those which are defaced mutilated torn or old decrepitdestroyed or where the pages on the reverse for recording transfers have beenduly utilized unless the certificate in lieu of which it is issued is surrenderedto the Company and for issuing such share certificate the company may chargesuch fee as the Board thinks fit not exceeding twenty rupees per certificate.(b) When anew share certificate has been issued in pursuance of clause (a) ofthis Article it shall state on the face of it and against the stub or counterfoil to the effect that it is Issued in lieu of share certificate Nosub-divided replaced on consolidation. (c) If a share certificate is lost ordestroyed a new certificate in lieu thereof shall be issued only with the priorconsent of the Board and on such reasonable terms such as furnishing supportingevidence and indemnity and the payment of out-of-pocket expenses incurred bythe Company in investigating evidence produced as the Board thinks fit. (d)When anew share certificate has been issued in

		pursuance of clause (c) of thisArticle it shall state on the face of it and against the stub or counterfoil tothe effect that it is duplicate issued in lieu of share certificate No. and theword duplicate shall be stamped or printed prominently on the face of the sharecertificate. (e) Where anew share certificate has been issued in pursuance ofclause (a) and or clause(c) of this Article particulars of every such sharecertificate shall be entered in a Register of Renewed and Duplicate ShareCertificates indicating against the name(s) of the person(s) to whom thecertificate is issued the number and date of issue of the share certificate inlieu of which the new certificate is issued and the necessary changes indicatedin the Register of Members by suitable cross reference in the Remarks column.(f) All blank forms to be used for issue of share certificates shall be printedand the printing shall be done only on the authority of a resolution of the Boardand the blank forms shall be consecutively machine-numbered and the forms andthe blocks engravings facsimiles relating to the printing of such forms shallbe kept in the custody of the Secretary or of such other person as the Boardmay appoint for the purpose and the Secretary or the other person aforesaidshall be responsible for rendering an account of these forms to the Board. (g)The Committee of the Board Company Secretary of the Company or a Directorspecifically authorized by the Board for such purpose shall be responsible forthe maintenance preservation and safe custody of all books and documentsrelating to the issue of share certificates including the blank forms of sharecertificates referred to in clause (f). (h) All books referred to in clause (g)shall be preserved in good order for not less than thirty years and in disputedcases shall be preserved permanently. 21. Joint holders (a) Where two or morepersons are registered as the holders of any share they shall be treated as asingle shareholder and shall be deemed to hold the same as joint holders withbenefits of survivorship subject to the following and other provisionscontained in these Articles. (b) The Company shall be entitled to decline toregister more than four persons as the holders of any share. (c) The Jointholders of any share shall be liable severally as well as jointly for and inrespect of all calls and other payments which ought to be made in respect ofsuch shares. (d) On the death of any such joint holder the survivor orsurvivors shall be the only person or persons recognized by the Company ashaving any title to the share but the Directors may require such evidence ofdeath as they may deem fit and nothing herein contained shall be taken torelease the estate of the deceased joint holder from any liability on sharesheld by him jointly with any other person. (e) Delivery of share certificate toany one of such joint holders shall be deemed to be delivery to all of them andany one of such joint holders may give effectual discharge and receipts for anydividends or other moneys payable in respect of such shares and or in respectof any other obligation of the Company towards them. (f) Only the person whosename stands in the Register of Members as the first of the joint holders of anyshares shall be entitled to delivery of the certificate relating to such shareor to receive notices from the Company and any notice given to such personshall be deemed proper notice to all joint holders. (g) Any one of two or morejoint

			holders may vote at any meeting either personally or by proxy in respectof such share as if he were solely entitled thereto and if more than one ofsuch joint holders be present at any meeting personally or by proxy the holderwhose name stands first or higher (as the case may be) on the Register ofMembers in respect of such share shall alone be entitled to vote in respectthereof. PROVIDED always that a member present at any meeting personally shallbe entitled to vote in preference to a person present by proxy although thename of such person present by proxy stands first on the Register of Members inrespect of such shares. 22. Terms and Conditions of Preference Shares Subjectto the provisions of section 55 any preference shares may with the sanction ofan ordinary resolution be issued on the terms that they are to be redeemed onsuch terms and in such manner as the company before the issue of the shares mayby special resolution determine.
			Lien
☐	☑	9	• 23. Company to have lien on shares The Company shall have a first andparamount lien upon all shares (other than fully paid up shares) registered inthe name of each member (whether solely or jointly with others) and upon thesale proceeds thereof for all moneys(whether presently payable or not) calledor payable at a fixed time in respect of all such shares (not being fully paidup) for all moneys presently payable by him or his estate to the Company. Anysuch lien shall extend to all dividends payable and bonuses declared from timeto time declared in respect of such shares.
☐	☑	10	• 24. Enforcing lien by sale For the purpose of enforcing such lien the Board may sell the shares subject thereto in such manner as they shall think fit and for that purpose it may cause to be issued a duplicate certificate in respect of such shares and may authorize one of their Directors to execute a transfer thereof on behalf of and in the name of the Board. No sale shall be made until notice period for making call as aforesaid have expired and until notice in writing of the intention to sell shall have been made known to the shareholder for default in payment and default has been made by him in the payment of money called in respect of such shares for thirty days after the date of such notice. Upon issue of a duplicate certificate or certificates in lieu of the original share the certificate or certificates originally issued shall stand cancelled and become null and void and the same shall have no effect.
☐	☑	11	• 25. Application of proceeds of sale The net proceeds of any such sale shall be received by the Company and applied in or towards payment of such part of the amount as is presently payable and the residue if any shall (subject to a like lien for sums not presently payable as existed upon the shares before sale) be paid to the person entitled to the shares at the date of the sale.
☐	☑	12	• .
			Calls on shares
☐	☑		• 26. Directors may make calls The Board may from time to time subject to the terms on which any shares may

	13	have been issued and subject to the conditions of allotment by a resolution passed at a meeting of the Board (and not by resolution by circulation) make such call as it thinks fit upon the Members in respect of all moneys unpaid on the shares held by them respectively and each member shall pay the amount of every call so made on him to the person or persons and at the times and places appointed by the board. A call maybe made payable by installments.
☐ ☑	14	• 27. Notice of calls Not less than thirty days notice in writing of any call shall be given by the Company specifying the time and place of payment and the person or persons to whom such call shall be paid.
☐ ☑	15	• 28. When call made A call shall be deemed to have been made at the time when the resolution of the Board authorizing such call was passed at a meeting of the Board and demand notice is issued.
☐ ☑	16	• 29. Calls may be revoked or postponed A call may be revoked or postponed at the discretion of the Board.
☐ ☑	17	• 30. Directors may extend time The Board may from time to time at its discretion extend the time fixed for the payment of any call and may extend such time as to all or any of the Members for reasons which the Board may consider satisfactory but no Member shall be entitled to such extension save as a matter of grace.
☐ ☑	18	• 31. Calls to carry interest If any Member fails to pay any call due from him on the day appointed for payment thereof or any such extension thereof as aforesaid he shall be liable to pay interest on the same from the day appointed for the payment thereof to the time of actual payment at rate not exceeding 10 per cent per annum as maybe decided by the Board but the Board may in its absolute discretion and in special circumstances waive or reduce the levy of interest as deemed appropriate. Sums deemed to be call Any sum which by the terms of issue of a share becomes payable on allotment or at any fixed date whether on account of the nominal value of the share or by way of premium shall for the purposes of these Articles be deemed to be a call duly made and payable on the date on which by the terms of issue the same becomes payable and in case of non-payment all the relevant provisions of these Articles as to payment of interest and expenses forfeiture or otherwise shall apply as if such sum had become payable by virtue of a call duly made and notified. 32. Sums deemed to be call Any sum which by the terms of issue of a share becomes payable on allotment or at any fixed date whether on account of the nominal value of the share or by way of premium shall for the purposes of these Articles be deemed to be a call duly made and payable on the date on which by the terms of issue the same becomes payable and in case of non-payment all the relevant provisions of these Articles as to payment of interest and expenses forfeiture or otherwise shall apply as if such sum had become payable by virtue of a call duly made and notified. 33. Partial payment not to preclude Forfeiture Neither the receipt by the Company of a portion of any money which shall from time to time be due from any Member to the Company in respect of his shares either by way of principal or interest nor any

			indulgence granted by the Company in respect of the payment of any such money shall preclude the Company from there after proceeding to enforce a forfeiture of such shares as hereinafter provided. 34. Payment in anticipation of calls may carry interest The Board may if it thinks fit agree to and in anticipation receive from any Member willing to advance the same all of calls money or any part of the amounts of his respective shares beyond the sums actually called up and upon the moneys so paid in advance or upon so much thereof from time to time and at any time thereafter as exceeds the amount of the calls then made upon and due in respect of the shares on account of which such advances are. made the Board may pay or allow interest at such rate as the Member paying the sum in advance and the Board agree upon. The Board may agree to repay at any time any amount so advanced or may at any time repay the same upon giving to the Member three months notice in writing. PROVIDED that moneys paid in advance of calls on any shares may carry interest but shall not confer a right to dividend or to participate in profits. (b) No Member paying any such sum in advance shall be entitled to voting rights in respect of the moneys so paid by him until the same would but for such payment become presently payable.
			Transfer of shares
☐	☑	19	• 35. Register of Transfers The Company shall maintain a Register of Transfers and therein shall be fairly and distinctively enter the particulars of every transfer or transmission of any share in the physical form.
☐	☑	20	• 36. Form of transfer The instrument of transfer shall be in writing and in such form as prescribed under the Act. All the provisions of Section 56 of the Act shall be duly complied with in respect of all transfers and of the registration thereof. The Company shall not charge any fee for registration of a transfer of shares or debentures.
☐	☑	21	• 37. Instrument of Transfer to be completed and presented to the Company The Instrument of Transfer duly stamped and executed by the transferor and the transferee shall be delivered to the Company in accordance with the provisions of the Act. The instrument of transfer shall be accompanied by the Share Certificate or such evidences the Board may require to prove the title of transferor and his right to transfer the shares and every registered Instrument of Transfer shall remain in the custody of the Company until destroyed by order of the Board. Any instrument of transfer which the Directors may decline to register shall be returned to the person depositing the same.
☐	☑		• 38. Transferor deemed to be holder The transferor shall be deemed to be the holder of such shares until the name of the transferee shall have entered in the Register of Members in respect thereof. Before the registration of a transfer the certificate or certificates of the shares must be delivered to the Company along with Transfer Deed. No transfer to insolvent etc. 39. No transfer shall be made to a person of unsound mind or to an insolvent. 40. Closure of Register of Members Debenture holders The Directors shall have power on giving not less than seven days previous notice as required by Section 91 of

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		22	the Act to close the Register of Transfer Register of Members or Register of Debenture holders or the register of other security holders of the Company for any period or periods not exceeding in the aggregate forty-five days in each year (but not exceeding thirty days at any one time) as they may determine.41.Nomination by shareholder Every share-holder or debenture holder may at any time nominate in the prescribed manner a person to whom his shares or debenture shall vest in the event of his death as provided in Section 72 of the Act.42.Title to shares of deceased holder In the event there is no nomination the executors or administrators of a deceased Member or the holder of a Succession Certificate in respect of the shares of a deceased Member (not being one of two or more joint holders) shall be the only persons whom the Company will be bound to recognize as having any title to the shares registered in the name of such Member and the Company shall not be bound to recognize such executors or administrators or holders unless such executors administrators or holders shall have first obtained probate or Letters of Administration or Succession Certificate as the case may be from a duly constituted Court in India. PROVIDED that the Directors may at their absolute discretion dispense with production of Probate Letters of Administration or Succession Certificate upon such terms as to indemnity or otherwise as they think fit and may enter the name of the person who claims to be absolutely entitled to the shares standing in the name of a deceased Member as a Member.
			Transmission of shares
☐	☑	23	• 43.Transmission of Shares Subject to the provisions of the Act any person becoming entitled to any share inconsequence of the death lunacy or insolvency of any Member or by any lawful means other than by a transfer in accordance with these Articles may with the consent of the Directors (which they shall be under no obligation to give) and upon producing such evidence that he sustains the character in respect of which he proposes to act under this. Article or of his title as the Directors may require and upon such indemnity as the Directors may require either be registered as a Member in respect of such shares or elect to have some person nominated by him and approved by the Directors registered as a Member in respect of such shares. PROVIDED that if such persons shall elect to have his nominee registered he shall testify his election by executing in favor of his nominee an instrument of transfer in accordance with these Articles and until he does so he shall not be freed from any liability in respect of such shares.
☐	☑	24	• 44. Right of Board to decline or suspend registration (i) Any person becoming entitled to a share in consequence of the death or insolvency of a member may upon such evidence being produced as may from time to time properly be required by the Board and subject as hereinafter provided elect either -(a) to be registered himself as holder of the share or (b) to make such transfer of the share as the deceased or insolvent member could have made. (ii) The Board shall in either case have the same right to decline or suspend registration as it would have had if the deceased or

		insolvent member had transferred the share before his death or insolvency.
☐ ☑	25	• 45. The Company not liable for disregard of notice prohibiting registration of transfer The Company shall incur no liability or responsibility whatever in consequence of its registering or giving effect to any transfer of shares made or purported to be made by any apparent legal owner thereof (as shown or appearing in register of Members) to the prejudice of persons having or claiming any equitable right title or interest to or in the same shares notwithstanding that the Company may have had notice of such equitable right title or interest or notice prohibiting registration of such transfer and may have entered such notice or referred to it in any book or attended or given effect to any notice which may have been given to it of any equitable right title or interest or be under any liability whatsoever for refusing or neglecting so to do though it may have been entered or referred to in some book of the Company but the Company shall nevertheless be at liberty to regard and attend to any such notice and give effect thereto if the Directors shall so think fit.
☐ ☑	26	• 46. Rights of successors A person becoming entitled to a share by reason of the death or insolvency of the holder shall be entitled to the same dividends and other advantages to which he would have been entitled if he were the registered holder of the shares except that he shall not before being registered as a Member in respect of the shares been titled to exercise any right conferred by membership in relation to meetings of the Company. PROVIDED that the Directors shall at any time give notice requiring any such person to elect to be registered himself or to transfer the shares and if the notice is not complied within ninety days from the date of issue of the notice the Directors may thereafter withhold payment of all dividends bonuses or other moneys payable in respect of the shares until the requirements of the notice have been complied with.
☐ ☑	27	• .
		Forfeiture of shares
☐ ☑	28	• 47. If money payable on shares not paid notice to be given to members If any Member fails to pay any call or installment of a call on or before the day appointed for the payment of the same or any such extension thereof as aforesaid the Board may at any time thereafter during such time as any part of the call or installment remains unpaid serve a notice on him requiring him to pay the same together with any interest which may have accrued and all expenses that may have been incurred by the Company by reason of such non-payment.
☐ ☑	29	• 48. Contents of Notice The notice shall name a further day (not being less than fourteen days from the date of the service of notice) and a place or places on and at which such call or installment and such interest there on at such rate as the Directors shall determine from the day on which such call or installment ought to have been paid and expenses as aforesaid are to be paid. The notice shall also state that in the event of the non-payment on or before the day at or before the time and at

		the place appointed the shares in respect of which the call was made or installment is payable shall be liable to be forfeited.
☐ ☑	30	• 49. In default of payment shares to be Forfeited If the requirement of any such notice as aforesaid are not complied with every or any share in respect of which such notice has been given may at any time thereafter but before payment of all calls or installments interest and expenses due in respect thereof be forfeited by a resolution of the Board to that effect. Such forfeiture shall include all dividends declared or any other moneys payable in respect of the aforesaid share and not actually paid before the forfeiture. In default of payment shares to be Forfeited.
☐ ☑	31	• 50. Notice of forfeiture to a Member When any share shall have been so forfeited notice of the forfeiture shall be given to the Member in whose name it stood immediately prior to the forfeiture and an entry of the forfeiture with the date thereof shall forthwith be made in the Register of Members but no forfeiture shall be in any manner invalid by any omission or neglect to make any such entry as aforesaid in the Register.
☐ ☑	32	• 51. Forfeited share to be property of the Company and may be sold etc. Any share so forfeited shall be deemed to be the property of the Company and may be sold re-allotted or otherwise disposed of either to the original older thereof or to any person upon such terms and in such manner as the Board shall think fi t.
☐ ☑	33	• 52. Member still liable to pay calls owing at the time of forfeiture and interest Any members whose shares have been forfeited shall notwithstanding the forfeiture be liable to pay and shall forthwith pay to the Company on demand all calls installment interest and expenses owing upon or in respect of such shares at the time of the forfeiture together with interest accrued thereon at the time of the forfeiture at such rate as the Board may determine and the Board may enforce the payment thereof if it thinks fi t.
☐ ☑		• 53. Effect of forfeiture The forfeiture of a share shall involve extinction at the time of the forfeiture of all interest in and all claims and demands against the Company in respect of the share and all other rights incidental to the share except only such of those rights as by these Articles are expressly saved. 54. Evidence of forfeiture A declaration in writing by Chairman or Managing Director of the Company or by any person duly authorised in this regard that certain shares in the Company have been duly forfeited on a date stated in the declaration shall be conclusive evidence of the facts therein stated as against all persons claiming to be entitled to the shares and such declaration and the receipt of the Company for the consideration if any given for the shares on the sale or disposition thereof shall constitute a good title to such shares and the person to whom the shares are sold shall be registered as the holder of such shares and shall not be bound to see as to the application of the purchase money nor shall his title to such shares be affected by any irregularity or invalidity in the proceedings in reference to such forfeiture sale or disposition. 55. Validity of sale under Articles of forfeited

		34	shares Upon any sale after forfeiture or for enforcing a lien in purported exercise of the powers herein before given the board may appoint some person to execute an instrument of transfer of the shares sold and cause the purchasers name to be entered in the Register of Members in respect of the shares sold and the purchaser shall not be bound to see the regularity of the proceedings or to the application of the purchase money and after his name has been entered in the Register in respect of such shares the validity of the sale shall not be impeached by any person and the remedy of any person aggrieved by the sales hall be in damages only and against the Company exclusively. 56. Cancellation of Share Certificates in respect of forfeited shares Upon any sale re-allotment or other disposal under the provisions of the preceding Articles the certificate or certificates originally issued in respect of the relative shares shall (unless the same shall on demand by the Company have been (previously) surrendered to it by the defaulting member) stand cancelled and become null and void and of no effect and the Directors shall be entitled to issue a duplicate certificate or certificates in respect of the said shares to the person or persons entitled thereto. 57. Power to annul forfeiture The Board may at any time before any share so forfeited shall have been sold re-allotted or otherwise disposed of annul the forfeiture thereof upon such terms and conditions as it thinks fit.
			Alteration of capital
☐	☑	35	• 58. Alteration of Share Capital The company may from time to time by ordinary resolution increase the share capital by such sum to be divided into shares of such amount as may be specified in the resolution. Subject to the provisions of section 61 the company may by ordinary resolution the Company may from time to time– (a) consolidate and divide all or any of its share capital into shares of larger amount than its existing shares (b) convert all or any of its fully paid-up shares into stock and reconvert that stock into fully paid-up shares of any denomination (c) Sub-divide its shares or any of them into shares of smaller amount than is fixed by the memorandum so however that in the sub-division the proportion between the amount paid and the amount if any unpaid on each reduced share shall be the same as it was in the case of the share from which the reduced share is derived. (d) Cancel any shares which as the date of the passing of the resolution have not been taken or agreed to be taken by any person and diminish the amount of its share capital by the amount of the shares so cancelled. The resolution whereby any share is sub-divided may determine that as between the holders of the shares resulting from such sub-division one or more of such shares shall have some preference or special advantage as regards dividend capital voting or otherwise over or as compared with the others or other subject to the provisions of the Act. Subject to the provisions of Sections 66 of the Act the Board may accept from any member the surrender on such terms and conditions as shall be agreed of all or any of his shares. The company may by special resolution reduce in any manner and with and subject to any incident authorised and consent required by law –(a) its share

			capital (b) any capital redemption reserve account or (c)any share premium account.
☐	☑	36	• .
☐	☑	37	• .
☐	☑	38	• .
			Capitalisation of profits
☐	☑	39	• 59. Capitalization of Profits (1) Any General Meeting of the Company may resolve that any amounts standing to the credit of the Free Reserve or Share Premium Account or the Capital Redemption Reserve Account or any moneys investment or other assets forming part of the undivided profits including profits or surplus moneys arising from the realization and (when permitted by the law) from the appreciation in value of any capital assets of the Company standing to the credit of the General Reserve or any other Reserve or Reserve Fund or any other Fund of the Company or in the hands of the Company and available for dividend be capitalized- (a) by the issue and distribution of shares as fully paid-up and to the extent permitted by the Act debentures debenture stock bonds or other obligations of the Company or (b) by crediting share of the Company which may have been issued and are not fully paid-up with the whole or any part of the sum remaining unpaid thereon PROVIDED that any amounts standing to the credit of the Share Premium Account or the Capital Redemption Reserve Account shall be applied only in crediting the payment of capital on shares to be issued to Members as fully paid bonus shares (Further capitalization of reserve created by the revaluation of assets are not to be used for issuance of Bonus Shares as per section 63 of the Act). (2) Such issue and distribution under sub-clause (1) (a) of this Article and payment to the credit of unpaid share capital under sub-clause (1) (b) of this Article shall be made among and in favour of the Members or any class of them or any of them entitled thereto and in accordance with their respective rights and interests and in proportion to the amount of capital paid-up on the shares held by them respectively in respect of which such distribution or payment shall be made on the footing that such Members become entitled thereto as capital. (3) The Directors shall give effect to any such resolution and for the said purpose the Board may settle any difficulty which may arise in regard to distribution as it thinks expedient including in regard to fractional entitlements and shall apply such profits General Reserve other Reserve or any other Fund or account as aforesaid as may be required for the purpose of making payment in full on the shares or other obligations of the Company so distributed under sub clause (1) (a) of this Article or (as the case may be)for the purpose of paying in whole or in part the amount remaining unpaid on the shares which may have been issued and are not fully paid-up under sub-clause (1)(b) above. PROVIDED that no such distribution or payment shall be made unless recommended by the Directors and if so recommended such distribution and payment shall be accepted by such Members as aforesaid in full satisfaction of their interest in the said capitalized fund. (4) For the purpose of giving effect to any such resolution the Directors may settle any

			difficulty which may arise in regard to the distribution or payment as aforesaid as they think expedient and in particular they may issue fractional certificates and may fix the value for distribution of any specific asset and may determine that any cash payment be made to any Members on the footing of the value so fixed and may vest any such cash shares debentures stock bonds or other obligations in trustees upon such trusts for the persons entitled thereto as may seem expedient to the directors and generally may make arrangement for the acceptance allotment and sale of such shares debentures debentures stock bonds or other obligations and fractional certificates or otherwise as they may think fit. (5) When deemed requisite a proper contract shall be filed in accordance with the Act and the Board may appoint any person to sign such contract on behalf of the Members entitled as aforesaid. Subject to the provisions of the Act and these Articles in cases where some of the shares of the Company are fully paid and others are partly paid such capitalization may be effected by the distribution of further shares in respect of the fully paid shares and by crediting the partly paid shares with the whole or part of the unpaid liability thereon but so that as between the holders of the fully paid shares and the partly paid shares the sums so applied in the payment of such further shares and in the extinguishment or diminution of the liability on the partly paid shares shall be applied pro rata in proportion to the amount then already paid or credited as paid on the existing fully paid and partly paid shares respectively.
☐	☑	40	• .
			Buy-back of shares
☐	☑	41	• 60. Buy Back of Shares Notwithstanding anything contained in these articles but subject to the provisions of sections 68 to 70 and any other applicable provision of the Act or any other law for the time being in force the company may purchase its own shares or other specified securities.
			General meetings
☐	☑	42	• 61. Annual General Meeting The Company shall in each year hold a General Meeting as its Annual General Meeting in addition to any other meeting in that year. All General Meetings other than Annual General Meetings shall be called Extraordinary General Meetings. If for any reason beyond the control of the Board the general meeting (including an Annual General meeting) cannot be held on the appointed day the Board shall have power to postpone the General meeting of which a notice should be given to the members. Every member of the Company shall be entitled to attend either in person or by proxy and the Auditor of the Company shall have the right to attend and to be heard at any General Meeting which he attends on any part of the business which concerns him as Auditor.
☐	☑		• 62. Extraordinary General Meeting The Board may whenever it thinks fit call an Extraordinary General Meeting of the Company. The Board shall at the requisition in writing by a Member or Members holding in the aggregate not less than one-tenth of such of the paid-up capital of the company on that date and carries

		43	the right of voting in regard to the matter in respect of which the requisition has been made. 63. Requisition of Members to state object of Meeting Any valid requisition so made by Members must state the object or objects of the meeting proposed to be called and must be signed by the requisitionists and deposited at the registered office of the company. PROVIDED that such requisition may consist of several documents in like form each signed by one or more requisitionists. 64. On receipt of requisition Directors to call meeting and in default requisitionists may do so Upon the receipt of any such requisition the Board shall forthwith call an Extraordinary General Meeting and if they do not proceed within twenty-one days from the date of the requisition being deposited at the Registered Office to cause a meeting to be called on a day not later than forty-five days from the date of deposit of the requisition the requisitionists or such of their number as represent either a majority in value of the paid-up share capital held by all of them or one-tenth of such of the paid-up share capital of the Company as is referred to in Section 100(2) of the Act whichever is less may themselves call the meeting but in either case any meeting so called shall beheld within three months from the date of the deposit of the requisition as aforesaid. 65. Meeting called by requisitionists Any meeting called under the foregoing Articles by the requisitionists shall be called in the same manner as nearly as possible as that in which meetings are to be called by the Board. 66. Twenty-one days notice of meeting to be given A general meeting of a Company may be called by giving not less than clear twenty-one days notice either in writing or through electronic mode in such a manner as may be prescribed Every notice of a meeting shall specify the place date day and the hour of meeting and shall contain statement of the business to be transacted at such meeting. And The notice of every meeting shall be given to every member of the Company Legal Representative of any deceased member or the assignee of an insolvent member auditor or auditors of the Company and every director of the Company and all such persons as are under these Articles entitled to receive notice from the Company Provided that a general meeting may be called after giving shorter notice than that specified in this sub-section if consent in writing or by electronic mode is accorded thereto (i) in the case of an annual general meeting by not less than ninty-five per cent. of the members entitled to vote thereat and (ii) in the case of any other general meeting by members of the company(a) holding if the company has a share capital majority in number of members entitled to vote and who represent not less than ninety-five per cent. of such part of the paid-up share capital of the company as gives a right to vote at the meeting or (b) having if the company has no share capital not less than ninty-five per cent. of the total voting power exercisable at that meeting Provided further that where any member of a company is entitled to vote only on some resolution or resolutions to be moved at a meeting and not on the others those members shall be taken into account for the purposes of this sub-section in respect of the former resolution or resolutions and not in respect of the latter.
			Proceedings at general meetings

☐	☑	44	• 67. Business to be transacted at the General Meeting and nature there of In the case of an Annual General Meeting all business to be transacted there at shall be deemed special other than (i) the consideration of the financial statements and there ports of the Board of Directors and Auditors (ii) the declaration of any dividend (iii) the appointment of Directors in place of those retiring (iv)the appointment of and the fixing of the remuneration of the Auditors and in the case of any other meeting all business shall be deemed to be Special Business and there shall be annexed to the notice of the Meeting an Explanatory statement setting out all material facts concerning each such item of special business including in particular the nature of the concern or interest financial or otherwise if any therein of (i) every Director and the Manager (if any) (ii) every other key managerial personnel and relatives of the persons mentioned in sub clauses (i) and (ii). Where any such item of Special Business relates to or affects any other company the extent of shareholding interest in such other company of every promoter director and the manager if any and of every other key managerial personnel of the Company shall also beset out in the statement if the extent of such shareholding interest is not less than two per cent of the paid-up share capital of that other company and where any item of business consists of the according of approval to any documents by the meeting the time and place where the document can be inspected shall be specified in the statement aforesaid. The annual general meeting shall be called during business hours on any day that is not a National Holiday and it is to be held either at the registered office of the company or at some other place within the city in which the registered office of the company is situate.
☐	☑	45	• 68. Omission to give notice not to invalidate are solution passed The accidental omission to give any such notice as aforesaid to any of the Members or the non-receipt thereof shall not invalidate any resolution passed at any such meeting.
☐	☑	46	• 69. Meeting not to transact business not mentioned in notice No General Meeting Annual or Extraordinary shall be competent to enter upon discuss or transact any business which has not been mentioned in the notice or notices upon which it was convened.
☐	☑	47	• 70. Body Corporate deemed to be personally present A body corporate being a Member shall be deemed to be personally present if it is represented in accordance with Section 113 of the Act.
☐	☑		• 71. Quorum at General Meeting No business shall be transacted at any general meeting unless a quorum of members is present at the time when the meeting proceeds to business. Save as otherwise provided herein the quorum for the general meetings shall be as provided in section 103 of the Companies Act 2013 72. If quorum not present meeting to be dissolved or adjourned If at the expiration of half an hour from the time appointed for holding a general meeting of the Company a quorum is not present the meeting if convened by or upon the requisition of Members shall stand dissolved but in any other case the meeting shall stand adjourned to the same day in the next week or if that day is a public

		48	holiday until the next succeeding day which is not a public holiday at the same time and place or to such other day and at such other time place as the Board may determine and if at such adjourned meeting a quorum is not present at the expiration of half an hour from the time appointed for holding the meeting the Members present shall form the quorum and may transact the business for which the meeting was called. 73. Chairman of General Meeting The Chairman of the Board shall be entitled to take the Chair at every General Meeting whether Annual or Extraordinary. If at any meeting the Chairman is not present within fifteen minutes of the time appointed for holding such meeting or he has informed that he shall be unable or unwilling to take the Chair then any one of directors with mutual consent shall so preside at the meeting. If no Director be present or if all the Directors present decline to take the Chair then the Members present shall elect one of the members to be the Chairman of the Meeting. 74. No Business whilst chair vacant No business shall be discussed at any General Meeting except the election of a Chairman whilst the Chair is vacant. 75. Chairman with consent may adjourn meeting The Chairman with the consent of the Members may adjourn any meeting from time to time and from place to place within the city town or village in which the Registered Office of the Company is situated but no business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting from which the adjournment took place. Notwithstanding the provision as above in the event of disorder at a validly convened meeting the Chairman may adjourn the meeting provided that such an adjournment shall not be a longer period than the Chairman considers necessary to being order at the meeting and Chairman communicates his decision to those present in so far as it is possible.76.Questions at General Meeting how Decided Every question submitted to a meeting shall be decided in the first instance unless a poll is demanded on a show of hands. Before or on the declaration of the result of the voting on any resolution on a show of hands a poll may be ordered to be taken by the Chairman of the meeting on his own motion and shall be ordered to be taken by him on a demand made in that behalf by any member or members present in person or by proxy and holding shares in the Company which confer a power to vote on the resolution not being less than one-tenth of the total voting power in respect of the Resolution or on which an aggregate sum of not less than five lakh rupees has been paid up. The demand for a poll may be withdrawn at any time by the person or persons making the demand. Unless a poll is so demanded a declaration by the Chairman that are solution has on show of hands been carried through unanimously or by a particular majority or lost and an entry to that effect in the Minutes Book of the Company shall be conclusive evidence of the fact without proof of the number or proportion of the votes recorded in favour of or against the resolution. 77. Chairmans Casting Vote In the case of an equality of votes the Chairman shall have a casting vote in addition to the vote or votes to which he may be entitled otherwise. 78. Poll to be taken if demanded If a poll is demanded as aforesaid the same shall be taken at such time (not later than forty-eight hours from the time when the demand was made) and place in the city or town in

			which the Registered office of the Company is for the time being situated as the Chairman shall direct either at once or after an interval or adjournment and the result of the poll shall be deemed to be the resolution of the meeting. 79. In which case poll taken without Adjournment Any poll duly demanded on the election of the Chairman of a meeting or on any question of adjournment shall be taken at the meeting forthwith. 80. Demand for poll not to prevent transaction of other business The demand for a poll except on the questions of the election of the Chairman and of an adjournment shall not prevent the continuance of a meeting for the transaction of any business other than the question on which the poll has been demanded. 81. Minutes of General Meetings(a) The Company shall cause minutes of the proceedings of every General Meeting or every resolution passed by postal ballot to be kept by making within thirty days of the conclusion of every such meeting concerned record thereof kept with Minute Book for that purpose with their pages consecutively numbered. (b) Each page of every such book shall be initialed or signed and the last page of the record of proceedings of each meeting in such book shall be dated and signed by the Chairman of the same meeting within the aforesaid period of thirty days or in the event of the death or inability of that Chairman within that period by a Director duly authorised by the Board for the purpose. (c) In no case the minutes of proceedings of a meeting shall be attached to any such book as aforesaid by pasting or otherwise. (d) The minutes of each meeting shall contain a fair and correct summary of the proceedings thereat. (e) All decisions taken and appointments of officers made at any meeting aforesaid shall be included in the minutes of the meeting. (f) Nothing herein contained shall require or be deemed to require the inclusion in any such minutes of any matter which in the opinion of the Chairman of the meeting (a) is or could reasonably be regarded as defamatory of any person or (b) is irrelevant or immaterial to the proceedings or (c) is detrimental to the interests of the Company. The Chairman of the meeting shall exercise an absolute discretion in regard to the inclusion or non-inclusion of any matter in the minutes on the aforesaid grounds. (g) Any such minutes shall be evidence of the proceedings recorded therein. Where the minutes have been kept in accordance with section then until the contrary is proved the meeting shall be deemed to have been duly called and held all appointments of directors key managerial personnel auditors or company secretary in practice shall be deemed to be valid. No document purporting to be a report of the proceedings of any general meeting of a company shall be circulated or advertised at the expense of the company unless it includes the matters required to be contained in the minutes of the proceedings of such meeting. The company shall observe secretarial standards with respect to general and Board meetings specified by the Institute of Company Secretaries of India constituted under section 3 of the Company Secretaries Act 1980 and approved as such by the Central Government. (h) The book containing the minutes of the proceedings of any general meeting of the Company or of a resolution passed by postal ballot shall be kept at the registered office of the Company and shall be open during business hours to the inspection by any member

			without any charge for such period not being less than two hours in each business day are allowed for inspection.
			Adjournment of meeting
☐	☑	49	• 82. Adjournment of Meeting (i)The Chairperson may with the consent of any meeting at which a quorum is present and shall if so directed by the meeting adjourn the meeting from time to time and from place to place. (ii) No business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting from which the adjournment took place. (iii) When a meeting is adjourned for thirty days or more notice of the adjourned meeting shall be given as in the case of an original meeting. (iv) Save as aforesaid and as provided in section 103 of the Act it shall not be necessary to give any notice of an adjournment or of the business to be transacted at an adjourned meeting.
			Voting rights
☐	☑	50	• 83. Members in arrears not to vote No member shall be entitled to vote either personally or by proxy at any General Meeting or Meeting of a class of shareholders either upon a show of hands or upon a poll in respect of any shares registered in his name on which any calls or other sums presently payable by him have not been paid or in regard to which the Company has exercised any right of lien.
☐	☑	51	• 84. Number of votes to which Member Entitled Subject to the provisions of these Articles and without prejudice to any special privileges or restrictions as to voting for the time being attached to any class of shares for the time being forming part of the capital of the Company every Member shall be entitled to be present and to speak and vote at such meeting by show of hand for which the Member present in person shall have one vote. On a poll taken at a meeting of a company a member entitled to more than one vote or his proxy need not to use all his votes or cast in the same way all the votes he uses.
☐	☑	52	• 85. Votes by a Member entitled to more than one vote On a poll taken at a meeting of the Company a Member entitled to more than one vote by virtue of his share-holding or his proxy or other person entitled to vote for him as the case may be need not if he votes use all his votes or cast in the same way all the votes he uses and he may vote in different manner as he deems fit.
☐	☑	53	• 86. Vote of Member who is a minor If any shareholder be a minor the vote in respect of his share or shares shall be by his guardian or any one of his guardians if more than one to be selected in case of dispute by the Chairman of the meeting.
☐	☑	54	• 87. Votes of Joint Members If there be joint registered holders of any shares the vote of the senior who tenders a vote whether in person or by proxy shall be accepted to the exclusion of the votes of the other joint holders. For this purpose seniority shall be determined by the order in which the namesst and in the register of members.
☐	☑		• 88. Voting in person or by proxy or Representative Subject to the provisions of these Articles votes may be

		55	given either personally or by proxy. A body corporate being a Member may vote either by proxy or by a representative duly authorised in accordance with Section 113 of the Act and such representative shall be entitled to exercise the same rights and powers(including the right to vote by proxy) and by postal ballot on behalf of the body corporate which he represents as that body could exercise if it were an individual Member of the Company.
☐	☑	56	• 89. Votes in respect of shares of Deceased Any person entitled under the Transmission Clause to transfer any shares may vote at any General Meeting in respect thereof in the same manner as if he were the registered holder of such shares. PROVIDED that forty-eight hours at least before the time of holding the meeting or adjourned meeting as the case maybe at which he proposes to vote he shall satisfy the Chairman of his right to transfer such shares and give such indemnity (if any) as the Chairman may require or the Chairman shall have previously admitted his right to vote at such meeting in respect thereof. 90. Time for objection to vote No objection shall be made to the validity of any vote except at the meeting or poll at which such vote was tendered and every vote whether given personally or by proxy not disallowed at such meeting or poll shall be deemed valid for purposes of such meeting or poll whatsoever. 91. Chairman of the meeting to be the judge of the validity of any Vote The Chairman of any meeting shall be the sole judge of the validity of every vote tendered at such meeting. The Chairman present at the taking of a poll shall be the sole judge of the validity of every vote tendered at such poll.
			Proxy
☐	☑	57	• 92. Appointment of proxy A person can act as proxy on behalf of members not exceeding fifty and holding in the aggregate not more than ten percent of the total share capital of the company carrying voting rights Provided that a member holding more than ten percent of the total share capital of the Company carrying voting rights may appoint a single person as proxy and such person shall not act as proxy for any other person or shareholder. Every proxy shall be appointed in writing under the hand of the Member or if such Member is a body corporate under the common seal of such corporation or be signed by an appointer or his attorney duly authorised in writing. The proxy so appointed shall not have any right to speak at the meetings.
☐	☑	58	• 93. Deposit of instrument of Proxy etc. The instrument appointing a proxy and the power of attorney or other authority (if any) under which it is signed or a notarized copy of that power or authority shall be deposited at the Registered Office of the Company not later than forty-eight hours before the time for holding the meeting at which the person named in the instrument proposes to vote and in default the instrument of proxy shall not be treated as valid. No instrument appointing a proxy shall be valid after the expiration of twelve months from the date of its execution.
☐	☑		• 94. Form of proxy An instrument appointing a proxy shall be in the form No. MGT-11 as prescribed in the rules

		59	made under section 105 of the Companies Act 2013 95. Proxy either for specified meeting or for a period An instrument of proxy may appoint a proxy either for the purpose of a particular meeting specified in the instrument and any adjournment thereof or it may appoint for the purpose of every meeting of the Company or of every meeting to be held before a date specified in the instrument and every adjournment of any such meeting. 96. Validity of votes given by proxy not withstanding death of Member A vote given in accordance with the terms of an instrument of proxy shall be valid notwithstanding the previous death or insanity of the principal or there vocation of the proxy or of the authority under which the proxy was executed or the transfer of the shares in respect of which the proxy is given. Provided that no intimation in writing of such death insanity revocation or transfer shall have been received by the company at its office before the commencement of the meeting or adjourned meeting at which the proxy is used.
			Board of Directors
☐	☑	60	• 97. Management of Affairs The day to day management of the business and affairs of the Company shall be vested with Project-in-charge under the supervision direction control of the Board. The Board may exercise all such powers of the Company and do all such acts deeds and things as are not prohibited by the Act or any other statute or by the Memorandum of Association of the Company and without prejudice to the foregoing shall be responsible for all policy matters and the supervision direction and control of the conduct of the business affairs operations of the Company.
☐	☑	61	• 98. First Directors Shri Neeraj Singh Shri Sanjay Kumar Nayak and Shri Naveen Kumar shall be the First Directorsof the Company.
☐	☑		• 99. Number and appointment of Directors The Board of Directors of the Company shall consist of not less than 3 but not more than 15 Directors. A Director shall not be required to hold any qualification shares in the Company. Notwithstanding anything to the contrary contained in these Articles so long as any moneys remain owing by the Company to a Financial Institution or any other person by the Company or the Company has entered into any agreement or undertaking or arrangement (hereinafter refer as agreement) with Bodies (like State Electricity Board Nigam) or the Board of Directors have decided to seek nomination on the Board from the beneficiary state or any Financial Institution or PFC Consulting Limited or person holds Debentures in the Company by direct subscription or private placement the Company may agree to grant to such Financial Institution PFC Consulting Limited person or other Bodies as a condition of such loan or subscription to Debenture or any other agreement or to a Debenture Trustee the right to appoint from time to time any person or persons as Director or Directors of the Company (which director or directors is are hereinafter referred to as Nominee Directors) retiring or non-retiring subject to and on such terms and conditions as the Company may agree with such Financial Institutions PFC Consulting Limited Person other Bodies and or Debenture Trustee. The

		62	Company shall have a right to remove from office Nominee Director(s) at the option of the Company in consultation with Financial Institutions PFC Consulting Limited Bodies persons or Debenture Trustee. Such Nominee Director(s) shall not be required to hold any Share qualification in the Company. Also at the option of the Company such Nominee Director(s) shall not be liable to retirement by rotation of the Directors. Subject as aforesaid the Nominee Director(s) shall be entitled to the same rights and privileges and be subject to the same obligations as any other Director of the Company. The Nominee Director(s) so appointed shall hold the said office only so long as moneys remain owing by the Company to the Financial Institution or so long as the Debenture Trustee hold debenture in the Company or operation of agreement and the Nominee Directors so appointed in the exercise of the said person shall ipso facto vacate such office immediately the money owing by the Company to the Financial Institution or on the Debenture Trustee ceasing to hold Debentures Shares on the satisfaction of liability of the Company arising out of any Guarantee furnished by the Financial Institutions or satisfactory completion of term of agreement with Bodies. The Nominee Director(s) appointed under this article shall be entitled to receive all notice of and attend all General meeting Board Meeting and of the meetings of the Committee of which the Nominee Director(s) is or are member(s) as also the minutes of meetings. The financial institutions Debenture Trustee persons bodies shall also be entitled to receive all such notice and minutes. The Company shall pay to the Nominee Director(s) sitting fees and expenses which other Director of the Company are entitled but if any other fees commission remuneration in any form is payable to the Director of the Company the fees commission money and remuneration in relation to such Nominee Director(s) shall accrued to Debenture Trustee and same shall accordingly be paid by the Company directly to the debenture trustee. Any expenses that may incurred by the financial institution or such Nominee Director(s) in connection with their appointment or Directorship shall also be paid or reimbursed by the Company to the financial Institution or as the case may be to such Nominee Director(s). Provided that if any such Nominee Director(s) is or are an officer of the Financial Institution the sitting fees in relation to such Nominee Director(s) shall also accrue to the Financial Institute and the same shall accordingly be paid by the Company directly to that Financial Institution. Provided further that if such Nominee Director(s) is or are an official of any of the Reserve Bank of India the sitting fees in relation to such Nominee Director(s)shall also accrue to Financial Institution to whom he represents as Nominee Director from Reserve Bank of India and the same shall accordingly be paid by the Company directly to that Financial Institution. Provided also that in the event of the Nominee Director(s) being appointed as Whole Time Director(s) such Nominee Director(s) shall exercise such powers and duties as may be approved by the Lenders or Bodies in consultation with Board and have such rights as are usually exercised or available to a Whole Time Director in management of the Borrower or Bodies and such Nominee Director(s) shall be entitled to receive such remuneration fees commission and moneys as may

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			be approved by the Lenders or Bodies in consultation with Board.
☐	☑	63	• 100. Company may increase the number of Directors Subject to Section 149 of the Act the Company may subject to special resolution in General Meeting increase the maximum number of Directors. Further the Company may subject to the provisions of Section 169 of the Act bypassing the ordinary resolution in the General Meeting of the members may remove any Director before the expiration of his period of office and appoint another person in the place of director so removed.
☐	☑	64	• 101. Appointment of Alternate Directors In accordance with Section 161 and other applicable provisions (if any) of the Act the Board shall have power at any time and from time to time to appoint a person not being a person holding any alternate directorship for any other Director in the Company to act as an alternate director for a director(hereinafter called the original Director) during his absence for a period of not less than three months from India.
☐	☑	65	• 102. Directors power to fill up casual Vacancies Casual vacancies among Directors may be filled by the Board of Directors at their meeting and any person so appointed shall hold the office as per the provision of section 161.
☐	☑		• 103. Appointment of Additional Director Subject to the provisions of Section 161 and other applicable provisions (if any) of the Act the Board shall have power at any time and from time to time to appoint a person as an Additional Director but so that the total number of Directors shall not at any time exceed the maximum number fixed by these Articles. The Additional Director so appointed shall retire from Office at next following Annual General Meeting but shall be eligible for election by the company at that meeting as a Director. 104. Directors may act notwithstanding any vacancy The continuing Directors may act notwithstanding any vacancy in their body but if and so long as their number is reduced below the minimum number fixed by Article 100 thereof the continuing Directors may act for the purpose of increasing the number of Directors to that number or of summoning a General Meeting for that purpose. 105. Remuneration of Directors Subject to the provisions of the Act the Chairman or Managing Director or any other functional Directors who is are in the whole-time employment of the Company may be paid remuneration either by way of a monthly payment or at a specified percentage of the net profit of the Company or partly by one way and partly by the other keeping in view the limiting provisions governing the Managerial remuneration under the provisions of the Act. Subject to the provisions of the Act a Director who is neither in the whole-time employment nor a Chairman cum Managing Director of the Company may be paid remuneration either-(a) by way of monthly quarterly or annual payment with the approval of the Central Government or (b) by way of commission if the Company by a special resolution authorizes such payment and The sitting fee payable to a Director (excluding Whole-time Director) for attending a meeting of the Board or Committee thereof shall be such sum as may be fixed by the Board provided that the same shall not exceed Rs. 100000- or such other

		66	sum as prescribed in the Act as amended from time to time. Travelling expenses incurred by Director going out on Companys Business. The Board may allow and pay to any Director who is not a bona-fide resident of the place where the Registered Office of the Company or where the meetings of the Board are actually held and who has to come to such place for the purpose of attending any meeting such sum as the Board may consider fair compensation fortravelling boarding lodging and other actual incidental expenses in addition to his fee for attending such meeting as specified above. If any Director be called upon to go or reside out of the bona fide place of his residence on the Companys business he shall be entitled to be paid and reimbursed any travelling or other actual expenses incurred by him in connection with the business of the Company. 106. When office of Directors to become Vacant Subject to Section 167 of the Act the office of a Director shall become vacant if-(a) he incurs any of the disqualifications specified in section 164 under the act(b) he absents himself from all the meetings of the Board of Directors held during a period of twelve months with or without seeking leave of absence of the Board (c) he acts in contravention of the provisions of entering into contracts or arrangements in which he is directly or indirectly interested (d) he fails to disclose his interest in any contract or arrangement in which he is directly or indirectly interested (e) he becomes disqualified by an order of a court or the Tribunal (f) he is convicted by a court of any offence whether involving moral turpitude or otherwise and sentenced in respect thereof to imprisonment for not less than six months Provided that the office shall be vacated by the director even if he has filed an appeal against the order of such court (g) he is removed in pursuance of the provisions of this Act (h) he having been appointed a director by virtue of his holding any office or other employment in the holding subsidiary or associate company ceases to hold such office or other employment in that company. 107. Directors may contract with Company Except with the consent of the Board of Directors given by a resolution at a meeting of the Board and subject to such conditions the company shall not enter into any contract or arrangement with a related party with respect to(a) sale purchase or supply of any goods or materials (b) selling or otherwise disposing of or buying property of any kind (c) leasing of property of any kind (d) availing or rendering of any services (e) appointment of any agent for purchase or sale of goods materials services or property (f) such related partys appointment to any office or place of profit in the company its subsidiary company or associate company (g) underwriting the subscription of any securities or derivatives thereof of the company. Every contract or arrangement entered as related party transaction shall be referred in the Boards report to the shareholders along with the justification for entering into such contract or arrangement. 108. Disclosure of interest by Directors1) Every Director of the Company who is in any way whether directly or indirectly concerned or interested in a contract or arrangement or proposed by Directors interested in a contract or arrangement or proposed contract or arrangement entered into or to be entered into by or on behalf of the Company shall disclose the nature of his concern or interest at every

			financial year or whenever there is change in the disclosure of interest. (2) Nothing in sub-clause (1) of this Article shall apply to any contract or arrangement entered into or to be entered into between the Company and any other company where any of the Directors of the Company or two or more of the Directors together holds or hold not more than two per cent of the paid-up share capital in the other company. 109. Interested Directors not to participate or vote in Boards proceedings An interested director who is in any way whether by himself or through any of his relatives or firm body corporate or other association of individuals in which he or any of his relatives is a partner director or a member interested in a contract or arrangement or proposed contract or arrangement entered into or to be entered into by or on behalf of a company shall take any part in the discussion of or vote on any contract or arrangement entered into or to be entered into by or on behalf of the Company if he is in any way whether directly or indirectly concerned or interested in such contract or arrangement nor shall his presence count for the purpose of forming a quorum at the time of any such discussion or vote and if he does vote his vote shall be void. A contract or arrangement entered into by the company without disclosure or with participation by a director who is concerned or interested in any way directly or indirectly in the contract or arrangement shall be voidable at the option of the company.110.Register of Contracts in which Directors are interested The company shall keep registers in accordance with Section 189(1) giving separately the particulars of all contracts or arrangements to which to matter of disclosure of interest by directors and related party transaction applies in such manner and containing such particulars as may be prescribed and after entering the particulars such registers shall be placed before the next meeting of the Board and signed by all the directors present at the meeting and shall with in thirty days of appointment make such disclosure as are necessary for the purpose of same. The Register shall be kept at the Registered office of the Company and shall be open to inspection at such office shall be open for inspection at such office during business hours and extracts may be taken there from and copies thereof as may be required by any member of the company shall be furnished by the company to such extent in such manner and on payment of same fee as in the case of the Register of Members of the Company. 111. Director may be Director of companies promoted by the Company A Director may become a Director of any other company promoted by the Company or in which it may be interested as a vendor shareholder or otherwise and no such Director shall be accountable for any benefits received as Director or shareholder of such a company except in so far as Section 188 of the Act may be applicable. 112. Register of Directors and key managerial personnel and their Shareholding The Company shall keep at its registered office a Register containing such particulars of its Directors and key managerial personnel Manager as may be prescribed under Section 170 of the Act and shall comply with the provisions of the said Section in all respects. The register shall include the details of securities held by each of them in the company or its holding subsidiary subsidiary of companys holding company or associate companies.

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☐	☑	67	• 113. Meetings of Directors The Directors may meet together as a Board for the dispatch of business from time to time so that at least four such meetings shall be held in every year in such a manner that not more than one hundred and twenty days shall intervene between two consecutive meetings of the Board. The Directors may adjourn and regulate their meetings as they think fit.
☐	☑	68	• 114. Board may appoint Chairman All meetings of the Directors shall be presided over by the Chairman if present but if at any meeting of the Directors the Chairman is not present at the time appointed for holding the same then in that case the Directors shall choose one of the Directors present to preside over the meeting.
☐	☑	69	• 115. Certain persons not to be appointed Chairman Managing Directors Functional Director The Company shall not appoint a person as its Chairman Managing Director or Whole-time Director who-(a) is an undischarged insolvent or had at any time been adjudged an insolvent (b) is or has at any time been convicted by a Court of an offence involving moral turpitude.
☐	☑	70	• 116. Notice of Directors Meeting A meeting of the Board shall be called by giving not less than seven days notice in writing to every director at his address registered with the company and such notice shall be sent by hand delivery or by post or by electronic means. Board may be called at shorter notice to transact urgent business where at least one independent director if any shall be present. Every notice convening a meeting of the Board of Directors shall set out the agenda of the business to be transacted thereat insufficient detail provided however that the meeting may consider any other business with the permission of the chair.
☐	☑	71	• 117. When meeting to be convened The Company Secretary or any director of the Company may as and when directed by the Chairman to do so convene a meeting of the Board by giving a notice inwriting to every Director.
☐	☑	72	• 118. Quorum at Board Meeting No business shall be transacted at any Board meeting unless a quorum of Board of Director is present at the time when the meeting proceeds to business. Save as otherwise provided herein the quorum for the Board meetings shall be as provided in section 174.
☐	☑	73	• 119. Questions at Board meetings how to be decided All questions arising at a Meeting of the Board or any committee thereof shall be decided by majority of votes of directors present and in case of equality of votes the Chairperson shall have a second and casting vote.
☐	☑	74	• 120. Committee of Board Subject to the restrictions contained in Section 179 180 and other applicable provisions of the Act and preceding Articles the Board may delegate any of its powers to Committees of the Board consisting of such member or members of its body as it may think fit. PROVIDED that the Board may from time to time revoke modify and discharge any such Committee of the Board either wholly or in part. Every Committee of the Board so formed shall in the exercise

			of the powers so delegated conform to any Policy regulations that may from time to time be laid down by the Board. All acts done by any such Committee of the Board in conformity with such regulations and in fulfillment of the purposes of their appointment shall have the like force and effect as if done by the Board.
☐	☑	75	• 121. Meeting of Committee how to be Governed The meetings and proceedings of any such Committee of the Board consisting of two or more members shall be governed by the provisions of the act and guidelines laid down for regulating the meetings and proceedings of the Directors so far as the same are applicable thereto and are not superseded by any regulations made by Directors under the last preceding Article.
☐	☑		• 122. Resolution by circulation No resolution on matters shall be deemed to have been duly passed by the Board or by a Committee thereof by circulation unless the resolution has been circulated indraft together with the necessary papers if any to all the Directors or members of the Committee as the case may be at their addresses registered with the company in India by hand delivery or by post or by courier or through such electronic means as may be prescribed and has been approved by a majority of the directors or members who are entitled to vote on the resolution. Resolution passed in such circulation shall be made part of the minutes of such meeting. Provided that where not less than one-third of the total number of directors of the company for the time being require that any resolution under circulation must be decided at a meeting the chairperson shall put the resolution to be decided at a meeting of the Board. 123. Defects in appointment of Directors not to invalidate actions taken All acts done by any meeting of the Board or by a Committee of the Board or by any person acting as a Director shall notwithstanding that it was subsequently noticed that there was some defect in the appointment of such Director or persons acting as aforesaid or that they or any of them were disqualified or had vacated office or that the appointment of any of them had been terminated by virtue of any provisions contained in the Act or these Articles be as valid as if every such person had been duly appointed and was qualified to be a Director and had not vacated his office or his appointment had not been terminated. PROVIDED that nothing in this Article shall be deemed to give validity to acts done by a Director after his appointment had been noticed by the Company to be invalid or to have terminated. 124. Minutes of proceedings of meetings of the Board (a) The Company shall cause minutes of all proceedings of every meeting of the Board and committee thereof to be kept by making within thirty days of the conclusion of every such meeting record thereof in Minute Book kept for that purpose with their pages consecutively numbered. (b) Each page of every such book shall be initialed or signed and the last page of the record of proceedings of each meeting in such book shall be dated and signed by the Chairman of the said meeting or the Chairman of the next succeeding meeting. The minute books of the Board and committee meetings shall be preserved permanently and kept in the custody of the company secretary of the company or any director duly authorized by the Board for the purpose and shall be kept in the registered office or such place as

			Board may decide. The minutes shall also contain- (i) the names of the Directors present at the meeting And (ii) in the case of each resolution passed at the meeting the names of the Directors if any dissenting from or not concurring with the resolution. Nothing deemed to require the inclusion in any such minutes of any matter which in the opinion of the Chairman of the meeting (i) is or could reasonably be regarded as defamatory of any person. (ii) is irrelevant or immaterial to the proceedings or (iii) is detrimental to the interests of the Company. The Chairman shall exercise an absolute discretion in regard to the inclusion or non-inclusion of any matter in the minutes on the grounds specified in this sub-clause. (c) Minutes of meetings kept in accordance with the aforesaid provisions shall be evidence of the proceedings recorded therein. 125. Powers of Board The Board may exercise all such powers of the Company and do all such acts and things as it is entitled to do under section 179 of the Act and rules made thereunder or by the Memorandum or Articles of the Company but shall not decide matters required to be exercised or done by the Company in General Meeting Subject to these Articles no regulation made by the Company in General Meeting shall invalidate any prior act of the Board which would have been valid if that regulation had not been so made. Certain powers of the Board Without prejudice to the general powers conferred by the Act and preceding Article and so as not in any way to limit or restrict those powers and without prejudice to the other powers conferred by these Articles and by General Body it is hereby declared that the Directors shall have the following powers that is to say power-(1) to pay and charge to the capital account of the Company any commission or interest lawfully payable there out under the provisions of Sections 40 of the Act (2) Subject to Sections 179 and 180 of the Act to purchase or otherwise acquire for the Company any property rights or privileges which the Company is authorised to acquire at or for such price or consideration and generally on such terms and conditions as they may think fit and in any such purchase or other acquisition to accept such title as the Directors may believe or may be advised to be reasonably satisfactory (3) At their discretion and subject to the provisions of the Act to pay for any property rights or privileges acquired by or services rendered to the Company either wholly or partially in cash or in shares bonds debentures mortgages or other securities of the Company and any such shares may be issued either as fully paid-up or with such amount credited as paid-up thereon as may be agreed upon and any such bonds debentures mortgages or other securities may be either specially charged upon all or any part of the property of the Company and its uncalled capital or not so charged (4) To secure the fulfillment of any contract or engagement entered into by the Company in the normal course of business by mortgage or charge any of the property of the Company and its uncalled capital for the time being or in such manner as they may think fit (5) To accept from any Member as far as may be permissible by law a surrender of his shares or any part thereof on such terms and conditions as shall be agreed upon (6) To appoint any person to accept and hold in trust for the Company any property belonging to the Company in which it is interested or for any other purposes and to

		76	execute and do all such deeds and things as may be required in relation to any such trust and to provide for the remuneration of such trust or trustees (7) To institute conduct defend compound or abandon any legal proceedings by or against the Company or its officers or otherwise concerning the affairs of the Company and also to compound and allow time for payment or satisfaction of any debts due and of any claim or demand by or against the Company and to refer any differences to arbitration and observe and execute any awards made thereon (8) To act on behalf of the Company in all matters relating to bankruptcy and insolvency (9) To make and give receipts releases and other discharges for moneys payable to the Company and for the claims and demands of the Company (10) Subject to applicable provisions of the Act to invest and deal with any moneys of the Company not immediately required for the purposes thereof upon such security(not being shares of this Company) or without security and in such manner as they may think fit and from time to time to vary or realise such investments. Save as provided in Section 187 of the Act all investments shall be made and held in the Companys own name (11) To execute in the name and on behalf of the Company in favour of any Director or other person who may incur or going to incur any personal liability whether as principal or surety for the benefit of the Company such mortgages of the Companys property (present and future)as they think fit and any such mortgage may contain a power of sale and such other powers provisions covenants as shall be agreed upon (12) To open account with any bank or banks and to determine from time to time who shall been titled to sign on the Companys behalf bills notes receipts acceptances endorsements cheques dividend warrants releases contracts and documents and to issue the necessary authority for such purpose (13) To distribute by way of bonus or commission amongst the staff of the Company on the profits of any particular business or transaction and to charge such bonus or commission as part of the working expense of the Company (14) To provide for the welfare of employees or ex-employees of the Company and their families or connections of such persons by building or contributing to the building of houses dwellings or chawls or by grants of money pension gratuities allowances bonus or other payments or by creating and from time to time subscribing or contributing to provident and other funds associations institutions or trusts and by providing or subscribing or contributing towards places of instrument and recreation hospitals and dispensaries medical and other attendance and other assistance as the Board shall think fit and to subscribe or contribute or otherwise to assist or to guarantee money to charitable benevolent religious scientific national or other institutions or objects which shall have any moral or other claim to support or aid by the Company either by reason of locality of operation or of public and general utility or otherwise (15) Before recommending any dividend to set aside out of the profits of the Company such sums as they may think proper for depreciation or to a Depreciation Fund or to an Insurance Fund or as a Reserve Fund or Sinking Fund or any Special Fund to meet contingencies or to repay debentures or debenture stock or for special dividends or for equalizing dividends or for repairing improving

			extending and maintaining any of the property of the Company and for such other purposes (including the purposes referred to in the preceding clause) as the Board may in their absolute discretion think conducive to the interest of the Company and subject to Section 179 of the Act to invest the several sums so set aside or so much thereof as required to be invested upon such investments(other than shares of the Company) as they may think fit and from time to time to deal with and vary such investments and dispose of and apply and expend all or any part thereof for the benefit of the Company in such manner and for such purposes as the Board in their absolute discretion think conducive to the interest of the Company notwithstanding that the matters to which the Board apply or upon which they expend the same or any part thereof may be matters to or upon which the capital moneys of the Company might rightly be applied or expended and to divide the Reserve Fund or division or a reserve Fund to another Reserve Fund or division of a Reserve Fund and with full power to employ the assets constituting all or any of the above funds including the Depreciation Fund in the business of the Company or in the purchase or repayment of Debentures or debenture stock and without being bound to keep the same separate from the other assets and without being bound to pay interest on the same with power however to the Board at their discretion to pay or allow to the credit of such funds interest at such rate as the Board may think proper (16) To appoint and at their discretion remove or suspend such officers such as Executive Director general managers managers secretaries assistants supervisors clerks agents and servants etc. for permanent temporary or special services as they may from time to time think fit and to determine their powers and duties and fix their salaries or emoluments or remunerations and to require security in such instances and to such amounts as they may think fit. And also from time to time to provide for the management and transaction of the affairs of the Company in any specified locality in India or abroad in such manner as they think fit and the provisions contained in the following sub-clauses shall be without prejudice to the general powers conferred by this sub clause (17) From time to time and at any time to establish any number of offices and establishment for properly managing the affairs of the Company in any specified locality in India or elsewhere and to appoint staff for such offices and to fix their remuneration (18)Subject to the provisions of the Act from time to time and at any time to delegate to any such local Board or any member or members thereof or any managers or agents so appointed or to any other person(s) any of the powers authorities and discretions for the time being vested in the Board and to authorise the members for the time being of any such local Board or any of them to fill up any vacancies therein and to act notwithstanding vacancies and any such appointment or delegation under the preceding and this sub-clause may be made on such terms and subject to such conditions as the Board may think fit and the Board may at any time remove any person so appointed and may annul or vary any such delegation (19) At any time and from time to time by Power of Attorney under the Seal of the Company to appoint any person or persons to be the Attorney or Attorneys of the Company for such purposes and with

			such powers authorities and discretions (not exceeding those vested in or exercisable by the Board under these presents and excluding the power to make calls and excluding also those which are to be exercised by the Board in its Meetings) and for such period and subject to such conditions as the Board may from time to time think fit and any such appointment may (if the Board thinks fit) be made in favour of the members or any of the members of any local Board established as aforesaid or in favour of any company or the shareholders directors nominees or managers or any company or firm or otherwise in favour of any persons whether appointed by name or designation by the Board and any such Power of Attorney may contain such powers for the protection or convenience of such Attorney as the Board may think fit and Board may specifically bestow powers enabling any such delegate or attorneys to sub-delegate all or any of the powers authorities and discretions for the time being vested in them (20) Subject to Sections 188 of the Act for or in relation to any of the matters aforesaid or otherwise for the purposes of the Company to enter into such negotiations and contracts and rescind and vary such contracts and execute and do all such acts deeds and things in the name and on behalf of the Company as they may consider expedient (21) From time to time to make vary and repeal bye-laws for the regulations of the business of the Company regulate employment of its officers and servants by making service Rules and Regulations (22)Maintain proper records at places as per provisions of the Act and where the Company has a branch office whether in or outside India the Company shall be deemed to have complied with this Article if proper Books of Account relating to the transactions effected at the branch office are kept at the branch office and proper summarized returns made up-to-date at intervals of not more than three months are sent by the branch office to the Company at its Office or other place in India at which the Companys Books of Accounts are kept as aforesaid (23) Ensure proper maintenance of the Books of Account which shall give a true and fair view of the state of the affairs of the Company or branch office as the case may be and explain its transactions. The Books of Account and other books and papers shall be open to inspection by any Director during business hours.
			Chief Executive Officer, Manager, Company Secretary or Chief Financial Officer
☐	☑	77	• 126. CEO MANAGER CS AND CFO Subject to the provisions of the Act – (i) A chief executive officer manager company secretary or chief financial officer may be appointed by the Board for such term at such remuneration and upon such conditions as it may thinks fit and any chief executive officer manager company secretary or chief financial officer so appointed may be removed by means of a resolution of the Board (ii) A director may be appointed as chief executive officer manager company secretary or chief financial officer. Asper provisions of the Act or these regulations requiring or authorising a thing to be done by or to a director and chief executive officer manager company secretary or chief financial officer shall not be satisfied by its being done by or to the same person acting both as director

			and as or in place of chief executive officer manager company secretary or chief financial officer.
☐	☑	78	• .
			The Seal
☐	☑	79	• 127. The Seal its custody and use The Board shall provide a Common Seal for the purpose of the Company and shall have power from time to time to destroy the same and substitute a new Seal in lieu thereof and the Board shall provide for the safe custody of the Seal for the time being and the seal shall never be used except on the authority of the Board or by Committee of the Board as authorised. 128. Deeds how executed Every deed or other instrument to which the Seal of the Company is required to be affixed shall unless the same is executed by a duly constituted attorney issued under the seal be signed by two Directors or one Director and Secretary or some other person authorised by the Board for the purpose PROVIDED that in respect of the Share Certificate the Seal shall be affixed in accordance with Article as mentioned above.
			Dividends and Reserve
☐	☑	80	• 129. Division of profits and dividends in proportion to amount paid- up (a) The profits of the Company subject to any special rights relating thereto created or authorised to be created by these Articles and subject to the provisions of these Articles shall be divisible among the Members in proportion to the amount of capital paid-up or credited as paid-up on the shares held by them. (b)All dividends shall be apportioned and paid proportionately to the amounts paid or credited as paid on the shares held during any portion or portions of the period in respect of which the dividend is paid but if any share is issued on terms providing that it shall rank for dividend from a particular date such share shall rank for dividend accordingly.
☐	☑	81	• 130. The Company in General Meeting may declare a dividend Company in General Meeting may declare dividends to be paid to Members according to their respective rights but no dividends shall exceed the amount recommended by the Board but the Company in General Meeting may declare a smaller dividend.
☐	☑	82	• 131. Dividends only to be paid out of Profits (a) No dividend shall be declared or paid by the Company for any financial year except out of its profits for that year arrived at in the manner set out in Section 123 of the Act. (b) Where owing to inadequacy or absence of profits in any financial year any Company proposes to declare dividend out of the accumulated profits earned by it in previous years and transferred by the company to reserves such declaration of dividend shall not be made except in accordance with such rules as may be made in that behalf. (c) No dividend shall be declared or paid by a company from its reserves other than free reserves.
☐	☑	83	• 132. Interim Dividend Subject to the provisions of Section 123 the Board may from time to time pay the Members such interim dividend as appear to it to be justified by the profits of the Company.

☐	☑	84	• 133. Capital paid - up in advance to carry Interest Where capital is paid in advance of calls such capital may carry interest but shall not in respect thereof confer a right to dividend or participate in profits.
☐	☑	85	• 134. Retention of dividends until completion of transfer The Board may retain the dividends payable on shares in terms of Section 126 in respect of which any person is entitled to become a Member or on completion any person under those Articles is entitled to transfer or until such person shall become a Member in respect of such shares or shall duly transfer the same.
☐	☑	86	• 135. Transfer of shares must be Registered A transfer of shares shall not pass the right to any dividend declared thereon before the registration of transfer. Provided that where any instrument of transfer of shares has been delivered to the Company for registration and the transfer of such shares has not been registered by the Company it shall notwithstanding anything contained in any other provision of this Act. (a) transfer the dividend in relation to such shares to the Unpaid Dividend Account referred to in Section 124 of the Act unless the Company is authorised by the registered holder of such shares in writing to pay such dividend to the transferee specified in such instrument of transfer and (b) keep in abeyance in relation to such shares any offer of rights shares under clause(a) of sub-section (1) of section 62 of the Act and any issue of fully paid-up bonus shares in pursuance of first proviso to sub-section (5) of section 123 of the Act.
☐	☑	87	• 136. No Member to receive dividend whilst indebted to the Company Companys right of reimbursement Thereon No Member shall be entitled to receive payment as interest or dividend in respect of his shares whilst any money may be due or owing from him to the Company in respect of such share or shares or otherwise howsoever either alone or jointly with any person or persons and the Board may deduct from the interest or dividend payable to any Member all sums of money so due from him to the Company.
☐	☑	88	• 137. Dividends how remitted (1) Unless otherwise directed any dividend payable in cash may be paid by cheque or warrant or in any electronic mode or by a pay slip or receipt or in any other manner having the force of a cheque or warrant sent through the post to the registered address of the Member or person entitled or in case of joint holders to that one of them first named in the Register in respect of the joint holdings. Every such cheque or warrant shall be made payable to the order of the person to whom it is sent the Company shall not be liable or responsible for any cheque or warrant or pay slip or receipt lost in transmission or for any dividend lost to the Member or person entitled thereto by the forged endorsement of any cheque or warrant or the forged signature of any pay slip or receipt or the fraudulent recovery of the dividend by any other means. (2) Notwithstanding anything contained in these Articles any dividend declared maybe paid by Electronic Clearing System through any Sponsor Bank after getting registration with the Reserve Bank of India for using this facility and collecting from the members necessary bank mandate in the prescribed format.138.Dividends and call together Any General Meeting declaring a dividend may

			on the recommendation of the Board make a call on the Members of such amount as the meeting may fix but so that the call on each Member shall not exceed the dividend payable to him and so that the call be made payable at the same time as the dividend and the dividend may if so arranged between the Company and the Member be set off against the calls. 139. Unclaimed dividend No unclaimed dividend shall be forfeited and all unclaimed dividends shall be dealt with in accordance with the provisions of Section 124 and other applicable provisions of the Act. 140. No interest against Dividend No dividend shall bear interest against the company.
			Accounts
☐	☑	89	• 141. Directors to keep true accounts (a) Every company shall prepare and keep at its registered office including its branch office or offices or at such other place in India as the Board thinks fit Books of Accounts and other relevant books and papers and financial statement for every financial year which give a true and fair view of the state of the affairs of the company in accordance with Section 128 of the Act with respect to-(i) all sums of money received and expended by the Company and the matters in respect of which the receipts and expenditure take place (ii) all sales and purchases of goods by the Company (iii) the assets and liabilities of the Company. (iv) state of affairs of the company. (b) Where the Board decides to keep all or any of the Books of Account at any place other than the Office of the Company the Company shall within seven days of the decision file with the Registrar a Notice in writing giving the full address of that other place in accordance with Section 128 of the Act. (c) The company may keep such books of account or other relevant papers in electronic mode in such manner as may be prescribed. (d) The Company shall preserve in good order the Books of Account relating to a period of not less than eight financial years immediately preceding a financial year. The books of account and other relevant books and papers maintained in electronic mode shall remain accessible in India so as to be usable for subsequent reference together with the vouchers relevant to any entry in such Books of Account. 142. Inspection of accounts or record by members No Member (not being a director) shall have any right of inspecting any account or books or documents of the Company except as conferred by Section 94 of the Act or authorised by the Board or by the company in general meeting. The Board may determine whether and to what extent and at what time and place and under what conditions or regulations the accounts and books of the Company or any of them may be open to inspection of the Members. Notwithstanding anything to the contrary contained hereinabove the authorised representative of Promoters shall have a right to inspect the accounts books plant facility documents records premises equipment and machinery and all other property of the Company at convenient time(s) after giving advance notice to the Company. 143. Statement of Accounts to be furnished to General Meeting The Directors shall from time to time in accordance with Sections 129 and 134 and other applicable provisions of the Act cause to be prepared and to be laid before the Company in General Meeting such Balance Sheets Profit and Loss Accounts and Reports as are required by these Sections. 144.

			Copies shall be sent to each Member Without prejudice to the provisions of Section 101 and subject to the provisions of Section 136 of the Act a copy of the financial statements including consolidated financial statements auditors report and every other document required by law to be annexed or attached to the Balance Sheet shall at least twenty-one days before the General Body Meeting at which the same are to be laid before the members be sent to the members of the company to every trustee for every holder of any debenture issued by the company and to all persons other than such members or trustee being the person so entitled to attend the General Body Meeting. 145. Copy of financial statement to be filed with registrar The Company shall comply with Section 137 of the Act as to filing copies of the Balance Sheet and Profit and Loss Account and documents required to be annexed or attached thereto with the Registrar.
			Winding up
☐	☑	90	• 146. Procedure for winding up If the Company shall be wound up and the assets available for distribution among the members as such shall be insufficient to repay the whole of the paid up capital such assets shall be distributed so that as nearly as may be the losses shall be borne by the members in proportion to the capital paid up or which ought to have been paid up at the commencement of the winding-up on the shares held by them respectively. And if in a winding-up the assets available for distribution among the members shall be more than sufficient to repay the whole of the capital paid up at the commencement of the winding-up the excess shall be distributed amongst the members in proportion to the capital at the commencement of the winding-up paid up or which ought to have been paid up on the shares held by them respectively. But this Article is to be without prejudice to the rights of the holders of shares issued upon special terms and conditions. If the Company shall be wound up whether voluntarily or otherwise the liquidators may with the sanction of a Special Resolution divide among the contributions in specie or kind any part of the assets of the Company and may with the like sanction vest any part of the assets of the Company in Trustees upon such trusts for the benefit of the contributories or any of them as the liquidators with the like sanction shall think fit.
			Indemnity
☐	☑	91	• 147. Officers to be indemnified Subject to provisions of the Act every Officer of the company shall be indemnified out of the assets of the Company against any liability incurred by him in defending any proceedings whether civil or criminal in which judgment is given in his favour or in which he is acquitted or in which relief is granted to him by the court or the Tribunal. Provided that if such person is proved to be guilty the premium paid on such insurance shall be treated as part of the remuneration.
			Others
☐	☑		• 148. Company not bound to recognize holding of shareson trust or any interest in shares other than that of registered holder Exceptas ordered by a Court of competent jurisdiction or as required by law theCompany shall not be bound to recognize holding of any share

			upon any trust andto recognize any equitable contingent future or partial interest in any shareor any interest in any fractional part of a share (except only as is by theseArticles otherwise expressly provided) any right in respect of a share otherthan an absolute right thereto in accordance with these Articles in the personfrom time to time registered as the holder thereof but the Board shall be atliberty at their sole discretion to register any share in the joint names ofany two or more persons or the survivor or survivors of them. 149. Funds etc.of Company may not be applied in purchase of shares of the Company The Companyshall not give either directly or indirectly and either by means of a loanguarantee the provision of security or otherwise any financial assistance forthe purpose of or in connection with the purchase or subscription made or to bemade by any person for purchase of any shares in the Company except inconformity with the provisions of Section 67 of the Act. 150. Underwriting andBrokerage Commission may be paid Subject to the provisions of Section 40 of theAct the Company may at any time pay a commission to any person in considerationof his subscribing or agreeing to subscribe for any shares in or debentures of theCompany or procuring or agreeing to procure subscriptions for any shares in ordebentures of the Company but so that the commission shall not exceed in caseof shares five percent of the price at which the shares are issued and in caseof debentures two and a half percent of the price at which the debentures areissued. Such commission may be satisfied by payment in cash or by allotment offully or partly paid shares or debentures or partly in one way and partly inthe other. Brokerage The Company may also on any issue of shares or debenturespay such brokerage as may be lawful. 151. Interest out of CapitalInterest maybe paid out of capital Where any shares are issued for the purposeof raising money to defray the expenses of the construction of any work orbuilding or the provision of any plant which cannot be made profitable for alengthy period the Company may pay interest on so much of that share capital asis for the time being paid up for the period at the rate and subject to theconditions and restrictions provided by the Company Act 2013 and may charge thesame to capital as part of the cost of construction of the work or building orthe provision of plant. 152. Annual Returns The Company shall comply with theprovisions of Sections 92 of the Act as to the making of Annual Returns. 153.Borrowing powers As per the provisions of Section 73 76 179 180 and otherapplicable provisions of the Act the Board of Directors may from time to timeat its discretion by resolution at a meeting of the Board and subject to theapproval of the shareholders in General Meeting accept deposits from Memberseither in advance of calls or otherwise and generally raise or borrow or securethe payment of any sums of money for the purpose of the Company. Providedhowever where the moneys already borrowed (apart from temporary loans obtainedfrom the Companys bankers in the ordinary due course of business) exceed theaggregate of the paid-up capital of the Company its free reserves (not beingreserves set apart for any specific purpose) and the securities premium theBoard shall not borrow such moneys without the consent of the Company inGeneral Meeting. Payment

or repayment of borrowed Moneys Subject to theprovisions of Article 64 hereof the payment and repayment of moneys borrowed asaforesaid may be secured in such manner and upon such terms and conditions inall respects as the Board of Directors may think fit by resolutions passed at ameeting of the Board and in particular by the issue of bonds or debentures ofthe Company whether unsecured or secured by a mortgage or charge over all orany part of the property of the Company (both present and future) including itsuncalled capital for the time being and debentures and other securities may bemade assignable free from any equities between the Company and the person towhom the same may be issued. Terms of issue of Debentures Any debentures orother securities may be issued or otherwise and may be issued on condition thatthey shall be convertible into shares of any denomination and with anyprivileges and conditions to redemption surrender drawing allotment of sharesand attending (but not voting) at General Meetings. Debentures with the rightto conversion into or allotment of shares shall be issued only with the consentof the Company in General Meetings accorded by special resolution. Register ofcharges to be Kept The Board shall cause a proper Register to be kept inaccordance with the provisions of Section 85 of the Act of all charges andfloating charges affecting the property or assets of the Company or any of itsundertakings and shall cause the requirements of Sections 77 79 and 81 to 87(both inclusive)of the Act in that behalf to be duly complied with so far asthey are required to be complied with by the Board .Register of Debentureholders The Company shall if at any time it issues debentures keep a Registerand Index of Debenture holders in accordance with Section 88 of the Act. TheCompany shall have the power to keep in any Country outside India a Register ofDebenture holders residing outside India in such manner as may be prescribed.Application to Debentures and other securities The provisions of the Articlesshall apply mutatis mutandis to debentures bonds or other securities issued bythe company. 154. Dematerialization of Securities Definitions For the purposeof this Article Depository means a depository as defined in clause (e) ofsub-section (1) of section 2 of the Depositories Act 1996. Beneficial Ownermeans a person or persons whose name is recorded in the Register maintained bya Depository under the Depository Act 1996. SEBI means the Securities andExchange Board of India established under section 3 of the Securities ExchangeBoard of India Act 1992. Securities means the securities as defined in clause(h) of section 2 of the Securities Contracts (Regulation) Act 1956Dematerialization of Securities Notwithstanding anything contained in theseArticles the Company shall be entitled to dematerialize its existing securitiesrematerialize its securities held in the Depositories and or offer its freshsecurities in dematerialized form pursuant to the provisions of theDepositories Act 1996 and the rules framed there under if any. Option forinvestors Every person subscribing to or holding securities of the Companyshall have the option to receive securities certificates or to hold thesecurities with the Depository. Such a person who is the beneficial owner ofthe securities can at any time optout of the Depository if permitted by the lawin

		92	respect of any security in the manner and within the time prescribed issuedto the beneficial owner the required certificate of the securities. If a personopts to hold his securities with a Depository the Company shall intimate suchDepository the details of allotment of the security and on receipt of theinformation the depository shall enter in its records the name of the allotteesas the beneficial owner of the securities. Securities in Depository to be inFungible Form All securities held by a Depository shall be dematerialized andbe in fungible form. Nothing contained in Section 88 89 112 and 186 of the Actshall apply to a Depository in respect of the securities held by it on behalfof the Beneficial Owners. Rights and Liabilities of Beneficial Owner (a)Notwithstanding anything to the contrary contained in the Act or these Articlesa Depository shall be deemed to be the registered owner for the purposes ofeffecting transfer of ownership of security on behalf of the beneficial owners.(b) Save as otherwise provided in (a) above the Depository as the registeredowner of the securities shall not have any voting rights or any other rights inrespect of the securities held by it. (c) Every person holding securities ofthe Company and whose name is entered as the beneficial owner in the records ofthe Depository shall be deemed to be a member of the Company. The beneficialowner of securities shall be entitled to all the rights and benefits and besubject to all the liabilities in respect of his securities which are held by aDepository. Service of Documents Notwithstanding anything to the contrarycontained in the Act or Articles to the contrary where securities are held in aDepository the records of the beneficial ownership may be served by suchDepository on the Company by means of electronic mode or by delivery offloppies or discs . Provisions of Articles to apply to shares held inDepository Nothing contained in Section 56 of the Act or these Articles shallapply to a transfer of securities effected by a transferor and transferee bothof whom are entered as beneficial owners in the records of a Depository.Allotment of Securities dealt within a Depository Notwithstanding anything inthe Act or these Articles where securities are dealt with by the Depository theCompany shall intimate the details thereof to the Depository immediately onallotment of such securities. Distinctive numbers of securities held in thedepository Mode Nothing contained in the Act or these Articles regarding thenecessity of having distinctive numbers on securities issued by the Companyshall apply to securities held with a Depository. Register and Index ofBeneficial Owners The Register and Index of Beneficial Owners maintained by aDepository under the Depositories Act 1996 shall be deemed to be the Registerand Index of member and security holder for the purpose of these Articles. 155.Conversion of Shares into Stock and Reconversion Shares may be converted intostock and reconverted The Company in General Meeting may convert any paid upshares into stock and when any shares shall have been converted into stock theseveral holders of such stock may henceforth transfer their respective interesttherein or any part of such interest in the same manner and subject to the sameregulations as if no such conversion had taken place or as near thereto ascircumstances will admit. The Company may at any time reconvert any stock intopaid-up shares. Rights of

			stockholders The holders of stock shall according tothe amount of stock held by them have the same rights privileges and advantagesas regards dividends voting at meetings of the Company and other matters as ifthey held the shares from which the stock arose. 156. Audit Accounts to beaudited The Auditors of the Company shall be appointed or reappointed by theComptroller and Auditor General of India and their remuneration rights andduties shall be regulated by Section 139 to 143 and 145 to 148 of the Act.Powers of the Comptroller and Auditor General of India The Comptroller andAuditor General of India shall have the powers- (a) to direct the mannerin which the Companys accounts shall be audited by the auditors appointed inpursuance of Article hereof and to give such auditors instruction in regard toany matter relating to the performance of their functions as such. (b) toconduct a supplementary or test audit of the financial statement of the Companyby such person or persons as he may authorize in this behalf and for thepurposes of such audit to have access at all reasonable times to all accountsaccount books vouchers documents and other papers of the Company and to requireinformation or additional information to be furnished to any person or personsso authorized on such matters by such person or persons and in such form as theComptroller and Auditor General may by general or special order direct.Comments upon or supplement to audit report by the Comptroller Auditor Generalof India to be placed before the annual general meeting The auditors aforesaidshall submit a copy of his her audit report to the Comptroller and AuditorGeneral of India who shall have the right to comment upon or supplement suchaudit report in such manner as he may think fit. Any such comments upon orsupplement to the audit report shall be placed before the Annual GeneralMeeting of the Company at the same time and in the same manner as the auditreport. 157. Service of Documents Manner of Service of Documents A document ornotice may be served or given by the Company to any Member either through speedpost registered post or through electronic mode to his registered address or(if he has no registered address in India) to the address if any in Indiasupplied by him to the Company for serving documents or notices on him. Noticeis to be sent by the company through its authorized and secured computerprogramme which is capable of producing confirmation and keeping record of suchcommunication addressed to the person entitled to receive such communication atthe last electronic mail address provided by the member. The notice may be sentthrough e-mail as a text or as an attachment to e-mail or as a notificationproviding electronic link or Uniform Resource Locator for accessing such noticethrough in-house facility or its registrar and transfer agent or authorise anythird party agency providing bulk e-mail facility. When notices or documentsserved on Members Where a document or notice is sent by post service of thedocument or notice shall be deemed to be effected by properly addressingprepaying and posting a letter containing the document or notice. When noticeor notifications of availability of notice are sent by e-mail the companyshould ensure that it uses a system which produces confirmation of the totalnumber of recipients e-mailed and a record of each recipient to whom the

			noticehas been sent and copy of such record and any notices of any failedtransmissions and subsequent re-sending shall be retained by or on behalf ofthe company as proof of sending. Provided that the member shall provide theupdated email address to the company and for that company will provide anadvance opportunity at least once in a financial year to the member to registerhis e-mail address and changes therein and such request may be made by onlythose members who have not got their email id recorded or to update a freshemail id. Notice will also be simultaneously updated in the website of thecompany. By Advertisement A document or notice advertised in a newspapercirculating in the neighbourhood of the Registered Office shall be deemed to beduly served or sent on the day on which the advertisement appears on or toevery Member who has no registered address in India and has not supplied to theCompany an address within India for the serving of documents on sending thenotices to him. Explanatory Statement of material facts under Section 102 neednot be advertised but it will be mentioned in the advertisement that theStatement has been forwarded to the Members. On personal representatives etc. Adocument or notice may be served or given by the Company on or to the personsentitled to a share in consequence of the death or insolvency of a Member bysending it through the post in prepaid letter addressed to them by name or bythe title of representative of the deceased or assignee of the insolvent or byany like description at the address (if any) in India supplied for the purposeby the persons claimed to be entitled or until such an address has been so suppliedby serving the document or notice in any manner in which the same might havebeen given if the death or insolvency had not occurred. To whom documents ornotices must be served or given Documents or notices of every General Meetingshall be served or given in same manner as herein before or to (a) every memberof the company legal representative of any deceased member or the assignee ofan insolvent member (b) the auditor or auditors of the company and (c) everydirector of the company. Members bound by documents or notices served on orgiven to previous holders Every person who by operation of law transfer orother means whatsoever shall become entitled to any share shall be bound byevery document or notice in respect of such share which previously to his nameand address being entered in the Register of Members shall have been dulyserved on or given to the person from whom he derives his title to such shares.Documents or notice by Company and signature thereto Any document or notice tobe served or given by the Company may be signed by a director or key managerialpersonnel or an officer of the company duly authorised by the Board in thisbehalf. Service of document or notice by Member All documents or notices to beserved or given by Members on or to the Company or any officer thereof shall beserved or given by sending it to the Company or Officer at the Office by postor through electronic mode under a certificate of posting or by registered postor through email. 158. Secrecy (a) Every Director Manager Auditor TreasurerTrustee member of a committee officer servant agent accountant or other personemployed in the business of the Company shall if so required by the Directorsbefore entering upon

			his duties sign a declaration pledging himself to observestrict secrecy respecting all transactions and affairs of the Company with thecustomers and the state of the accounts with individuals and in mattersrelating thereto and shall by such declaration pledge himself not to reveal anyof the matters which may come to his knowledge in the discharge of his dutiesexcept when required so to do by the Directors or by law or by the person towhom such matters relate and except so far as may be necessary in order tocomply with any of the provisions in these presents contained. (b) No Membershall be entitled to visit or inspect any work of the Company without thepermission of the Directors or to require discovery of or any informationrespecting any details of the Companys trading or any matter which is or maybein the nature of a trade secret mystery of trade secret process or any othermatter which may relate to the conduct of the business of the Company and whichin the opinion of the Directors it would be in expedient in the interest of theCompany to disclose.159.Copies of Memorandum and Articles of Association to besent by the Company Copies of the Memorandum and Articles of Association of theCompany and other documents referred to in Section 17 of the Act shall be sentby the Company to every Member at his request within seven days of the requeston payment of such fees as maybe prescribed.

Subscriber Details

S. No.	Subscriber Details				
	*Name, Address, Description and Occupation	DIN / PAN / Passport number	*Place	DSC	Dated
1	PFC Consulting Limited thro ugh Sachin Arora, Company secretary, Urjanidhi, 1, Barak hamba Lane, Connaught Pla ce, New Delhi, 110001 Occu pation: Service	A*G*A*4*4*	Delhi		02/01/2025
2	Shri Sachin Shukla R/o H1/ 6, 4th Floor, H1 Block, South City 2, Sector 50, Gurgaon -1 22018, Haryana, India, Occu pation - Service (As Nomine e of PFC Consulting Limite d)	0*6*3*6*	Delhi		02/01/2025
3	RAKESH MOHAN Flat No 36 4, Sunehari Bagh Apartment, Sector-13, Rohini, Delhi- 110 085 (Nominee of PFCCL) Oc cupation: Service	0*6*4*2*	Delhi		02/01/2025
4	Shri Rishab Jain R/o T-11, Fi rst Floor, Green Park Extensi on, Green Park Market, New Delhi - 110016 Occupation - Service (As Nominee of PFC Consulting Limited)	0*4*5*6*	Delhi		02/01/2025

5	Shri Sanjay Kumar Nayak R/o K713, Jalvayu Tower, Sector-56, Gurgaon, Haryana - 122011, Occupation - Service (As Nominee of PFC Consulting Limited)	0*1*7*9*	Delhi		02/01/2025
6	Neeraj Singh R/o C-703 F-2, The Crescent Appartment, Sector-50, Noida, Gautam BudhaNagar, Uttar Pradesh - 201301 Occupation - Service (As Nominee of PFC Consulting Limited)	0*6*3*9*	Delhi		02/01/2025
7	Shri Naveen Kumar R/o F-024, Assotech Windsor Court Sector78, Noida, Uttar Pradesh, India 201301 Occupation - Service (As Nominee of PFC Consulting Limited)	1*4*7*5*	Delhi		02/01/2025

Signed before me						
Name Prefix *(ACA/FCA/ACS/FCS/ACMA/FCMA)*	***Name of the witness**	***Address, Description and Occupation**	***DIN / PAN / Passport number / Membership**	***Place**	**DSC**	**Dated**
FCS	Nitin Kochhar	Flat No. 608, Sixth Floor, Pragati Tower - 26, Rajendra Place, New Delhi - 110008 Company Secretary	6*3*	Delhi		02/01/2025

PFC CONSULTING LTD

पीएफसी कंसल्टिंग लिमिटेड
(पावर फाइनेंस कॉर्पोरेशन लि० की पूर्णत स्वामित्वाधीन सहायक कम्पनी)
PFC CONSULTING LIMITED
(A wholly owned Subsidiary of Power Finance Corporation Ltd.)

Ref. No.: 04/24-25/ITP-97/RFP

ANNEXURE P-7

February 21, 2025

477

To

Mr. Mahendra Kumar Sahu
Resonia Limited
DLF Cyber Park, Tower-B
9th Floor, Udyog Vihar, Phase-III
Sector-20, Gurugram-122008, Haryana

E-mail: Sterlite.bd@sterlitepower.com

Sub.: Independent Transmission Project (ITP) "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"- Regarding submission of CPG and Due Diligence for transfer of SPV.

Ref: Letter of Intent (LoI) dated February 19, 2025.

Dear Sir,

In line with the provisions of Clause 2.15.2 (a), (b) & (c) of the RfP Document, Contract Performance Guarantee in favour of Nodal Agency i.e., Central Transmission Utility of India Limited (CTUIL) has to be provided, the Share Purchase Agreement has to be executed and the SPV namely, "ANANTAPUR II REZ TRANSMISSION LIMITED" has to be acquired by the selected bidder i.e., "**Resonia Limited (earlier known as Sterlite Grid 32 Limited)**" along with all its related assets and liabilities for an Acquisition Price.

It may be noted that the SPV is tentatively scheduled to be transferred on 07.03.2025. You are therefore requested to arrange for due diligence process accordingly.

It is intimated that the Acquisition Price of the SPV "ANANTAPUR II REZ TRANSMISSION LIMITED" is **Rs.19,23,35,520/- (Rupees Nineteen Crore Twenty Three Lakh Thirty Five Thousand Five Hundred Twenty Only)**. The break-up for this amount is given below:

S.No.	Description	Amount (in INR)
1.	PFCCL Management Fees	15,00,00,000
2.	Goods and Service Tax on PFCCL Management Fees	2,70,00,000
3.	Other Administrative Expenses	1,52,35,520
4.	Share Capital	1,00,000
	Total	19,23,35,520

The payment of the Acquisition Price may be made as detailed hereunder:

Name	: **PFC Consulting Limited**
PFCCL Goods and Service Tax No.	: 07AAECP6182F1ZC
PFCCL PAN No.	: AAECP6182F
Mode of Payment	: RTGS

Bank Details:

Bank Name	**ICICI Bank, 9A, Phelps Building, Connaught Place, New Delhi**
Name of Account	PFC CONSULTING LIMITED
A/C No.	000705036117
IFSC Code	ICIC0000007

It is requested that TDS may be deducted against the above payment as per I.T. rules. Copy of PAN Card and Cheque of the above bank are enclosed herewith.

You are requested to make the above payment as per the details provided above through RTGS at the earliest.

You are requested to provide the Contract Performance Guarantee as per the details provided in RFP documents, at the earliest.

Further, it is requested to provide the Contract Performance Guarantee (CPG) in favour of Nodal Agency i.e. Central Transmission Utility of India Limited (CTUIL) as per the details provided at **Annexure –A** at the earliest.

With kind regards,

Yours sincerely,

(Naveen Phougat)
General Manager

Contract Performance Guarantee (CPG)

Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)

S No	Name of Nodal Agency	Address	Amount of CPG
1	Central Transmission Utility of India Limited	"5th to 10th Floor, Ircon International Tower-1, Sector-32, Gurugram-122001	Rs. 128.75 Crore (Rupees One Hundred Twenty Eight Crore Seventy Five Lakh Only)

PFC CONSULTING LTD

पीएफसी कंसल्टिंग लिमिटेड
(पावर फाइनेंस कॉर्पोरेशन लि0 की पूर्णत स्वामित्वाधीन सहायक कंपनी)
PFC CONSULTING LIMITED
(A wholly owned Subsidiary of Power Finance Corporation Ltd.)

ANNEXURE P-8

Ref. No.: 04/24-25/ITP-97/RFP

February 19, 2025

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To

Mr. Mahendra Kumar Sahu
Resonia Limited
DLF Cyber Park, Tower-B
9th Floor, Udyog Vihar, Phase-III
Sector-20, Gurugram-122008, Haryana

E-mail: Sterlite.bd@sterlitepower.com

Sub.: **Independent Transmission Project (ITP) "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"- Letter of Intent**

Dear Sir,

We refer to:

1. The Request for Proposal document dated October 15, 2024 issued to **'Resonia Limited (earlier known as Sterlite Grid 32 Limited)'** as regards participation in the international competitive bidding process for Transmission Scheme for **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"**, and as amended till the bid deadline including all correspondence/ clarifications / amendments exchanged between **'Resonia Limited (earlier known as Sterlite Grid 32 Limited)'** and PFC Consulting Limited in regard thereto (hereinafter collectively referred to as the **"Final RFP"**);

2. The offer of **'Resonia Limited (earlier known as Sterlite Grid 32 Limited)'** by way of a Technical Bid pursuant to (1) above submitted on January 31, 2025 in response to the Final RFP.

3. The offer of **'Resonia Limited (earlier known as Sterlite Grid 32 Limited)'** by way of Financial Bid-Initial Offer submitted on January 31, 2025 in response to the Final RFP.

4. The offer of **'Resonia Limited (earlier known as Sterlite Grid 32 Limited)'** by way of a Financial Bid-Final Offer Submitted during e-Reverse Auction process concluded on February 14, 2025 in response to the Final RFP.

5. The Technical Bid as at S.No. (2) above and the Financial Bid as at S.No. (3) & (4) above, hereinafter collectively referred to as the "Bid".

This is to inform you that the process of evaluating bids received pursuant to the Final RFP, including the Bid, has been concluded. We are pleased to inform you that your proposal and

offer received by way of the "Bid" has been accepted and **'Resonia Limited (earlier known as Sterlite Grid 32 Limited)'** is hereby declared as the Successful Bidder as per Clause 3.6.1 of the Final RFP for the above project and consequently, this Letter of Intent (hereinafter referred to as the "LoI") is being issued.

This LoI is based on the Final RFP and you are requested to please comply with the following:

a) Acknowledging its issuance and unconditionally accepting its contents and recording "Accepted unconditionally" under the signature of your authorized signatory on each page of the duplicate copy of this letter attached herewith and returning the same to PFC Consulting Limited within seven (07) days of the date of issuance of LoI. This LoI is issued to you in duplicate.

b) Completion of various activities as stipulated in the Final RFP including in particular Clause 2.15.2, Clause 2.15.3 and Clause 2.15.4 of the Final RFP, within the timelines as prescribed therein.

It may be noted that PFC Consulting Limited has the rights available to them under the Final RFP, including rights under Clause 2.15.5 and Clause 3.6.3 thereof, upon your failure to comply with the aforementioned conditions.

As you are aware, the issuance and contents of this LoI are based on the Bid submitted by you as per the Final RFP including the Transmission charges and other details regarding the Scheduled COD as contained therein. The Quoted Transmission Charges as submitted by you and the Scheduled COD of each transmission element and the Project as agreed by you in your Bid, as per Annexure 21 and Format-1 of Annexure 8 respectively of the Final RFP is annexed herewith as **Schedule-A** and incorporated herein by way of reference.

Yours sincerely,
For PFC Consulting Limited

(Naveen Kumar)
General Manager

Enclosures:

- **Schedule A** – Quoted Transmission Charges and the Scheduled COD of each Transmission Element and the Project submitted in your Bid, as per Annexure 21 and Format-1 of Annexure 8 respectively of the Final RFP

Copy to:

1. **Chairperson and Managing Director, Power Finance Corporation Limited**, "Urjanidhi", 1, Barakhamba Lane, Connaught Lane, New Delhi – 110 001

2. **Director (Transmission), Ministry of Power**, Shram Shakti Bhawan, Rafi Marg, New Delhi- 110001

3. **Chief Engineer (PSPA-I) and Member Secretary (NCT), Central Electricity Authority,** 3rd Floor, Sewa Bhawan, R.K. Puram, New Delhi – 110066

4. **Chief Operating Officer (COO), Central Transmission Utility of India Limited (CTUIL),** 5th-10th Floor, Ircon International Tower-1, Sector-32, Gurugram-122001

5. **Secretary, Central Electricity Regulatory Commission**, 6th, 7th & 8th Floors, World Trade Center, Tower-B, Nauroji Nagar, New Delhi – 110029



TC

SCHEDULE - A

1. Quoted Transmission Charges as per Annexure-21-Format For Financial Bid

Quoted Transmission Charges: Rs. 4,486.42 Million Per Annum

SCHEDULE-A

2. Scheduled COD of each transmission Element and the Project as per Format 1 of Annexure-8 of RFP

S. No.	Name of the Transmission Element	Scheduled COD as per Gazette Notification	% of Quoted Transmission Charges recoverable on Scheduled COD of the Element of the Project	Element(s) which are pre-required for declaring the commercial operation (COD) of the respective Element
1.	Establishment of 4x1500 MVA, 765/400 and 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level	24 Months	100%	Element at Sl. No. 2, 3 and 4
2.	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			Element at Sl. No. 1, 3 and 4
3.	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			Element at Sl. No. 1, 2 and 4
4.	± 300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR			Element at Sl. No. 1, 2 and 3

ANNEXURE P-9

Dated: February 17, 2025

CERTIFICATE BY THE BID EVALUATION COMMITTEE

Subject: Selection of Successful Bidder as Transmission Service Provider to establish "Transmission System for Integration of Anantapur-II REZ-Phase-I (For 4.5 GW)".

It is hereby certified that:

1. The entire bid process has been carried out in accordance with the "Tariff based Competitive Bidding Guidelines for Transmission Service" and "Guidelines for encouraging competition in development of the Transmission Projects" issued by Ministry of Power, Govt. of India under Section 63 of the Electricity Act, 2003 and as amended from time to time.

2. **Resonia Limited** emerged as the Successful Bidder after the conclusion of e-reverse bidding process with the lowest Quoted Transmission Charges of **Rs. 4,486.42 million per annum.**

3. The quoted tariff is lower than the Levelised Tariff calculated based on CERC norms considering the Capital Cost for the Project **'Transmission System for Integration of Anantapur-II REZ-Phase-I (For 4.5 GW)'** as assessed by Cost Committee. The quoted tariff discovered through e-reverse bidding process is acceptable.

Name of Committee Member	Signature
Shri. Rajesh Kumar Singh, General Manager, SBI Commercial Client Group Regional Office - II New Delhi - **Chairman**	
Shri. R Jayakumar, Director (Transmission), KPTCL- **Member**	
Shri. A.K.V Bhaskar, Director (Grid, Transmission & Management), APTRANSCO – **Member**	
Shri. Bhanwar Singh Meena, Director (PSE&TD), Central Electricity Authority- **Member**	
Shri. B. S. Bairwa, Chief Engineer (I/C), PSPA-II Division, Central Electricity Authority – **Member**	
Shri. Neeraj Singh, Chairman, ANANTAPUR II REZ TRANSMISSION LIMITED, New Delhi - **Convener Member**	

ANNEXURE P-10 (COLLY.)

Ref: ResoniaLimited/2024-25/BA/Anantapur-II/RA/03 **Date:** 31-03-2025

TO,

CENTRAL TRANSMISSION UTILITY OF INDIA LIMITED,
5TH TO 9TH FLOOR, IRCON INTERNATIONAL TOWER -1,
PLOT NO.16, INSTITUTIONAL AREA, SECTOR -32,
GURGAON, HARYANA 122003.

Sub: Submission of Contract Performance Bank Guarantee (CPBG) in favor of CTUIL for "ANANTAPUR II REZ TRANSMISSION LIMITED".

Ref: Letter of intent (LOI) no. 04/24-25/ITP-97/RFP dated 19.02.2025 issued by PFC Consulting Limited.

Dear Sir,

This is in reference to your above-referred letters regarding transfer of "ANANTAPUR II REZ TRANSMISSION LIMITED". In this regard, please find enclosed the original CPBG in favor of CTUIL for "ANANTAPUR II REZ TRANSMISSION LIMITED". The details of CPBG's are as under:

BG No.	PBGI01002500054
Date of Issue	March 28, 2025
Amount of BG	Rs.128.75 Crore (Rupees One Hundred Twenty-Eight Crore Seventy-Five Lakh Only)
Expiry Date	June 30,2027
Claim Expiry	June 30,2028

Kindly Acknowledge the receipt of the same.

Thanking You,

Yours Faithfully,

For Resonia Limited (formerly known as Sterlite Grid 32 Limited)

RESONIA LIMITED

Mahendra Kumar Sah
(Authorized Signatory)

Copy to: Naveen Kumar, General Manager, PFC Consulting Limited 9th Floor, Wing-A, Statesman House, Connaught Place, New Delhi – 110001.

Received BG
31/03/2025
Deepak Krishnan
Manager, CTUIL

RBL BANK
apno ka bank

BANK GUARANTEE COVERING LETTER

Date: March 28, 2025

TO,
CENTRAL TRANSMISSION UTILITY OF INDIA LIMITED,
5TH TO 9TH FLOOR, IRCON INTERNATIONAL TOWER -1,
PLOT NO.16, INSTITUTIONAL AREA, SECTOR -32,
GURGAON, HARYANA 122003.

Bank Guarantee issued by us,

Bank Guarantee Number	PBGI01002500054	BG Issue date	March 28, 2025
Amount (In Figures)	Rs.128,75,00,000/-		
Amount (in Words)	Rupees One Hundred Twenty Eight Crore Seventy Five Lakh Only		
Valid Till Date	June 30, 2027		
Claim Valid Till Date (Final Validity Date)	June 30, 2028		
Applicant Name	RESONIA LIMITED.		

Please find enclosed herewith the original of the above stated bank guarantee issued by us.

Please note that RBL BANK LTD., shall not be liable under the Bank Guarantee post Expiry of the Claim period as requested by you.

We advise you to obtain, in your own interest, confirmation of genuineness of the above stated guarantee from us by contacting us on the address below:

RBL Bank Limited,
Global Trade Services
E-mail: tfsolutions@rblbank.com

For RBL Bank Limited,
Name:
Designation:

Enclosure: As above.

RBL BANK LIMITED Iffco Chowk Branch (R-361)

RBL Bank Limited
Branch : Ground Floor, Block A, Unit No - 7, IFFCO Chowk, Haryana, Gurgaon - 122001, India.
Registered Office : 1st Lane, Shahupuri, Kolhapur - 416001, India | Tel.: +91 2316650214 | Fax : +91 2312657386
CIN : L65191PN1943PLC007308 . E-mail: customercare@rblbank.com

Bond

Indian-Non Judicial Stamp
Haryana Government

Date :21/03/2025

Certificate No. G0U2025C3264

GRN No. 129539187

Stamp Duty Paid : ₹ 101
(Rs. Only)

Penalty :₹ 0
(Rs. Zero Only)

Deponent

Name: Rbl Bank Ltd
H.No/Floor : Na
Sector/Ward : Na
Landmark : Na
City/Village : Gurugram
District : Gurugram
State : Haryana
Phone : 78******24

Purpose : BANK PURPOSE **to be submitted at Others**

Bank Guarantee No	: PBGI01002500054
BG Amount	: Rs.128,75,00,000/-(Rupees One Hundred Twenty Eight Crore Seventy Five Lakh Only)
BG Issue Date	: March 28, 2025
BG Expiry Date	: June 30, 2027
BG Claim Expiry Date	: June 30, 2028

Bank Guarantee No. PBGI01002500054
BG Issue Date: March 28, 2025

RBL BANK LIMITED Iffco Chowk Branch (R-361)

RBL BANK LIMITED Iffco Chowk Branch (R-361)

Bond

Indian-Non Judicial Stamp
Haryana Government

Date :21/03/2025

Certificate No. G0U2025C3265

GRN No. 129539187

Stamp Duty Paid : ₹ 101
(Rs. Only)

Penalty :₹ 0
(Rs. Zero Only)

Deponent

Name: Rbl Bank Ltd
H.No/Floor : Na
Sector/Ward : Na
Landmark : Na
City/Village : Gurugram
District : Gurugram
State : Haryana
Phone : 78******24

Purpose : BANK PURPOSE **to be submitted at Others**

Bank Guarantee No	: PBGI01002500054
BG Amount	: Rs.128,75,00,000/-(Rupees One Hundred Twenty Eight Crore Seventy Five Lakh Only)
BG Issue Date	: March 28, 2025
BG Expiry Date	: June 30, 2027
BG Claim Expiry Date	: June 30, 2028

Bank Guarantee No. PBGI01002500054
BG Issue Date: March 28, 2025

RBL BANK LIMITED Iffco Chowk Branch (R-361)

RBL BANK LIMITED Iffco Chowk Branch (R-361)

Bond

Indian-Non Judicial Stamp
Haryana Government

490

Date :21/03/2025

Certificate No. G0U2025C3266

GRN No. 129539187

Stamp Duty Paid : ₹ 101
(Rs. Only)

Penalty :₹ 0
(Rs. Zero Only)

Deponent

Name: Rbl Bank Ltd
H.No/Floor : Na
Sector/Ward : Na
Landmark : Na
City/Village : Gurugram
District : Gurugram
State : Haryana
Phone : 78******24

Purpose : BANK PURPOSE **to be submitted at Others**

Bank Guarantee No	: PBGI01002500054
BG Amount	: Rs.128,75,00,000/-(Rupees One Hundred Twenty Eight Crore Seventy Five Lakh Only)
BG Issue Date	: March 28, 2025
BG Expiry Date	: June 30, 2027
BG Claim Expiry Date	: June 30, 2028

Bank Guarantee No. PBGI01002500054
BG Issue Date: March 28, 2025

RBL BANK LIMITED Office Cheque Branch (R-369)

RBL BANK LIMITED Office Cheque Branch (R-369)

Bond

Indian-Non Judicial Stamp
Haryana Government

Date :21/03/2025

Certificate No. G0U2025C3267

GRN No. 129539187

Stamp Duty Paid : ₹ 101
(Rs. Only)

Penalty :₹ 0
(Rs. Zero Only)

Deponent

Name: Rbl Bank Ltd
H.No/Floor : Na
Sector/Ward : Na
Landmark : Na
City/Village : Gurugram
District : Gurugram
State : Haryana
Phone : 78******24

Purpose : BANK PURPOSE to be submitted at Others

Bank Guarantee No	: PBGI01002500054
BG Amount	: Rs.128,75,00,000/-(Rupees One Hundred Twenty Eight Crore Seventy Five Lakh Only)
BG Issue Date	: March 28, 2025
BG Expiry Date	: June 30, 2027
BG Claim Expiry Date	: June 30, 2028

Bank Guarantee No. PBGI01002500054
BG Issue Date: March 28, 2025

RBL BANK LIMITED Office Chowk Branch (R-384)

RBL BANK LIMITED Office Chowk Branch (R-384)

Bond

Indian-Non Judicial Stamp
Haryana Government

Date :21/03/2025

Certificate No. G0U2025C3268

GRN No. 129539187

Stamp Duty Paid : ₹ 101
(Rs. Only)

Penalty :₹ 0
(Rs. Zero Only)

Deponent

Name: Rbl Bank Ltd
H.No/Floor : Na
Sector/Ward : Na
Landmark : Na
City/Village : Gurugram
District : Gurugram
State : Haryana
Phone : 78******24

Purpose : BANK PURPOSE to be submitted at Others

Bank Guarantee No	: PBGI01002500054
BG Amount	: Rs.128,75,00,000/-(Rupees One Hundred Twenty Eight Crore Seventy Five Lakh Only)
BG Issue Date	: March 28, 2025
BG Expiry Date	: June 30, 2027
BG Claim Expiry Date	: June 30, 2028

Bank Guarantee No. PBGI01002500054
BG Issue Date: March 28, 2025

RBL BANK LIMITED Office Cheque Branch (R-369)

RBL BANK LIMITED Office Cheque Branch (R-369)

Sr. No.: 016454

493

RBL BANK

apno ka bank

BANK GUARANTEE

TO,
CENTRAL TRANSMISSION UTILITY OF INDIA LIMITED,
5TH TO 9TH FLOOR, IRCON INTERNATIONAL TOWER -1,
PLOT NO.16, INSTITUTIONAL AREA, SECTOR -32,
GURGAON, HARYANA -122003.

In consideration of the Resonia Limited Registered Office: DLF Cyber Park, Tower-B, 9th Floor, Udyog Vihar, Phase III, Sector-20, Gurgaon -122008, Haryana, India agreeing to undertake the obligations under the Transmission Service Agreement dated March 31, 2025 and the other RFP Project Documents and the Nodal Agency and the PFC Consulting Limited, agreeing to execute the RFP Project Documents with the Resonia Limited, regarding setting up the Project, the RBL Bank Ltd., a Company incorporated and registered under the Indian companies act, 1913 and deemed to exist within the companies Act 1956, and governed by the Banking Regulation Act, 1949 and having its registered office at 1st Lane, Shahupuri, Kolhapur – 416001, Maharashtra, and its corporate office at One World Centre, Tower-2B, 6th Floor, 841, Senapati Bapat Marg, Lower Parel (W), Mumbai- 400 013, India and having one of its Branch Office at RBL BANK LTD., Ground Floor, Block A, ABW Tower, IFFCO Chowk, Gurgaon – 122001 (hereinafter referred to as "the Guarantor Bank" hereby agrees unequivocally, irrevocably and unconditionally to pay to Central Transmission Utility of India Limited (being the Nodal Agency) at 5th to 9th Floor, IRCON International Tower -1, Plot No.16, Institutional Area, Sector 32, Gurgaon, Haryana - 122003 forthwith on demand in writing from the Nodal Agency or any Officer authorized by it in this behalf, any amount up to and not exceeding Rs.128,75,00,000/-(Rupees One Hundred Twenty Eight Crore Seventy Five Lakh Only) on behalf of Resonia Limited.

This guarantee shall be valid and binding on the Guarantor Bank up to and including June 30, 2027 and shall not be terminable by notice or any change in the constitution of the Bank or the term of the Transmission Service Agreement or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective agreement.

Our liability under this Guarantee is restricted to Rs.128,75,00,000/-(Rupees One Hundred Twenty Eight Crore Seventy Five Lakh Only). Our Guarantee shall remain in force until June 30, 2027. The Nodal Agency shall be entitled to invoke this Guarantee up to Three Hundred Sixty Five (365) days of the last date of the validity of this Guarantee.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand from Central Transmission Utility of India Limited (in its roles as

www.rblbank.com

RBL Bank Limited, National Operating Centre, Techniplex – 1, 8th Floor, Off Veer Savarkar Flyover, Goregaon (W) Mumbai 400062. I Tel: +91 22 43020600.
Registered Office: RBL Bank Limited, 1st Lane, Vyapari Peth, Shahupuri, Kolhapur – 416 001. I Tel.: +91 231 6650214.
CIN: L65191PN1943PLC007308 I E-mail: tlsolutions@rblbank.com

the Nodal Agency), made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to Nodal Agency.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by Resonia Limited, ANANTAPUR II REZ TRANSMISSION LIMITED and/or any other person. The Guarantor Bank shall not require Nodal Agency to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against Nodal Agency in respect of any payment made hereunder. This BANK GUARANTEE shall be interpreted in accordance with the laws of India.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring, liquidation, winding up, dissolution or any other change in the constitution of the Guarantor Bank.

THIS BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly Nodal Agency shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against ANANTAPUR II REZ TRANSMISSION LIMITED or Resonia Limited, as the case may be, to make any claim against or any demand on ANANTAPUR II REZ TRANSMISSION LIMITED or Resonia Limited, as the case may be, or to give any notice to ANANTAPUR II REZ TRANSMISSION LIMITED or Resonia Limited, as the case may be, or to enforce any security held by the Nodal Agency or to exercise, levy or enforce any distress, diligence or other process against ANANTAPUR II REZ TRANSMISSION LIMITED or Resonia Limited, as the case may be.

The Guarantor Bank acknowledges that this BANK GUARANTEE is not personal to the Nodal Agency and may be assigned, in whole or in part, (whether absolutely or by way of security) by Nodal Agency to any entity to whom the Nodal Agency is entitled to assign its rights and obligations under the Transmission Service Agreement.

The Guarantor Bank hereby agrees and acknowledges that Nodal Agency shall have a right to invoke this Bank Guarantee either in part or in full, as it may deem fit.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rs.128,75,00,000/-(Rupees One Hundred Twenty Eight Crore Seventy Five Lakh Only) and it shall remain in force until June 30, 2027, with an additional claim period of Three Hundred Sixty Five (365) days thereafter. This BANK GUARANTEE shall be extended from time to time for such a period, as may be desired by Resonia Limited. We

RBL Bank Limited, National Operating Centre, Techniplex – 1,8th Floor, Off Veer Savarkar Flyover, Goregaon (W) Mumbai 400062. | Tel: +91 22 43020600.
Registered Office: RBL Bank Limited, 1st Lane, Vyapari Peth, Shahupuri, Kolhapur – 416 001. | Tel.: +91 231 6650214
CIN: L65191PN1943PLC007308 | E-mail: tfsolutions@rblbank.com

are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if Nodal Agency serves upon us a written claim or demand.

In Witness Where Of The Bank Through Its Authorized Officer, Has Set Its Hand And Stamp On This March 28, 2025 At Gurgaon.

For RBL Bank Limited

RBL BANK LIMITED Iffco Chowk Branch (R-361)

Authorized Signatory
Sign / Emp No.
SURENI ARORA

For RBL Bank Limited

RBL BANK LIMITED Iffco Chowk Branch (R-361)

Authorized Signatory
Sign / Emp No. 18223
RATNADEEP BANDYOPADHYAY

In witness where of:

Signature Nikhil 56586

Name: NIKHIL MATHUR

Power of attorney No.: 56586

For: RBL BANK LTD., Ground Floor, Block A, ABW Tower, IFFCO Chowk, Gurgaon – 122001

Banker's Seal and Full Address, including mailing address of the Head Office

Bank Guarantee No. PBGI01002500054
BG Issue Date: March 28, 2025

PFC CONSULTING LTD

पीएफसी कंसल्टिंग लिमिटेड
(पावर फाइनेंस कॉर्पोरेशन लि० की पूर्णत स्वामित्वाधीन सहायक कंपनी)
PFC CONSULTING LIMITED
(A wholly owned Subsidiary of Power Finance Corporation Ltd.)

Ref. No. 04/24-25/ITP-97/RFP

March 31, 2025

ANNEXURE A-11

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To

Mr. Mahendra Kumar Sahu
Resonia Limited
DLF Cyber Park, Tower-B
9th Floor, Udyog Vihar, Phase-III
Sector-20, Gurugram-122008, Haryana

E-mail: Sterlite.bd@sterlitepower.com

Sub.: Independent Transmission Project (ITP) "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"- Regarding extension of LoI

Dear Sir,

This is with reference to Letter of Intent (LoI) issued on February 19, 2025 for establishment of subject transmission scheme. The Clause No. 2.15.2 of the RFP document stipulates that within ten (10) days of the issue of the LoI, the selected bidder shall complete all the activities including the acquisition of SPV.

As the SPV is being transferred on March 31, 2025, the last date for completion of various activities under Clause No. 2.15.2 of the RFP document is extended from February 28, 2025 (10 days from LoI) to March 31, 2025.

Thanking you,

Yours faithfully,

(Naveen Kumar)
General Manager

ANNEXURE P-12

Dated 31st March, 2025

SHARE PURCHASE AGREEMENT

BETWEEN

PFC CONSULTING LIMITED

AND

ANANTAPUR II REZ TRANSMISSION LIMITED

AND

RESONIA LIMITED
(FORMERLY KNOWN AS STERLITE GRID 32 LIMITED)

PFC CONSULTING LIMITED NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

RESONIA LIMITED RESONIA

498

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

सत्यमेव जयते

₹500

e-Stamp

Certificate No.	:	IN-DL58948920947629X
Certificate Issued Date	:	27-Mar-2025 05:31 PM
Account Reference	:	IMPACC (IV)/ dl716803/ DELHI/ DL-DLH
Unique Doc. Reference	:	SUBIN-DLDL716803590960708917000X
Purchased by	:	PFC CONSULTING LIMITED
Description of Document	:	Article 5 General Agreement
Property Description	:	Not Applicable
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	PFC CONSULTING LIMITED
Second Party	:	Not Applicable
Stamp Duty Paid By	:	PFC CONSULTING LIMITED
Stamp Duty Amount(Rs.)	:	500 (Five Hundred only)

सत्यमेव जयते

₹500₹500₹500₹500₹500

₹500

Please write or type below this line IN-DL58948920947629X

This Stamp Paper Forms Part of enclosed Share Purchase Agreement executed between **PFC CONSULTING LIMITED, ANANTAPUR II REZ TRANSMISSION LIMITED** and **RESONIA LIMITED (FORMERLY KNOWN AS STERLITE GRID 32 LIMITED)**.

PFC CONSULTING LIMITED NEW DELHI

ANANTAPUR II REZ TRANSMISSION NEW DELHI

RESONIA LIMITED

Statutory Alert:
1. The authenticity of this Stamp certificate should be verified at www.shcilestamp.com or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

499

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

₹500

e-Stamp

Certificate No.	:	IN-DL58947933104234X
Certificate Issued Date	:	27-Mar-2025 05:31 PM
Account Reference	:	IMPACC (IV)/ dl716803/ DELHI/ DL-DLH
Unique Doc. Reference	:	SUBIN-DLDL716803590946938029220X
Purchased by	:	PFC CONSULTING LIMITED
Description of Document	:	Article 5 General Agreement
Property Description	:	Not Applicable
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	PFC CONSULTING LIMITED
Second Party	:	Not Applicable
Stamp Duty Paid By	:	PFC CONSULTING LIMITED
Stamp Duty Amount(Rs.)	:	500 (Five Hundred only)

सत्यमेव जयते

Please write or type below this line IN-DL58947933104234X

This Stamp Paper Forms Part of enclosed Share Purchase Agreement executed between **PFC CONSULTING LIMITED, ANANTAPUR II REZ TRANSMISSION LIMITED** and **RESONIA LIMITED (FORMERLY KNOWN AS STERLITE GRID 32 LIMITED)**.

PFC CONSULTING LIMITED NEW DELHI

ANANTAPUR II REZ TRANSMISSION LIMITED NEW DELHI

RESONIA LIMITED

Statutory Alert:
1. The authenticity of this Stamp certificate should be verified at www.shcilestamp.com or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

₹500₹500₹500₹500

500

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

सत्यमेव जयते

e-Stamp

Certificate No.	:	IN-DL58952729913003X
Certificate Issued Date	:	27-Mar-2025 05:35 PM
Account Reference	:	IMPACC (IV)/ dl7 6803/ DELHI/ DL-DLH
Unique Doc. Reference	:	SUBIN-DLDL7168035910277585130 3X
Purchased by	:	PFC CONSULTING LIMITED
Description of Document	:	Article 5 General Agreement
Property Description	:	Not Applicable
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	PFC CONSULTING LIMITED
Second Party	:	Not Applicable
Stamp Duty Paid By	:	PFC CONSULTING LIMITED
Stamp Duty Amount(Rs.)	:	200 (Two Hundred only)

सत्यमेव जयते

₹200₹200₹200₹200

Please write or type below this line IN-DL58952729913003X

This Stamp Paper Forms Part of enclosed Share Purchase Agreement executed between **PFC CONSULTING LIMITED**, **ANANTAPUR II REZ TRANSMISSION LIMITED** and **RESONIA LIMITED (FORMERLY KNOWN AS STERLITE GRID 32 LIMITED)**.

PFC CONSULTING LIMITED NEW DELHI

ANANTAPUR II REZ TRANSMISSION LIMITED NEW DELHI

RESONIA LIMITED

Statutory Alert:

1. The authenticity of this Stamp certificate should be verified at www.shcilestamp.com or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

SHARE PURCHASE AGREEMENT

This **SHARE PURCHASE AGREEMENT** ('Agreement') made on 31st day of March, 2025 at New Delhi by and between:

PFC CONSULTING LIMITED (a wholly owned subsidiary of Power Finance Corporation Ltd.), a company incorporated under the Companies Act, 1956, with CIN No. U74140DL2008GOI175858, having its registered office at First Floor, "Urjanidhi",1 Barakhamba Lane, Connaught Place, New Delhi 110001, (hereinafter referred to as **"PFCCL"**, which expression shall, unless it be repugnant to the context or meaning thereof, be deemed to mean and include its successors and permitted assigns) of the **FIRST PART;**

AND

ANANTAPUR II REZ TRANSMISSION LIMITED, a company incorporated under the Companies Act, 2013, with CIN no. U42201DL2025GOI440759 having its registered office at First Floor, "Urjanidhi", 1 Barakhamba Lane, Connaught Place, New Delhi 110001, (hereinafter referred to as **"Company"** which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors and permitted assigns) of the **SECOND PART;**

AND

RESONIA LIMITED (formerly known as Sterlite Grid 32 Limited), a company incorporated under the Companies Act, 2013 with CIN No. U40106HR2022PLC103798 having its registered office DLF, Cyber Park, Tower-B 9th Floor Udyog Vihar, Phase III, Sector-20, Gurgaon, Haryana, India, 122008 (hereinafter referred to as **"Selected Bidder"** which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors and permitted assigns) of the **THIRD PART.**

WHEREAS:

A. Ministry of Power (MoP) vide Gazette Notification No. CG-DL-E-13092024-257122 dated 12.09.2024 has notified PFC Consulting Limited (PFCCL) to be the Bid Process Coordinator (BPC) for the purpose of selection of Bidder as Transmission Service Provider (TSP) to establish Inter-State transmission system for "Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)" through tariff based competitive bidding process (hereinafter referred to as the "Project")

B. In accordance with the Bidding Guidelines, PFCCL had initiated a Bid Process through issuance of RFP documents for selecting a Successful Bidder to build, own, operate and transfer the Project in accordance with and on the terms and conditions mentioned in the RFP Project Documents (as defined hereinafter).

C. PFCCL has incorporated the Company and PFCCL along with the Nominees hold One Hundred per cent (100 %) of total issued and paid up equity share capital of the Company.

PFC CONSULTING LIMITED NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

RESONIA LIMITED RESONIA

D. PFCCL has initiated the development of the Project and has obtained survey report, certain clearances, consents and permits as specified in the RFP regarding the Project.

E. Pursuant to the said Bid Process, Resonia Limited (formerly known as Sterlite Grid 32 Limited) has been identified as the Selected Bidder vide Letter of Intent dated 19.02.2025 issued by the PFCCL in favor of the Selected Bidder.

F. As envisaged in the RFP, the Shares Seller (as defined hereinafter) has agreed to sell the Sale Shares (as defined hereinafter) to the Selected Bidder and the Selected Bidder has agreed to purchase the Sale Shares from the Shares Seller, subject to and on the terms and conditions set forth in this Agreement.

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL COVENANTS AND AGREEMENTS SET FORTH IN THIS AGREEMENT AND FOR OTHER GOOD AND VALUABLE CONSIDERATION, THE PARTIES HEREBY AGREE AS FOLLOWS:

1. DEFINITIONS

1.1 Capitalised terms in this Agreement, unless defined in this Agreement shall, in so far as the context admits, have the same meaning in this Agreement as has been ascribed to them in the Transmission Service Agreement.

1.2 Additionally, the following terms shall have the meaning hereinafter respectively assigned to them herein below:

(i) **"Acquisition Price"** shall mean **Rs. 19,23,35,520/- (Rupees Nineteen Crores Twenty Three Lakh Thirty Five Thousand Five Hundred Twenty only)**, which is the aggregate consideration payable by the Selected Bidder towards purchase of the **Sale Shares at par** along with assets and liabilities of the Company as on the Closing Date subject to adjustment as per the audited accounts of the Company as on the Closing Date;

(ii) **"Agreement"** or **"the Agreement"** or **"this Agreement"** shall mean this Share Purchase Agreement and shall include the recitals and/or annexures attached hereto, and the contracts, certificates, disclosures and other documents to be executed and delivered pursuant hereto, if any, and any amendments made to this Agreement by Parties in writing;

(iii) **"Bid Process"** shall mean the competitive bidding process initiated by the BPC, by issuance of RFP Documents for selecting a Successful Bidder to build, own, operate and transfer the Project in accordance with and on the terms and conditions mentioned in the RFP Project Documents;

(iv) **"Board"** shall mean the board of directors of the Company

PFC CONSULTING LIMITED NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

RESONIA LIMITED RESONIA

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(v) **"Closing Date"** shall mean a mutually agreed date between the Parties falling within the period as mentioned in Clause 2.15.2 of RFP or on failure of such mutual agreement between the Parties shall be the date falling on the last date of such period;

(vi) **"CTU"** or **"Central Transmission Utility of India Limited"** shall have same meaning as defined in the Electricity Act, 2003;

(vii) **"Encumbrance"** shall mean any mortgage, pledge, lien, charge, security assignment, hypothecation, trust, encumbrance or any other agreement having the effect of creating security interest;

(viii) **"Letter of Intent"** shall have the meaning ascribed thereto under the RFP;

(ix) **"Nominees"** shall mean the Persons, who are named in Annexure A, holding the Sale Shares as nominees of PFCCL.

(x) **"Party"** shall mean PFCCL, Company and the Selected Bidder, referred to individually, and **"Parties"** shall mean PFCCL, Company and the Selected Bidder collectively referred to, as relevant;

(xi) **"Person"** shall include an individual, an association, a corporation, a partnership, a joint venture, a trust, an unincorporated organisation, a joint stock company or other entity or organisation, including a government or political subdivision, or an agency or instrumentality thereof, and/or any other legal entity;

(xii) **"RfP Project Documents"** shall mean the following documents, referred to collectively:

a) Transmission Services Agreement;
b) this Agreement; and
c) Any other agreement(s) as may be required.

(xiii) **"Representations and Warranties"** shall mean the representations and warranties mentioned in **Clause 4** hereto;

(xiv) **"Sale Shares"** shall mean **10,000 (Ten Thousand)** Shares, representing 100 percent of the total issued, subscribed and fully paid-up equity share capital of the Company held by the Shares Seller and Nominees as more particularly described in Annexure A attached hereto;

(xv) **"Shares"** shall mean the fully paid-up equity shares of Company, of face value Rs. 10 each;

(xvi) **"Shares Seller"** shall mean PFCCL;

PFC CONSULTING LIMITED NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI ARTL

RESONIA LIMITED RESONIA

(xvii) **"Transmission Services Agreement"** or **"TSA"** means the agreement titled 'Transmission Services Agreement' dated 31st March, 2025 entered into between Central Transmission Utility of India Limited (CTUIL) and the Anantapur II REZ Transmission Limited (TSP) pursuant to which the TSP shall build, own, operate and transfer the Project and make available the assets of the Project to Central Transmission Utility of India Limited on a commercial basis, as may be amended from time to time;

(xviii) **Transmission Service Provider" or "TSP"** shall mean Anantapur II REZ Transmission Limited which has executed the Transmission Service Agreement and which shall be acquired by the Selected Bidder.

1.3 Interpretation Clause

Unless the context otherwise requires, the provisions of the TSA relating to the interpretation of the TSA shall apply to this Agreement as if they were set out in full in this Agreement and to this end are incorporated herein by reference.

2. TRANSFER OF SHARES

2.1 Subject to the terms and conditions of this Agreement, the Shares Seller agrees to sell and transfer to the Selected Bidder and the Selected Bidder hereby agrees to purchase from the Shares Seller, the Sale Shares of the Company free from Encumbrances with rights and benefits attached thereto in consideration of the Acquisition Price and the covenants, undertakings and the agreements of the Selected Bidder contained in this Agreement.

2.2 The Shares Seller hereby undertakes to cause the Nominees to transfer part of the Sale Shares held by them as Nominees of the Shares Seller to the Selected Bidder and execute any documents required to deliver good title to the Sale Shares to the Selected Bidder.

3. CLOSING

3.1 Prior to the Closing Date, the Selected Bidder shall provide to the Shares Seller, valid share transfer forms ("Share Transfer Forms") duly stamped with requisite amount of stamp duty payable on the transfer of Sale Shares.

3.2 On the Closing Date, the Shares Seller shall hand over to the Selected Bidder or its authorised representative, the original share certificates representing the Sale Shares ("Sale Share Certificates") along with the Share Transfer Forms duly executed by the Shares Seller and the Nominees in favour of the Selected Bidder, simultaneously against the Selected Bidder handing over to the Shares Seller demand drafts drawn in favour of the Shares Seller for the Acquisition Price payable to it.

PFC CONSULTING LTD. NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI ARTL

RESONIA LIMITED RESONIA

Provided that prior to the handing over of the Sale Share Certificates to the Selected Bidder as mentioned above, the Selected Bidder shall provide satisfactory evidence to PFCCL that on or before the Closing Date, the Selected Bidder has furnished the Performance Bank Guarantee to Central Transmission Utility of India Limitedand is in a position to comply with all other requirements of Clause 2.15.2 of the RFP.

3.3 The Selected Bidder shall immediately upon receiving the Sale Share Certificates and the Share Transfer Forms, duly execute the Share Transfer Forms and duly lodge the Share Transfer Forms and the Sale Share Certificates with the Company. The Selected Bidder may also propose the names of its nominees to be appointed on the Board of the Company and the address within the jurisdiction of the Registrar of Companies NCT of Delhi and Haryana, which would be the new registered office of the Company. The Company shall, upon receipt of the said documents from the Selected Bidder, do the following:

(i) on the Closing Date convene a meeting of the Board, wherein the Board shall pass the following necessary resolutions:

(a) approving the transfer of the Shares constituting the Sale Shares from the Shares Seller and the Nominees to the name of the **Resonia Limited** (formerly known as Sterlite Grid 32 Limited) **and its nominees as detailed hereunder and transfer of all assets and liabilities of the Company as on Closing Date;**

Sl. No.	Name of Transferor	Name of transferee	No. of Equity Shares
1.	PFC Consulting Limited	Resonia Limited (formerly known as Sterlite Grid 32 Limited) ("Resonia")	9,400
2.	Mr. Rakesh Mohan	Mr. Ashok Ganesan (as nominee of Resonia)	100
3.	Mr. Neeraj Singh	Ms. Shilpi Rungta (as nominee of Resonia)	100
4.	Mr. Sanjay Kumar Nayak	Ms. Upasna (as nominee of Resonia)	100
5.	Mr. Sachin Shukla	Ms. Nikita Gupta (as nominee of Resonia)	100
6.	Mr. Naveen Kumar	Mr. Pradeep Sand (as nominee of Resonia)	100
7.	Mr. Rishab Jain	Mr. Pratik Modi (as nominee of Resonia)	100
	Total		**10,000**

(b) approving Resonia Limited (formerly known as Sterlite Grid 32 Limited) and its nominees as a member of the Company and entering the name of the Resonia Limited (formerly known as Sterlite Grid 32 Limited) and its nominees in the register of members.

(c) changing the address of the registered office of the Company to YC Co Working Space, 3rd Floor, Plot No. 94 Dwarka Sec. 13, Opp. Metro, Near Radisson Blu, South West Delhi, New Delhi-110075, the new address, within the jurisdiction of the Registrar of Companies NCT of Delhi and Haryana, as provided by the Selected Bidder.

(d) appointing the Directors of the Selected Bidder on the Board and accepting the resignations of the other existing Directors on the Board and the Chair of the meeting which was taken by one of the existing Directors shall be vacated and appointment of a new Chairman who shall be one of the newly appointed Director, for the rest of the meeting.

Mr. Shri Prakash Singh (DIN: 10929893),

Mr. Sandip Maity (DIN: 10862280) and

Ms. Upma Meena (DIN: 10240282)

Pursuant to the acceptance of resignation of the existing Directors and appointment of new Chairman, the newly constituted Board of Directors shall hold the meeting and pass the following resolution:

(e) terminating all the authorizations granted regarding the business and/or operations of the Company or the operations of the bank accounts of the Company, with prospective effect; and

(f) acknowledging and accepting the terms and conditions as contained in the executed copies of the RFP Project Documents and to abide by the provisions contained therein.

(ii) Enter the name of the **Resonia Limited** (formerly known as Sterlite Grid 32 Limited) **and its nominees** as the legal and beneficial owner of the Sale Shares, free of all Encumbrances, in the register of members of the Company;

(iii) Make the necessary endorsements on the Sale Share Certificates, indicating the name of the **Resonia Limited** (formerly known as Sterlite Grid 32 Limited) **and its nominees** as the legal and beneficial owner of the Sale Shares evidenced there under;

PFC CONSULTING LIMITED NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

RESONIA LIMITED RESONIA

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(iv) Return the original Sale Share Certificates, duly endorsed in the name of the **Resonia Limited** (formerly known as Sterlite Grid 32 Limited) **and its nominees** , to **Resonia Limited** (formerly known as Sterlite Grid 32 Limited) **and its nominees** , as the case may be or its authorised representative;

(v) Handover all the statutory registers and records, if any, of the Company to **Resonia Limited** (formerly known as Sterlite Grid 32 Limited), the Selected Bidder.

(vi) Handover certified true copies of the Board resolution passed by the Company as per (i)(a) to (i)(e) of Clause 3.3 (i) to Central Transmission Utility of India Limited.

3.4 The Parties to this Agreement agree to take all measures that may be required to ensure that all the events contemplated in the **Clauses 3.1 to 3.3** above on the Closing Date are completed on the same day.

Notwithstanding the provisions of **Clause 3.3** hereto, all proceedings to be taken and all documents to be executed and delivered by the Parties at the Closing Date shall be deemed to have been taken and executed simultaneously and no proceedings shall be deemed to have been taken nor documents executed or delivered until all have been taken, executed and delivered.

3.5 The Selected Bidder hereby acknowledges and agrees that after the date of acquisition of one hundred percent (100%) of the equity shareholding of the Company, by the Selected Bidder as per Clause 3.3, (a) the authority, rights and obligations of the PFCCL/Company in respect of the Bid Process shall forthwith cease and any actions to be taken thereafter regarding the Bid Process will be undertaken by Central Transmission Utility of India Limited themselves or through their any other authorized representative(s), (b) all rights and obligations of the PFCCL/Company shall be of the Selected Bidder and (c) any decisions taken by the PFCCL/Company prior to the date of its acquisition by the Selected Bidder shall continue to be binding on the Selected Bidder. The Parties hereby agree that this provision shall survive the termination of this Agreement.

3.6 This agreement shall be effective from the date of its signing by the Parties and shall remain in force until all the obligations of the respective Parties under Clause 3.3 hereto are fulfilled.

4. REPRESENTATIONS AND WARRANTIES

4.1 The Selected Bidder hereby represents and warrants to the Shares Seller that:

4.1.1 The Selected Bidder has full legal right, power and authority to enter into, execute and deliver this Agreement and to perform the obligations, undertakings and transactions set forth herein, and this Agreement has been duly and validly executed and delivered by the Selected Bidder and constitutes its legal, valid and binding obligations, enforceable against it in accordance with its terms;

PFC CONSULTING LIMITED NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI ARTL

RESONIA LIMITED RESONIA

4.1.2 The execution, delivery and performance of this Agreement by the Selected Bidder (i) will not violate or contravene any provision of the Memorandum of Association or Articles of the Selected Bidder, (ii) will not violate or contravene any law, statute, rule, regulation, licensing requirement, order, writ, injunction or decree of any court, governmental instrumentality or other regulatory, governmental or public body, agency or authority by which the Selected Bidder are bound or by which any of its and/or their properties or assets are bound, and (iii) except to the extent that the same have been duly and properly completed or obtained, will not require any filing with, or permit, consent or approval of or license from, or the giving of any notice to, any court, governmental instrumentality or other regulatory, governmental or public body, agency or authority, joint venture party, or any other entity or person whatsoever; and

4.1.3 The Selected Bidder is not restricted in any manner whatsoever, including without limitation, on account of any judicial or governmental order, action or proceeding, or any contractual obligation assumed by the Selected Bidder, from purchasing the Sale Shares from the Shares Seller in the manner provided for in this Agreement.

4.2 The Shares Seller hereby represents and warrants to the Selected Bidder that;

4.2.1 The Shares Seller and the Nominees are the legal and beneficial owners of the Sale Shares, free and clear of any Encumbrance and the delivery to the Selected Bidder of the Sale Shares pursuant to the provisions of this Agreement will transfer to the Selected Bidder a good title to the Sale Shares.

4.2.2 The Shares Seller has full legal right, power and authority to enter into, execute and deliver this Agreement and to perform the obligations, undertakings and transactions set forth herein. The execution, delivery and performance of this Agreement will not violate the Memorandum and Articles of Association of the Shares Seller or contravene any contract by which it is bound.

4.2.3 The Shares Seller has obtained requisite authorizations to sell and transfer the Sale Shares to the Selected Bidder. The Shares Seller also represent that it is not prevented from transferring and selling the Sale Shares. Also, to the best of its knowledge, the Sale Shares are not the subject matter of any claim or pending proceeding or threatened by any legal proceeding made by any third party.

4.3 Except as specified in Clause 4.2, above the Shares Seller shall not be deemed to have, made any representation or warranty whatsoever, whether express or implied, in relation to the Sale Shares or Company, including but not limited to any implied warranty or representation as to the business or affairs of the Company.

PFC CONSULTING LIMITED NEW DELHI

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

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4.4 The Representations and Warranties are given as at the date of this Agreement except that where a Representation and Warranty is expressed to be made as at another date, the Representation and Warranty is given with respect to that date only.

4.5 Each Representation and Warranty is to be construed independently of the others and is not limited by reference to any other Warranty. The Representations, Warranties and undertakings contained in this **Clause 4** hereto or in any document delivered pursuant to or in connection with this Agreement are continuing in nature and shall survive the Closing Date for one (1) year.

4.6 The Parties represent to each other that all Representations and Warranties provided herein by the respective Party shall be true as of Closing Date.

5. OBLIGATIONS OF THE SELECTED BIDDER

The Selected Bidder agrees that the Shares Seller shall not be liable in any manner, nor shall it assume any responsibility or liability whatsoever, in respect of the business of the Company and its operations or activities, arising after Closing Date, to any Person or any authority, central, state, local or municipal or otherwise and the same shall be the sole responsibility of the Selected Bidder.

6. MISCELLANEOUS

6.1 NOTICES

a) All notices to be given under this Agreement shall be in writing and in the English language.

b) All notices must be delivered personally or by registered or speed post or by recognised courier to the addresses below:

Selected Bidder (Lead Member in case of Consortium)	**Resonia Limited** (formerly known as Sterlite Grid 32 Limited) DLF, Cyber Park, Tower-B 9th Floor Udyog Vihar, Phase III, Sector-20, Gurgaon, Haryana, India, 122008
Name of the Holding Company of the SPV	**PFC Consulting Limited** First Floor, "Urjanidhi", 1 Barakhamba Lane, Connaught Place, New Delhi- 110001
Company (Before Closing Date)	**Project In-charge** **Anantapur II REZ Transmission Limited** First Floor, "Urjanidhi", 1 Barakhamba Lane, Connaught Place, New Delhi- 110001

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ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

RESONIA LIMITED

Company (After Closing Date)	**Anantapur II REZ Transmission Limited** YC Co Working Space, 3rd Floor, Plot No. 94 Dwarka Sec. 13, Opp. Metro, Near Radisson Blu, South West Delhi, New Delhi-110075

c) Any Party may by notice of at least fifteen (15) days to the other Parties change the address and / or addresses to which such notices and communications to it are to be delivered or mailed.

6.2 RESOLUTION OF DISPUTES

6.2.1 If any dispute arises between the Parties, in connection with the validity, interpretation, implementation or alleged breach of any provision of this Agreement ("Dispute"), the disputing Parties hereto shall endeavour to settle such Dispute amicably. The attempt to bring about an amicable settlement shall be considered to have failed if not resolved within 60 days from the date of the Dispute.

6.2.2 If the Parties are unable to amicably settle the Dispute in accordance with Clause 6.2.1 within the period specified therein, any of the Parties shall be entitled to within 30 days after expiry of the aforesaid period, refer the Dispute to the Company Secretary of PFCCL and Chief Executive/ Managing Director of the Selected Bidder for resolution of the said Dispute. The attempt to bring about such resolution shall be considered to have failed if not resolved within 30 days from the date of receipt of a written notification in this regard.

6.2.3 In the event the Dispute is not settled in accordance with Clause 6.2.2 above, any Party to the Dispute shall be entitled to serve a notice invoking this Clause and making a reference to a sole arbitrator. If the Parties to the Dispute cannot agree as to the appointment of the sole arbitrator within 30 days of receipt of the notice of the Party making the reference, then the Shares Seller along with the Company shall appoint one arbitrator and the Selected Bidder shall appoint one arbitrator and the two arbitrators, so appointed shall appoint a third arbitrator. However, after the Closing Date, in such an event the Shares Seller shall appoint one arbitrator and the Selected Bidder along with the Company shall appoint one arbitrator and the two arbitrators, so appointed shall appoint the third arbitrator.

6.2.4 The place of the arbitration shall be New Delhi. The Arbitration proceedings shall be governed by the Arbitration and Conciliation Act, 1996.

6.2.5 The proceedings of arbitration shall be in English language.

6.2.6 The arbitrator's award shall be substantiated in writing. The arbitrators shall also decide on the costs of the arbitration proceedings. In case the arbitrators have not

decided on the costs of the arbitration proceedings, each Party to the Dispute shall bear its own costs, in relation to the arbitration proceedings.

6.3 AUTHORISED PERSON

For the purposes of this Agreement, the Selected Bidder is severally represented by **Mr. Arun Sharma, Whole- time Director & CEO, Mr. Ashok Amrutlal Gandhi, Chief Financial Officer, Ms. Upasna Company Secretary and/or Mr. Amarendranath Tatimakula Reddy, and/or Mr. Ashok Ganesan, and/or, and/or Mr. Prashant Sinha, and/or Mr. Tushar Chhabra, and/or Mr. Chandan Dutt, the Authorized Representatives,** pursuant to an authorization granted to the above mentioned authorized representatives through necessary Board resolutions. Further, the above mentioned authorized representatives are also severally authorized by such resolutions to take any decision, which may be required to be taken, do all acts and execute all documents, which are or may be required by the Selected Bidder for the proper and effective fulfillment of the rights and obligations under this Agreement. Any action taken or document executed by the above mentioned authorized representatives, shall be deemed to be acts done or documents executed by the Selected Bidder and shall be binding on the Selected Bidder.

6.4 RESERVATION OF RIGHTS

No forbearance, indulgence or relaxation or inaction by any Party at any time to require performance of any of the provisions of this Agreement shall in any way affect, diminish or prejudice the right of such Party to require performance of that provision, and any waiver or acquiescence by any Party of any breach of any of the provisions of this Agreement shall not be construed as a waiver or acquiescence of any continuing or succeeding breach of such provisions, a waiver of any right under or arising out of this Agreement or acquiescence to or recognition of rights other than that expressly stipulated in this Agreement.

6.5 CUMULATIVE RIGHTS

All remedies of either Party under this Agreement whether provided herein or conferred by statute, civil law, common law, custom or trade usage, are cumulative and not alternative and may be enforced successively or concurrently.

6.6 PARTIAL INVALIDITY

If any provision of this Agreement or the application thereof to any person or circumstance shall be invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to persons or circumstances other than those as to which it is held invalid or unenforceable shall not be affected thereby, and each provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law. Any invalid or unenforceable provision of this Agreement shall be

replaced with a provision, which is valid and enforceable and most nearly reflects the original intent of the unenforceable provision.

6.7 TERMINATION

If (i) the Closing does not occur on the Closing Date for any reason whatsoever, or (ii) the Letter of Intent is withdrawn or terminated for any reason, or (iii) due to termination of the TSA by Central Transmission Utility of India Limited in accordance with Article 3.3.2 or Article 13 of the TSA thereof, PFCCL shall have a right to terminate this Agreement forthwith by giving a written notice to the other Parties hereto.

6.8 AMENDMENTS

No modification or amendment of this Agreement and no waiver of any of the terms or conditions hereof shall be valid or binding unless made in writing and duly executed by all the Parties.

6.9 ASSIGNMENT

This Agreement and the rights and liabilities hereunder shall bind and inure to the benefit of the respective successors of the Parties hereto, but no Party hereto shall assign or transfer its rights and liabilities hereunder to any other Person without the prior written consent of the other Parties, which will not be unreasonably withheld.

6.10 ENTIRE AGREEMENT

This Agreement constitutes the entire Agreement between the Parties with respect to the subject matter herein and supersedes and cancels any prior oral or written agreement, representation, understanding, arrangement, communication or expression of intent relating to the subject matter of this Agreement.

6.11 COSTS

Each of the Parties hereto shall pay their own costs and expenses relating to the negotiation, preparation and execution of this Agreement and the transactions contemplated by this Agreement.

The Selected Bidder shall be liable to bear and pay the stamp duty and other costs in respect of this Agreement and the Share Transfer Forms.

6.12 RELATIONSHIP

None of the provisions of this Agreement shall be deemed to constitute a partnership between the Parties hereto and no Party shall have any authority to bind the other Party otherwise than under this Agreement or shall be deemed to be the agent of the other in any way.

PFC CONSULTING LIMITED NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

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6.13 GOVERNING LAW AND JURISDICTION

This Agreement shall be governed by and construed in accordance with the laws of India and shall be subject to the exclusive jurisdiction of the courts of Delhi.

6.14 COUNTERPARTS

This Agreement may be executed in counterparts by the Parties and each fully executed counterpart shall be deemed to be original.

6.15 CONFIDENTIALITY

The Parties undertake to hold in confidence and not to disclose the terms and conditions of the transaction contemplated hereby to third parties, except:

(a) to their professional advisors;
(b) to their officers, employees, agents or representatives, who need to have access to such information for the proper performance of their activities;
(c) disclosures required under Law;
without the prior written consent of the other Parties.

Provided that Central Transmission Utility of India Limited and PFCCL may at any time, disclose the terms and conditions of transactions contemplated hereby to any person, to the extent stipulated under the law or the Bidding Guidelines.

6.16 INDEMNIFICATION

- The Parties hereby agree that transfer of Sale Shares to the Selected Bidder shall vest all the rights, privileges, licenses, responsibilities, liabilities and other obligations pertaining to the Company in the Selected Bidder.

- The Selected Bidder hereby agrees that the Selected Bidder shall not be entitled to any claims or initiate any legal proceedings, by itself or through the Transmission Service Provider against the Share Sellers, its directors, officers, employees and the subscribers including the members of any committees appointed by them in respect of any actions or decisions taken by any of them up to the Closing Date in furtherance of the Project referred to in recital A of this Agreement.

- Further, the Selected Bidder hereby indemnifies and holds harmless at all times the Share Seller against all losses, damages, charges, and expenses which the Share Seller may sustain or incur towards contractual obligations with respect to the contracts awarded by the Share Seller or any other liability arising with regard to any action/ activity undertaken by the Share Seller for and on behalf of the Company in furtherance of the Project referred to above or otherwise concerning the Company.

PFC CONSULTING LIMITED NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

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All such actions shall be defended by the Selected Bidder either itself or through the TSP at its own cost.

- The Parties hereby agree that the provisions of this clause shall survive the termination of this Agreement.

IN WITNESS WHEREOF, THE PARTIES HERETO HAVE CAUSED THIS AGREEMENT TO BE DULY EXECUTED AND DELIVERED AS OF THE DAY AND YEAR FIRST ABOVE WRITTEN

SIGNED AND DELIVERED
BY THE WITHIN NAMED **"PFCCL" PFC CONSULTING LIMITED**
BY THE HAND OF **SHRI SACHIN ARORA, COMPANY SECRETARY**

PFC CONSULTING LIMITED NEW DELHI

PURSUANT TO THE RESOLUTION PASSED BY THE BOARD OF DIRECTORS ON 21ST FEBRUARY, 2025

IN THE PRESENCE OF: Gyanesh Nayak EA-PFCCL
WITNESS:
NAME, SIGNATURE, DESIGNATION AND ADDRESS:

SIGNED AND DELIVERED
BY THE WITHIN NAMED **"ANANTAPUR II REZ TRANSMISSION LIMITED"**
BY THE HAND OF **SHRI SANJAY KR. NAYAK, DIRECTOR**

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

PURSUANT TO THE RESOLUTION PASSED BY THE BOARD OF DIRECTORS ON 17TH FEBRUARY, 2025

IN THE PRESENCE OF: Naveen Tiwari AM-PFCCL
WITNESS:
NAME, SIGNATURE, DESIGNATION AND ADDRESS:

RESONIA LIMITED

SIGNED AND DELIVERED
BY THE WITHIN NAMED **"RESONIA LIMITED (formerly known as Sterlite Grid 32 Limited)"**
BY THE HAND OF **SHRI AMARENDRANATH TATIMAKULA REDDY, AUTHORISED REPRESENTATIVE**

PFC CONSULTING LIMITED NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI ARTL

RESONIA LIMITED RESONIA

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PURSUANT TO THE RESOLUTION PASSED BY THE BOARD OF DIRECTORS ON MARCH 25, 2025

IN THE PRESENCE OF:

WITNESS:

NAME, SIGNATURE, DESIGNATION AND ADDRESS:

Mahendra kumar Sahu
Chief Manager
31.03.25

PFC CONSULTING LIMITED NEW DELHI PFCCL

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI ATTL

RESONIA LIMITED RESONIA

ANNEXURE A

DESCRIPTION OF THE SALE SHARES

S. NO.	NAME OF THE SHAREHOLDER	NUMBER OF EQUITY SHARES HELD	PERCENTAGE OF THE TOTAL PAID UP EQUITY CAPITAL
1.	PFC Consulting Limited	9400	94 %
2.	Shri Rakesh Mohan	100	1 %
3.	Shri Neeraj Singh	100	1 %
4.	Shri Sanjay Kumar Nayak	100	1 %
5.	Shri Sachin Shukla	100	1 %
6.	Shri Naveen Kumar	100	1 %
7.	Shri Rishab Jain	100	1 %
	Total	**10,000**	**100%**

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TRANSMISSION SERVICE AGREEMENT

FOR

DEVELOPMENT AND OPERATION OF INTER-STATE TRANSMISSION SYSTEM

FOR TRANSMISSION OF ELECTRICITY THROUGH TARIFF BASED COMPETITIVE BIDDING FOR

TRANSMISSION SYSTEM FOR INTEGRATION OF ANANTAPUR-II REZ - PHASE-I (FOR 4.5 GW)

BETWEEN

CENTRAL TRANSMISSION UTILITY OF INDIA LIMITED

(NODAL AGENCY)

AND

ANANTAPUR II REZ TRANSMISSION LIMITED

31th March, 2025

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

TC

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Bond

Indian-Non Judicial Stamp
Haryana Government

Date : 31/03/2025

Certificate No. G0312025C3527

GRN No. 130151807

Stamp Duty Paid : ₹ 500
(Rs. Only)

Penalty : ₹ 0
(Rs. Zero Only)

Deponent

Name : Central Transmission utility of india Ltd

H.No/Floor : 2 Sector/Ward : 29 Landmark : Na

City/Village : Gurugram District : Gurugram State : Haryana

Phone : 96******36

Purpose : ARTICLE 5 GENERAL AGREEMENT to be submitted at Concerned office

The authenticity of this document can be verified by scanning this QrCode Through smart phone or on the website https://egrashry.nic.in

THIS STAMP PAPER FORMS PART OF THIS TRANSMISSION SERVICE AGREEMENT DATED 31ST MARCH 2025.

ANANTPURAM REZ TRANSMISSION LTD. NEW DELHI

TC

Bond

Indian-Non Judicial Stamp
Haryana Government
Transmission Service Agreement

Date :28/03/2025

520

Certificate No. G0282025C67

GRN No. 130060394

Stamp Duty Paid : ₹ 101
(Rs. Only)

Penalty :₹ 0
(Rs. Zero Only)

Deponent

Name: Central Transmission utility of India ltd
H.No/Floor : 2 Sector/Ward : 29 Landmark : Na
City/Village : Gurugram District : Gurugram State : Haryana
Phone : 98******10

Purpose : ARTICLE 5 GENERAL AGREEMENT **to be submitted at Concerned office**

THIS TRANSMISISON SERVICE AGREEMENT (hereinafter referred to as "TSA" or "Agreement" or "the Agreement" or "this Agreement") is made on the 31 [Insert day] of ..03... [Insert month] of Two Thousand and Twenty Five.

BETWEEN:

The **Central Transmission Utility of India Limited,** "Saudamini",1st Floor, Plot No. 2, Sector-29, Gurugram-122001, Haryana acting as a Nodal Agency (referred to as the "Nodal Agency"), which expression shall unless repugnant to the context or meaning thereof include its successors, and permitted assigns) as Party of the one part;

AND

ANANTAPUR II REZ TRANSMISSION LIMITED incorporated under the Companies Act, 1956/ Companies Act, 2013 (as the case may be), having its registered office at **Urjanidhi, First Floor, Barakhamba Lane- 1, Connaught Place, New Delhi, Central Delhi- 110001, Delhi** (herein after referred to as "Transmission Service Provider" or "TSP" or "ISTS Licensee", which expression shall unless repugnant to the context or meaning thereof include its successors, and permitted assigns) as Party of the other part;

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

("Nodal Agency" and "TSP" are individually referred to as "Party" and collectively as the "Parties")

AND WHEREAS:

A) In accordance with the Bidding Guidelines, the Bid Process Coordinator (hereinafter referred to as BPC) had initiated a competitive e-reverse bidding process through issue of RFP for selecting a Successful Bidder to build, own, operate and transfer the Project comprising of the Elements mentioned in Schedule 1 (hereinafter referred to as the Project)

B) Pursuant to the said e-reverse bidding process, the BPC has identified the Successful Bidder, who will be responsible to set up the Project on build, own, operate and transfer basis to provide Transmission Service in accordance with the terms of this Agreement and the Transmission License.

C) The Selected Bidder have submitted the Contract Performance Guarantee and acquired one hundred percent (100%) of the equity shareholding of **ANANTAPUR II REZ TRANSMISSION LIMITED**, along with all its related assets and liabilities in terms of the provisions of the Share Purchase Agreement.

D) The TSP has agreed to make an application for a Transmission License to the Commission for setting up the Project on build, own, operate and transfer basis.

E) The TSP has further agreed to make an application to the Commission for the adoption of the Transmission Charges under Section 63 of the Electricity Act, 2003, along with a certification from the Bid Evaluation Committee in accordance with the Bidding Guidelines issued by Ministry of Power, Government of India.

F) The TSP has agreed to execute the agreement(s) required, if any, under Sharing Regulations within fifteen (15) days from the date of grant of Transmission License from the Commission.

G) The TSP agrees to the terms and conditions laid down under Sharing Regulations, for making available the ISTS and charge the Transmission Charges in accordance with the terms and conditions of Sharing Regulations.

H) The billing, collection and disbursement of the Transmission Charges by the CTU to the ISTS Licensee shall be governed as per Sharing Regulations.

I) The terms and conditions stipulated in the Transmission License issued by the Commission to the TSP shall be applicable to this Agreement and the TSP agrees to comply with these terms and conditions. In case of inconsistency between the Transmission License terms & conditions and the conditions of this Agreement, the conditions stipulated in the Transmission License granted by the Commission shall prevail.

NOW, THEREFORE, IN CONSIDERATION OF THE PREMISES AND MUTUAL AGREEMENTS, COVENANTS AND CONDITIONS SET FORTH HEREIN, IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES HERETO AS FOLLOWS:

ARTICLE: 1

1. DEFINITIONS AND INTERPRETATIONS

1.1 Definitions:

1.1.1 The words / expressions used in this Agreement, unless as defined below or repugnant to the context, shall have the same meaning as assigned to them by the Electricity Act, 2003 and the rules or regulations framed there under including those issued / framed by the Commission (as defined hereunder), as amended or re-enacted from time to time or the General Clauses Act, failing which it shall bear its ordinary English meaning.

The words/expressions when used in this Agreement shall have the respective meanings as specified below:

"Acquisition Price" shall have the same meaning as defined in the Share Purchase Agreement;

"Act" or **"Electricity Act"** or **"Electricity Act 2003"** shall mean the Electricity Act, 2003 and any amendments made to the same or any succeeding enactment thereof;

"Affiliate" shall mean a company that either directly or indirectly

i. controls or

ii. is controlled by or

iii. is under common control with

a Bidding Company (in the case of a single company) or a Member (in the case of a Consortium) and **"control"** means ownership by one entity of at least twenty six percent (26%) of the voting rights of the other entity;

"Availability" in relation to the Project or in relation to any Element of the Project, for a given period shall mean the time in hours during that period the Project is capable to transmit electricity at its Rated Voltage and shall be expressed in percentage of total hours in the given period and shall be calculated as per the procedure contained in **Appendix –IV to Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024,** attached herewith in Schedule 6;

"Bid" shall mean technical bid and financial bid submitted by the Bidder, in response to the RFP, in accordance with the terms and conditions of the RFP;

"Bid Deadline" shall mean the last date and time for submission of the Bid in response to RFP, as specified in the RFP;

"Bidding Company" shall refer to such single company that has made a Response to RFP for the Project;

"Bidding Consortium / Consortium" shall refer to a group of companies that has collectively made a Response to RFP for the Project;

"Bid Documents" or **"Bidding Documents"** shall mean the RFP, along with all attachments thereto or clarifications thereof;

"Bidding Guidelines" shall mean the "Tariff Based Competitive Bidding Guidelines for Transmission Service" and "Guidelines for Encouraging Competition in Development of Transmission Projects" issued by Government of India, Ministry of Power under Section – 63 of the Electricity Act as amended from time to time;

"Bid Process Coordinator" or **"BPC"** shall mean a person or its authorized representative as notified by the Government of India, responsible for carrying out the process for selection of Bidder who will acquire Transmission Service Provider;

"Bill" shall mean any bill raised by the CTU on the DICs to recover the Transmission Charges pursuant to the Sharing Regulations;

"Business Day" shall mean a day other than Sunday or a statutory holiday, on which the banks remain open for business in the State in which the Nodal Agency's registered office is located and the concerned TSP are located;

"CEA" shall mean the Central Electricity Authority constituted under Section -70 of the Electricity Act;

"Change in law" shall have the meaning ascribed thereto in Article 12;

"Commercial Operation Date" or **"COD"** shall mean the date as per Article 6.2;

"Commission" or **"CERC"** shall mean the Central Electricity Regulatory Commission referred to in sub-section (1) of Section 76 of the Electricity Act, 2003 or its successors and assigns;

"Competent Court of Law" shall mean the Supreme Court or any High Court, or any tribunal or any similar judicial or quasi-judicial body in India that has jurisdiction to adjudicate upon issues relating to the Project;

"Connection Agreement" shall mean the agreement between the CTU or STU or any other concerned parties and the TSP, setting out the terms relating to the connection of the Project to the Inter-connection Facilities and use of the Inter State Transmission System as per the provisions of the IEGC, as the case may be;

"Consultation Period" shall mean the period of sixty (60) days or such longer period as the Parties may agree, commencing from the date of issue of a TSP's Preliminary Notice or a Nodal Agency's Preliminary Termination Notice, as provided in Article 13 of this Agreement, for consultation between the Parties to mitigate the consequence of the relevant event having regard to all the circumstances;

"Consents, Clearances and Permits" shall mean all authorizations, licenses, approvals, registrations, permits, waivers, privileges, acknowledgements, agreements, or concessions required to be obtained from or provided by any concerned authority for the development, execution and operation of Project including without any limitation for the construction, ownership, operation and maintenance of the Transmission Lines and/or sub-stations;

"Construction Period" shall mean the period from (and including) the Effective Date of the Transmission Service Agreement up to (but not including) the COD of the Element of the Project in relation to an Element and up to (but not including) the COD of the Project in relation to the Project;

"Contractors" shall mean the engineering, procurement, construction, operation & maintenance contractors, surveyors, advisors, consultants, designers, suppliers to the TSP and each of their respective sub-contractors (and each of their respective successors and permitted assigns) in their respective capacities as such;

"Contract Performance Guarantee" shall mean the irrevocable unconditional bank guarantee, submitted and to be submitted by the TSP or by the Selected Bidder on behalf of the TSP to the Nodal Agency from a bank mentioned in Annexure 17 of the RFP, in the form attached here to as Schedule 8, in accordance with Article 3 of this Agreement and which shall include the additional bank guarantee furnished by the TSP under this Agreement;

"Contract Year", for the purpose of payment of Transmission Charges, shall mean the period beginning on the COD, and ending on the immediately succeeding March 31 and thereafter each period of 12 months beginning on April 1 and ending on March 31 provided that the last Contract Year shall end on the last day of the term of the TSA;

"CTU" or **"Central Transmission Utility"** shall have same meaning as defined in the Electricity Act, 2003;

"Day" shall mean a day starting at 0000 hours and ending at 2400 hours;

"D/C" shall mean Double Circuit;

"Designated ISTS Customers" or **"DICs"** shall have the meaning as described in the Sharing Regulations;

"Dispute" shall mean any dispute or difference of any kind between the Parties, in connection with or arising out of this Agreement including any issue on the interpretation and scope of the terms of this Agreement as provided in Article 16;

"Effective Date" for the purposes of this Agreement, shall have the same meaning as per Article 2.1 of this Agreement;

"Electrical Inspector" shall mean a person appointed as such by the Government under sub-section (1) of Section 162 of the Electricity Act 2003 and also includes Chief Electrical Inspector;

"Electricity Rules 2005" shall mean the rules framed pursuant to the Electricity Act 2003 and as amended from time to time;

"Element" shall mean each Transmission Line or each circuit of the Transmission Lines (where there are more than one circuit) or each bay of Sub-station or switching station or HVDC terminal or inverter station of the Project, including ICTs, Reactors, SVC, FSC, etc. forming part of the ISTS, which will be owned, operated and maintained by the concerned ISTS Licensee, and which has a separate Scheduled COD as per Schedule 2 of this Agreement and has a separate percentage for recovery of Transmission Charges on achieving COD as per Schedule 5 of this Agreement;

"Event of Default" shall mean the events as defined in Article 13 of this Agreement;

"Expiry Date" shall be the date which is Thirty Five (35) years from the COD of the Project;

"Financial Closure" shall mean the first Business Day on which funds are made available to the TSP pursuant to the Financing Agreements;

"Financially Evaluated Entity" shall mean the company which has been evaluated for the satisfaction of the financial requirement set forth in the RFP;

"Financing Agreements" shall mean the agreements pursuant to which the TSP is to finance the Project including the loan agreements, security documents, notes, indentures, security agreements, letters of credit and other documents, as may be amended, modified, or replaced from time to time, but without in anyway increasing the liabilities of the Designated ISTS Customers / Nodal Agency;

"Financial Year" shall mean a period of twelve months at midnight Indian Standard Time (IST) between 1st April & 31st March;

"Force Majeure" and **"Force Majeure Event"** shall have the meaning assigned thereto in Article 11;

"GOI" shall mean Government of India;

"Grid Code" / "IEGC" shall mean the Grid Code specified by the Central Commission under Clause (h) of sub-section (1) of Section 79 of the Electricity Act;

"Independent Engineer" shall mean an agency/ company, appointed by Nodal Agency in accordance with the Guidelines for Encouraging Competition in Development of Transmission Projects.

"Indian Governmental Instrumentality" shall mean Government of India, Government of any State in India or any ministry, department, board, authority, agency, corporation, commission under the direct or indirect control of Government of India or any State Government or both, any political sub-division of any of them including any court or Commission or tribunal or judicial or quasi-judicial body in India but excluding the CTU, TSP and the Designated ISTS Customers;

"Insurances" shall mean the insurance cover to be obtained and maintained by the TSP in accordance with Article 9 of this Agreement;

"Interconnection Facilities" shall mean the facilities as may be set up for transmission of electricity through the use of the Project, on either one or both side of generating station's / CTU's / STU's / ISTS Licensee's / Designated ISTS Customer's substations (as the case may be) which shall include, without limitation, all other transmission lines, gantries, sub-stations and associated equipment's not forming part of the Project;

"ISTS Licensee" shall be the TSP under this Agreement, consequent to having been awarded a Transmission License by the CERC and shall be referred to as the TSP or the ISTS Licensee, as the context may require in this Agreement;

"Law" or "Laws" in relation to this Agreement, shall mean all laws including electricity laws in force in India and any statute, ordinance, rule, regulation, notification, order or code, or any interpretation of any of them by an Indian Governmental Instrumentality having force of law and shall include all rules, regulations, decisions and orders of the Commission;

"Lead Member of the Bidding Consortium" or "Lead Member" shall mean a company who commits at least 26% equity stake in the Project, meets the technical requirement as specified in the RFP and so designated by other Member(s) in Bidding Consortium;

"Lenders" means the banks, financial institutions, multilateral funding agencies, non-banking financial companies registered with the Reserve Bank of India (RBI), insurance companies registered with the Insurance Regulatory & Development Authority (IRDA), pension funds regulated by the Pension Fund Regulatory & Development Authority (PFRDA),mutual funds registered with Securities & Exchange Board of India (SEBI), etc., including their successors and assigns, who have agreed on or before COD of the Project to provide the TSP with the debt financing described in the capital structure schedule, and any successor banks or financial institutions to whom their interests under the Financing Agreements may be transferred or assigned;

Provided that, such assignment or transfer shall not relieve the TSP of its obligations to the Nodal Agency under this Agreement in any manner and shall also does not lead to an increase in the liability of the Nodal Agency;

"Lenders Representative" shall mean the person notified by the Lender(s) in writing as being the representative of the Lender(s) or the Security Trustee and such person may from time to time be replaced by the Lender(s) pursuant to the Financing Agreements by written notice to the TSP;

"Letter of Intent" or **"LOI"** shall have the same meaning as in the RFP;

"Member in a Bidding Consortium / Member" shall mean each company in the Bidding Consortium;

"Month" shall mean a period of thirty (30) days from (and excluding) the date of the event;

"Monthly Transmission Charges" for any Element of the Project, after COD of the Element till COD of the Project, and for the Project after COD of the Project, shall mean the amount of Transmission Charges as specified in Schedule 5 of this

Agreement multiplied by no. of days in the relevant month and divided by no. of days in the year;

"National Load Despatch Centre" shall mean the centre established as per sub-section (1) of Section 26 of the Electricity Act 2003;

"Nodal Agency" shall mean CTU, which shall execute and implement the Transmission Service Agreement (TSA);

Provided that while taking major decisions, CTU shall consult CEA on technical matters and any other matter it feels necessary.

"Notification" shall mean any notification, issued in the Gazette of India;

"Operating Period" for any Element of the Project shall mean the period from (and including) the COD of such Element of the Project, up to (and including) the Expiry Date and for the Project, shall mean the period from (and including) the COD of the Project, up to (and including) the Expiry Date;

"Parent Company" shall mean an entity that holds at least twenty six percent (26%) of the paid - up equity capital directly or indirectly in the Bidding Company or in the Member in a Bidding Consortium, as the case may be;

"Preliminary Termination Notice" shall mean a Nodal Agency's Preliminary Termination Notice as defined in Article 13 of this Agreement;

"Project" shall mean **"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"**, as detailed in Schedule 1 of this Agreement;

"Project Assets" shall mean all physical and other assets relating to and forming part of the Project including:

(a) rights over the Site for substations, ROW for transmission lines;

(b) tangible & intangible assets such as civil works and equipment including foundations, embankments, pavements, electrical systems, communication systems, relief centres, administrative offices, Sub-stations, software, tower and sub-stations designs etc;

(c) project facilities situated on the Site;

(d) all rights of the TSP under the project agreements;

(e) financial assets, such as receivables, security deposits etc;

(f) insurance proceeds; and

(g) Applicable Permits and authorisations relating to or in respect of the Transmission System;"

"Project Execution Plan" shall mean the plan referred to in Article 3.1.3(c) hereof;

"Prudent Utility Practices" shall mean the practices, methods and standards that are generally accepted internationally from time to time by electric transmission utilities for the purpose of ensuring the safe, efficient and economic design, construction, commissioning, operation, repair and maintenance of the Project and which practices, methods and standards shall be adjusted as necessary, to take account of:

(i) operation, repair and maintenance guidelines given by the manufacturers to be incorporated in the Project,

(ii) the requirements of Law, and

(iii) the physical conditions at the Site;

(iv) the safety of operating personnel and human beings;

"Rated Voltage" shall mean voltage at which the Transmission System is designed to operate or such lower voltage at which the line is charged, for the time being, in consultation with the Central Transmission Utility;

"Rebate" shall have the meaning as ascribed to in Article 10.3 of this Agreement;

"RFP" shall mean Request For Proposal dated **October 15, 2024** along with all schedules, annexures and RFP Project Documents attached thereto, issued by the BPC for tariff based competitive bidding process for selection of Bidder as TSP to execute the Project, including any modifications, amendments or alterations thereto;

"RFP Project Documents" shall mean the following documents to be entered into in respect of the Project, by the Parties to the respective agreements:

a. Transmission Service Agreement,

b. Share Purchase Agreement,

c. Agreement(s) required under Sharing Regulations and

d. Any other agreement as may be required;

"RLDC" shall mean the relevant Regional Load Dispatch Centre as defined in the Electricity Act, 2003, in the region(s) in which the Project is located;

"RPC" shall mean the relevant Regional Power Committee established by the Government of India for the specific Region(s) in accordance with the Electricity Act, 2003 for facilitating integrated operation of the Power System in that Region;

"Scheduled COD" in relation to an Element(s) shall mean the date(s) as mentioned in Schedule 2 as against such Element(s) and in relation to the Project, shall mean the date as mentioned in Schedule 2 as against such Project, subject to the provisions of Article 4.4 of this Agreement, or such date as may be mutually agreed among the Parties;

"Scheduled Outage" shall mean the final outage plan as approved by the RPC as per the provisions of the Grid Code;

"Selected Bid" shall mean the technical Bid and the Final Offer of the Selected Bidder submitted during e-reverse bidding, which shall be downloaded and attached in Schedule 7 on or prior to the Effective Date;

"Share Purchase Agreement" shall mean the agreement amongst **PFC Consulting Limited (PFCCL), ANANTAPUR II REZ TRANSMISSION LIMITED** and the Successful Bidder for the purchase of one hundred (100%) per cent of the shareholding of the **ANANTAPUR II REZ TRANSMISSION LIMITED** for the Acquisition Price, by the Successful Bidder on the terms and conditions as contained therein;

"Sharing Regulations" shall mean the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 and as amended from time to time;

"Site" in relation to a substation, switching station or HVDC terminal or inverter station, shall mean the land and other places upon which such station / terminal is to be established;

"SLDC" shall mean the State Load Despatch Centre established as per sub-section (1) of Section 31 of the Electricity Act 2003;

"STU" or **"State Transmission Utility"** shall be the Board or the Government company, specified as such by the State Government under sub-section (1) of Section 39 of the Electricity Act 2003;

"Successful Bidder" or **"Selected Bidder"** shall mean the Bidder selected pursuant to the RFP and who has to acquire one hundred percent (100%) equity shares of **ANANTAPUR II REZ TRANSMISSION LIMITED**, along with all its related assets and

liabilities, which will be responsible as the TSP to establish the Project on build, own, operate and transfer basis as per the terms of the TSA and other RFP Project Documents;

"TSP's Preliminary Notice" shall mean a notice issued by the TSP in pursuant to the provisions of Article 13.3 of this Agreement;

"Target Availability" shall have the meaning as ascribed hereto in Article 8.2 of this Agreement;

"Technically Evaluated Entity" shall mean the company which has been evaluated for the satisfaction of the technical requirement set forth in RFP;

"Termination Notice" shall mean a Nodal Agency's Termination Notice given by the Nodal Agency to the TSP pursuant to the provisions of Articles 3.3.2, 3.3.4, 4.4.2, 5.8, 13.2 and 13.3 of this Agreement for the termination of this Agreement;

"Term of Agreement" for the purposes of this Agreement shall have the meaning ascribed thereto in Article 2.2 of this Agreement;

"Transmission Charges" shall mean the Final Offer of the Selected Bidder during the e-reverse bidding and adopted by the Commission, payable to the TSP as per Sharing Regulations;

"Transmission License" shall mean the license granted by the Commission in terms of the relevant regulations for grant of such license issued under the Electricity Act;

"Transmission Service" shall mean making the Project available as per the terms and conditions of this Agreement and Sharing Regulations;

"Unscheduled Outage" shall mean an interruption resulting in reduction of the Availability of the Element(s) / Project (as the case may be) that is not a result of a Scheduled Outage or a Force Majeure Event.

"Ultimate Parent Company" shall mean an entity which owns at least twenty six percent (26%) equity in the Bidding Company or Member of a Consortium, (as the case may be) and in the Technically Evaluated Entity and / or Financially Evaluated Entity (as the case may be) and such Bidding Company or Member of a Consortium, (as the case may be) and the Technically Evaluated Entity and / or Financially Evaluated Entity (as the case may be) shall be under the direct control or indirectly under the common control of such entity;

1.2 Interpretation:

Save where the contrary is indicated, any reference in this Agreement to:

"Agreement" shall be construed as including a reference to its Schedules, Appendices and Annexures;

"Rupee", "Rupees" and **"Rs."** shall denote lawful currency of India;

"crore" shall mean a reference to ten million (10,000,000) and a **"lakh"** shall mean a reference to one tenth of a million (1,00,000);

"encumbrance" shall be construed as a reference to a mortgage, charge, pledge, lien or other encumbrance securing any obligation of any person or any other type of preferential arrangement (including, without limitation, title transfer and retention arrangements) having a similar effect;

"holding company" of a company or corporation shall be construed as a reference to any company or corporation of which the other company or corporation is a subsidiary;

"indebtedness" shall be construed so as to include any obligation (whether incurred as principal or surety) for the payment or repayment of money, whether present or future, actual or contingent;

"person" shall have the meaning as defined in Section 2 (49) of the Act;

"subsidiary" of a company or corporation (the holding company) shall be construed as a reference to any company or corporation:

(i) which is controlled, directly or indirectly, by the holding company, or

(ii) more than half of the issued share capital of which is beneficially owned, directly or indirectly, by the holding company, or

(iii) which is a subsidiary of another subsidiary of the holding company,

for these purposes, a company or corporation shall be treated as being controlled by another if that other company or corporation is able to direct its affairs and/or to control the composition of its board of directors or equivalent body;

"winding-up", "dissolution", "insolvency", or **"reorganization"** in the context of a company or corporation shall have the same meaning as defined in the Companies Act, 1956/ Companies Act, 2013 (as the case may be).

1.2.1 Words importing the singular shall include the plural and vice versa.

1.2.2 This Agreement itself or any other agreement or document shall be construed as a reference to this or to such other agreement or document as it may have been, or may from time to time be, amended, varied, novated, replaced or supplemented.

1.2.3 A Law shall be construed as a reference to such Law including its amendments or re-enactments from time to time.

1.2.4 A time of day shall, save as otherwise provided in any agreement or document be construed as a reference to Indian Standard Time.

1.2.5 Different parts of this Agreement are to be taken as mutually explanatory and supplementary to each other and if there is any inconsistency between or among the parts of this Agreement, they shall be interpreted in a harmonious manner so as to give effect to each part.

1.2.6 The tables of contents and any headings or sub-headings in this Agreement have been inserted for ease of reference only and shall not affect the interpretation of this Agreement.

1.2.7 All interest payable under this Agreement shall accrue from day to day and be calculated on the basis of a year of three hundred and Sixty Five (365) days.

1.2.8 The words "hereof" or "herein", if and when used in this Agreement shall mean a reference to this Agreement.

1.2.9 The contents of Schedule 7 shall be referred to for ascertaining accuracy and correctness of the representations made by the Selected Bidder in Article 17.2.1 hereof.

ARTICLE: 2

2. EFFECTIVENESS AND TERM OF AGREEMENT

2.1 Effective Date:

This Agreement shall be effective from later of the dates of the following events:

a. The Selected Bidder, on behalf of the TSP, has provided the Contract Performance Guarantee, as per terms of Article 3.1 of this Agreement; and

b. The Selected Bidder has acquired for the Acquisition Price, one hundred percent (100%) of the equity shareholding of **PFC Consulting Limited** in **ANANTAPUR II REZ TRANSMISSION LIMITED** along with all its related assets and liabilities as per the provisions of the Share Purchase Agreement. and

c. The Agreement is executed and delivered by the Parties;

2.2 Term and Termination:

2.2.1 Subject to Article 2.2.3 and Article 2.4, this Agreement shall continue to be effective in relation to the Project until the Expiry Date, when it shall automatically terminate.

2.2.2 Post the Expiry Date of this Agreement, the TSP shall ensure transfer of Project Assets to CTU or its successors or an agency as decided by the Central Government at zero cost and free from any encumbrance and liability. The transfer shall be completed within 90 days of expiry of this Agreement failing which CTU shall be entitled to take over the Project Assets Suo moto.

2.2.3 This Agreement shall terminate before the Expiry Date in accordance with Article 13 or Article 3.3.2 or Article 3.3.4.

2.3 Conditions prior to the expiry of the Transmission License

In order to continue the Project beyond the expiry of the Transmission License, the TSP shall be obligated to make an application to the Commission at least two (2) years before the date of expiry of the Transmission License, seeking the Commission's approval for the extension of the term of the Transmission License up to the Expiry Date.

2.3.1 The TSP shall timely comply with all the requirements that may be laid down by the Commission for extension of the term of the Transmission License beyond the initial term of twenty-five (25) years & upto the Expiry Date and the TSP shall keep the Nodal Agency fully informed about the progress on its application for extension of the term of the Transmission License.

2.4 Survival:

The expiry or termination of this Agreement shall not affect any accrued rights, obligations/ roles and liabilities of the Parties under this Agreement, including the right to receive liquidated damages as per the terms of this Agreement, nor shall it effect the survival of any continuing obligations/ roles for which this Agreement provides, either expressly or by necessary implication, which are to survive after the Expiry Date or termination including those under Articles 3.3.3, 3.3.5, Article 9.3 (Application of Insurance Proceeds), Article 11 (Force Majeure), Article 13 (Events of Default and Termination), Article 14 (Liability & Indemnification), Article 16 (Governing Law & Dispute Resolution), Article 19 (Miscellaneous).

2.5 Applicability of the provisions of this Agreement

2.5.1 For the purpose of Availability, Target Availability and the computation of Availability, Incentive, Penalty, the provisions provided in this Agreement shall apply and any future modifications in the relevant Rules and Regulations shall not be applicable for this Project.

2.5.2 For the purposes of this Agreement for ISTS systems developed under the tariff based competitive bidding framework, the provisions relating to the definitions (Availability and COD), Article 3 (Contract Performance Guarantee and Conditions Subsequent), Article 5 (Construction of the Project), Article 6 (Connection and Commissioning of the Project), Article 8 (Target Availability and calculation of Availability), Article 11 (Force Majeure), Article 12 (Change in Law), Article 13 (Event of Default), Article 14 (Indemnification), Article 15 (Assignment and Charges), Articles 16.1, 16.2 and 16.4 (Governing Laws and Dispute Resolution) and Article 17 (representation and warranties of the ISTS Licensee) of this agreement shall supersede the corresponding provisions under Sharing Regulations.

ARTICLE: 3

3. CONDITIONS SUBSEQUENT

3.1 Satisfaction of conditions subsequent by the TSP

3.1.1 Within ten (10) days from the date of issue of Letter of Intent, the Selected Bidder, shall:

a. Provide the Contract Performance Guarantee, and

b. Acquire, for the Acquisition Price, one hundred percent (100%) equity shareholding of **ANANTAPUR II REZ TRANSMISSION LIMITED** from **PFC Consulting Limited**, who shall sell to the Selected Bidder, the equity shareholding of **ANANTAPUR II REZ TRANSMISSION LIMITED,** along with all its related assets and liabilities.

c. Execute this Agreement;

The TSP shall, within five (5) working days from the date of acquisition of SPV by the Selected Bidder, undertake to apply to the Commission for the grant of Transmission License and for the adoption of tariff as required under section-63 of the Electricity Act.

The Selected Bidder, on behalf of the TSP, will provide to the **Central Transmission Utility of India Limited** (being the Nodal Agency) the Contract Performance Guarantee for an amount of **Rs.128.75 Crore (Rupees One Hundred Twenty-Eight Crore Seventy-Five Lakh Only).**

3.1.2 The Contract Performance Guarantee shall be initially valid for a period up to three (3) months after the Scheduled COD of the Project and shall be extended from time to time to be valid for a period up to three (3) months after the COD of the Project. In case the validity of the Contract Performance Guarantee is expiring before the validity specified in this Article, the TSP shall, at least thirty (30) days before the expiry of the Contract Performance Guarantee, replace the Contract Performance Guarantee with another Contract Performance Guarantee or extend the validity of the existing Contract Performance Guarantee until the validity period specified in this Article.

3.1.3 The TSP agrees and undertakes to duly perform and complete the following activities within six (6) months from the Effective Date (except for c) below), unless such completion is affected due to any Force Majeure Event, or if any of the activities is specifically waived in writing by the Nodal Agency:

a. To obtain the Transmission License for the Project from the Commission;

b. To obtain the order for adoption of Transmission Charges by the

Commission, as required under Section 63 of the Electricity Act 2003;

c. To submit to the Nodal Agency, CEA & Independent Engineer, the Project Execution Plan, immediately after award of contract(s) and maximum within one hundred and twenty (120) days from the Effective Date. Also, an approved copy each of Manufacturing Quality Plan (MQP) and Field Quality Plan (FQP) would be submitted to Independent Engineer & Nodal Agency in the same time period. The TSP's Project Execution Plan should be in conformity with the Scheduled COD as specified in Schedule 2 of this Agreement, and shall bring out clearly the organization structure, time plan and methodology for executing the Project, award of major contracts, designing, engineering, procurement, shipping, construction, testing and commissioning to commercial operation;

d. To submit to the Nodal Agency, CEA & Independent Engineer a detailed bar (GANTT) chart of the Project outlining each activity (taking longer than one Month), linkages as well as durations;

e. To submit to the Nodal Agency, CEA & Independent Engineer detailed specifications of conductor meeting the functional specifications specified in RFP;

f. To achieve Financial Closure;

g. To provide an irrevocable letter to the Lenders duly accepting and acknowledging the rights provided to the Lenders under the provisions of Article 15.3 of this Agreement and all other RFP Project Documents;

h. To award the Engineering, Procurement and Construction contract ("EPC contract") for the design and construction of the Project and shall have given to such Contractor an irrevocable notice to proceed; and

i. To sign the Agreement(s) required, if any, under Sharing Regulations.

3.2 Recognition of Lenders' Rights by the Nodal Agency

3.2.1 The Nodal Agency hereby accepts and acknowledges the rights provided to the Lenders as per Article 15.3 of this Agreement and all other RFP Project Documents.

3.3 Consequences of non-fulfilment of conditions subsequent

3.3.1 If any of the conditions specified in Article 3.1.3 is not duly fulfilled by the TSP even within three (3) Months after the time specified therein, then on and from the expiry of such period and until the TSP has satisfied all the conditions specified in Article 3.1.3, the TSP shall, on a monthly basis, be liable to furnish to **Central Transmission Utility of India Limited (being the Nodal Agency)** additional Contract Performance Guarantee of **Rs.12.88 Crore (Rupees Twelve Crore Eighty Eight Lakh Only)** within two (2) Business Days of expiry of every

such Month. Such additional Contract Performance Guarantee shall be provided to **Central Transmission Utility of India Limited (being the Nodal Agency)** in the manner provided in Article 3.1.1 and shall become part of the Contract Performance Guarantee and all the provisions of this Agreement shall be construed accordingly. **Central Transmission Utility of India Limited (being the Nodal Agency)** shall be entitled to hold and / or invoke the Contract Performance Guarantee, including such additional Contract Performance Guarantee, in accordance with the provisions of this Agreement.

3.3.2 Subject to Article 3.3.4, if:

(i) the fulfilment of any of the conditions specified in Article 3.1.3 is delayed beyond nine (9) Months from the Effective Date and the TSP fails to furnish additional Contract Performance Guarantee to the Nodal Agency in accordance with Article 3.3.1 hereof; or

(ii) the TSP furnishes additional Performance Guarantee to the Nodal Agency in accordance with Article 3.3.1 hereof but fails to fulfil the conditions specified in Article 3.1.3 within a period of twelve (12) months from the Effective Date,

the Nodal Agency shall have the right to terminate this Agreement, by giving a Termination Notice to the TSP, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement.

3.3.3 If the Nodal Agency elects to terminate this Agreement as per the provisions of Article 3.3.2, the TSP shall be liable to pay to the Nodal Agency an amount of **Rs.128.75 Crore (Rupees One Hundred Twenty-Eight Crore Seventy-Five Lakh Only)** as liquidated damages. The Nodal Agency shall be entitled to recover this amount of damages by invoking the Contract Performance Guarantee to the extent of liquidated damages, which shall be required by the Nodal Agency, and the balance shall be returned to TSP, if any.

It is clarified for removal of doubt that this Article shall survive the termination of this Agreement.

3.3.4 In case of inability of the TSP to fulfil the conditions specified in Article 3.1.3 due to any Force Majeure Event, the time period for fulfilment of the condition subsequent as mentioned in Article 3.1.3, may be extended for a period of such Force Majeure Event. Alternatively, if deemed necessary, this Agreement may be terminated by the Nodal Agency by giving a Termination Notice to the TSP, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement and the Contract Performance Guarantee shall be returned as per the provisions of Article 6.5.1.

Provided, that due to the provisions of this Article 3.3.4, any increase in the time period for completion of conditions subsequent mentioned under Article 3.1.3, shall lead to an equal increase in the time period for the Scheduled COD. If the Scheduled

COD is extended beyond a period of one hundred eighty (180) days due to the provisions of this Article 3.3.4, the TSP will be allowed to recover the interest cost during construction corresponding to the period exceeding one hundred eighty (180) days by adjustment in the Transmission Charges in accordance with Schedule 9.

3.3.5 Upon termination of this Agreement as per Articles 3.3.2 and 3.3.4, the Nodal Agency may take steps to bid out the Project again.

3.3.6 The Nodal agency, on the failure of the TSP to fulfil its obligations, if it considers that there are sufficient grounds for so doing, apart from invoking the Contract Performance Guarantee under para 3.3.3 may also initiate proceedings for blacklisting the TSP as per provisions of Article 13.2 of TSA.

3.4 Progress Reports

The TSP shall notify the Nodal Agency and CEA in writing at least once a Month on the progress made in satisfying the conditions subsequent in Articles 3.1.3.

ARTICLE: 4

4. DEVELOPMENT OF THE PROJECT

4.1 TSP's obligations in development of the Project:

Subject to the terms and conditions of this Agreement, the TSP at its own cost and expense shall observe, comply with, perform, undertake and be responsible:

a. for procuring and maintaining in full force and effect all Consents, Clearances and Permits, required in accordance with Law for development of the Project;

b. for financing, constructing, owning and commissioning each of the Element of the Project for the scope of work set out in Schedule 1 of this Agreement in accordance with:

i. the Electricity Act and the Rules made thereof;

ii. the Grid Code;

iii. the CEA Regulations applicable, and as amended from time to time, for Transmission Lines and sub-stations:

- the Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007;
- Central Electricity Authority (Technical Standards for construction of Electrical Plants and Electric Lines) Regulation, 2010;
- Central Electricity Authority (Grid Standard) Regulations, 2010;
- Central Electricity Authority (Safety requirements for construction, operation and maintenance of Electrical Plants and Electrical Lines) Regulation, 2011;
- Central Electricity Authority (Measures relating to Safety and Electricity Supply) Regulation, 2010;
- Central Electricity Authority (Technical Standards for Communication System in Power System Operation) Regulations, 2020.

iv. Safety/ security Guidelines laid down by the Government;

v. Prudent Utility Practices, relevant Indian Standards and the Law;

not later than the Scheduled COD as per Schedule 2 of this Agreement;

c. for entering into a Connection Agreement with the concerned parties in accordance with the Grid Code.

d. for owning the Project throughout the term of this Agreement free and clear of any encumbrances except those expressly permitted under Article 15 of this Agreement;

e. to co-ordinate and liaise with concerned agencies and provide on a timely basis relevant information with regard to the specifications of the Project that may be required for interconnecting the Project with the Interconnection Facilities;

f. for providing all assistance to the Arbitrators as they may require for the performance of their duties and responsibilities;

g. to provide to the Nodal Agency and CEA, on a monthly basis, progress reports with regard to the Project and its execution (in accordance with prescribed form) to enable the CEA to monitor and co-ordinate the development of the Project matching with the Interconnection Facilities;

h. to comply with Ministry of Power order no. 25-11/6/2018 – PG dated 02.07.2020 as well as other Guidelines issued by Govt. of India pertaining to this;

i. to procure the products associated with the Transmission System as per provisions of Public Procurement (Preference to Make in India) orders issued by Ministry of Power vide orders No. P-45021/2/2017-PP (BE-II)-Part (4) Vol.II dated 19.07.2024 for transmission sector, as amended from time to time read with Department for Promotion of Industry and Internal Trade (DPIIT) orders in this regard (Procuring Entity as defined in above orders shall deemed to have included Selected Bidder and/ or TSP).

Also, to comply with Department of Expenditure, Ministry of Finance vide Order (Public Procurement No 1) bearing OM No. F.7/10/2021-PPD (1) dated 23.02.2023 as amended from time to time, regarding public procurement from a bidder of a country, which shares land border with India;

j. to submit to Nodal Agency information in the prescribed format [To be devised by Nodal Agency] for ensuring compliance to Article 4.1 i) above.

k. to comply with all its obligations undertaken in this Agreement.

4.2 Roles of the Nodal Agency in implementation of the Project:

4.2.1 Subject to the terms and conditions of this Agreement, the Nodal Agency shall be the holder and administrator of this Agreement and shall inter alia:

a. appoint an Independent Engineer within 90 days of the Effective Date

b. provide letters of recommendation to the concerned Indian Governmental Instrumentality, as may be requested by the TSP from time to time, for obtaining the Consents, Clearances and Permits required for the Project;

c. coordinate among TSP and upstream/downstream entities in respect of Interconnection Facilities; and

d. monitor the implementation of the Agreement and take appropriate action for breach thereof including revocation of guarantees, cancellation of Agreement, blacklisting etc

e. provide all assistance to the Arbitrators as required for the performance of their duties and responsibilities; and

f. perform any other responsibility (ies) as specified in this Agreement.

4.3 Time for Commencement and Completion:

a. The TSP shall take all necessary steps to commence work on the Project from the Effective Date of the Agreement and shall achieve Scheduled COD of the Project in accordance with the time schedule specified in Schedule 2 of this Agreement;

b. The COD of each Element of the Project shall occur no later than the Scheduled COD or within such extended time to which the TSP shall be entitled under Article 4.4 hereto.

4.4 Extension of time:

4.4.1 In the event that the TSP is unable to perform its obligations for the reasons solely attributable to the Nodal Agency, the Scheduled COD shall be extended, by a 'day to day' basis, subject to the provisions of Article 13.

4.4.2 In the event that an Element or the Project cannot be commissioned by its Scheduled COD on account of any Force Majeure Event as per Article 11, the Scheduled COD shall be extended, by a 'day to day' basis for a period of such Force Majeure Event. Alternatively, if deemed necessary, the Nodal Agency may terminate the Agreement as per the provisions of Article 13.4 by giving a Termination Notice to the TSP, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement.

4.4.3 If the Parties have not agreed, within thirty (30) days after the affected Party's performance has ceased to be affected by the relevant circumstance, on how long the Scheduled COD should be deferred by, any Party may raise the Dispute to be resolved in accordance with Article 16.

4.5 Metering Arrangements:

4.5.1 The TSP shall comply with all the provisions of the IEGC and the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended from time to time, with regard to the metering arrangements for the Project. The TSP shall fully cooperate with the CTU / STU / RLDC and extend all necessary assistance in taking meter readings.

4.6 Interconnection Facilities:

4.6.1 Subject to the terms and conditions of this Agreement, the TSP shall be responsible for connecting the Project with the interconnection point(s) specified in Schedule 1 of this Agreement. The Interconnection Facilities shall be developed as per the scope of work and responsibilities assigned in Schedule 1 of this Agreement. The Nodal Agency shall be responsible for coordinating to make available the Interconnection Facilities.

4.6.2 In order to remove any doubts, it is made clear that the obligation of the TSP within the scope of the project is to construct the Project as per Schedule-1 of this Agreement and in particular to connect it to the Interconnection Facilities as specified in this Agreement.

ARTICLE: 5

5. CONSTRUCTION OF THE PROJECT

5.1 TSP's Construction Responsibilities:

5.1.1 The TSP, at its own cost and expense, shall be responsible for designing, constructing, erecting, testing and commissioning each Element of the Project by the Scheduled COD in accordance with the Regulations and other applicable Laws specified in Article 4.1 of this Agreement.

5.1.2 The TSP acknowledges and agrees that it shall not be relieved from any of its obligations under this Agreement or be entitled to any extension of time or any compensation whatsoever by reason of the unsuitability of the Site or Transmission Line route(s).

5.1.3 The TSP shall be responsible for obtaining all Consents, Clearances and Permits related but not limited to road / rail / river / canal / power line / crossings, Power and Telecom Coordination Committee (PTCC), defence, civil aviation, right of way / way-leaves and environmental & forest clearances from relevant authorities required for developing, financing, constructing, maintaining/ renewing all such Consents, Clearances and Permits in order to carry out its obligations under this Agreement in general and shall furnish to the Nodal Agency such copy/ies of each Consents, Clearances and Permits, on demand. Nodal Agency shall provide letters of recommendation to the concerned Indian Governmental Instrumentality, as may be requested by the TSP from time to time, for obtaining the Consents, Clearances and Permits required for the Project.

5.1.4 The TSP shall be responsible for:

a) acquisition of land for location specific substations, switching stations or HVDC terminal or inverter stations. Also, the actual location of Greenfield substations (Switching Stations or HVDC Terminal or Inverter Stations) for a generation pooling substation and for load serving substations in the scope of TSP shall not be beyond 3 Km radius of the location proposed by the BPC in the survey report. However, actual location of any Greenfield intermediate Substations in the scope of TSP shall not be beyond 10 Km radius of the location proposed by the BPC in the Survey Report.

b) final selection of Site including its geo-technical investigation

c) Survey and geo-technical investigation of line route in order to determine the final route of the Transmission Lines;

d) Seeking access to the Site and other places where the Project is being executed, at its own risk and costs, including payment of any crop, tree compensation or any other compensation as may be required.

5.1.5 In case the Project involves any resettlement and rehabilitation, the resettlement and rehabilitation package will be implemented by the State Government authorities, for which the costs is to be borne by the TSP and no changes would be allowed in the Transmission Charges on account of any variation in the resettlement and rehabilitation cost. The TSP shall provide assistance on best endeavour basis, in implementation of the resettlement and rehabilitation package, if execution of such package is in the interest of expeditious implementation of the Project and is beneficial to the Project affected persons.

5.2 Appointing Contractors:

5.2.1 The TSP shall conform to the requirements as provided in this Agreement while appointing Contractor(s) for procurement of goods & services.

5.2.2 The appointment of such Contractor(s) shall neither relieve the TSP of any of its obligations under this Agreement nor make the Nodal Agency liable for the performance of such Contractor(s).

5.3 Monthly Progress Reporting:

The TSP shall provide to the CEA, Nodal Agency & Independent Engineer, on a monthly basis, progress reports along with likely completion date of each Element with regard to the Project and its execution (in accordance with prescribed form). The Nodal Agency/ CEA shall monitor the development of the Project for its timely completion for improving and augmenting the electricity system as a part of its statutory responsibility.

5.4 Quality of Workmanship:

The TSP shall ensure that the Project is designed, built and completed in a good workmanship using sound engineering and construction practices, and using only materials and equipment that are new and manufactured as per the MQP and following approved FQP for erection, testing & commissioning and complying with Indian /International Standards such that, the useful life of the Project will be at least thirty five (35) years from the COD of the Project.

The TSP shall ensure that all major substation equipment / component (e.g. transformers, reactors, Circuit Breakers, Instrument Transformers (IT), Surge Arresters (SA), Protection relays, clamps & connectors etc.), equipment in terminal stations of HVDC installations including Thyristor/ IGBT valves, Converter Transformers, smoothing reactors, Transformer bushings and wall bushings, GIS bus

ducts, towers and gantry structures and transmission towers or poles and line materials (conductors, earthwire, OPGW, insulator, accessories for conductors, OPGW & earthwires, hardware fittings for insulators, aviation lights etc), facilities and system shall be designed, constructed and tested (Type test, Routine tests, Factory Acceptance Test (FAT)) in accordance with relevant CEA Regulations and Indian Standards. In case Indian Standards for any particular equipment/ system/ process is not available, IEC/ IEEE or equivalent International Standards and Codes shall be followed.

5.5 Progress Monitoring & Quality Assurance:

5.5.1 The Project Execution Plan submitted by the TSP in accordance with Article 3.1.3 c) shall comprise of detailed schedule of all the equipment/items /materials required for the Project, right from procurement of raw material till the dispatch from works and receipt at the site. Further, it should also include various stages of the construction schedule up to the commissioning of the Project.

5.5.2 Nodal Agency, CEA & Independent Engineer shall have access at all reasonable times to the Site and to the Manufacturer's works and to all such places where the Project is being executed.

5.5.3 Independent Engineer shall ensure conformity of the conductor specifications with the functional specifications specified in RFP.

5.5.4 The Independent Engineer shall monitor the following during construction of the Project:

a) Quality of equipment, material, foundation, structures and workmanship etc. as laid down in Article 5.4 and 6.1.4 of the TSA. Specifically, quality of Sub-station equipment, transmission line material and workmanship etc. would be checked in accordance with the Article 5.4.

b) Progress in the activities specified in Condition Subsequent

c) Verification of readiness of the elements including the statutory clearances & completion of civil works, fixing of all components and finalisation of punch points (if any) prior to charging of the elements

d) Progress of construction of substation and Transmission Lines

5.5.5 The progress shall be reviewed by the Independent Engineer against the Project Execution Plan. The Independent Engineer shall prepare its report on monthly basis and submit the same to Nodal Agency highlighting the progress achieved till the end of respective month vis-à-vis milestone activities, areas of concern, if any, which may result in delay in the timely completion of the Project. Based on the progress, Nodal

Agency and/ or CEA shall issue written instructions to the TSP to take corrective measures, as may be prudent for the timely completion of the Project. In case of any deficiency, the Nodal Agency would be at liberty to take action in accordance with the procedure of this Agreement.

5.5.6 For any delay in commissioning any critical Element(s), as identified in Schedule 1 & Schedule 2 of this Agreement, beyond a period of 45 days shall lead to a sequestration of 10% of the Contract Performance Guarantee.

5.6 Site regulations and Construction Documents

The TSP shall abide by the Safety Rules and Procedures as mentioned in Schedule 3 of this Agreement

The TSP shall retain at the Site and make available for inspection at all reasonable times, copies of the Consents, Clearances and Permits, construction drawings and other documents related to construction.

5.7 Supervision of work:

The TSP shall provide all necessary superintendence for execution of the Project and its supervisory personnel shall be available to provide full-time superintendence for execution of the Project. The TSP shall provide skilled personnel who are experienced in their respective fields.

5.8 Remedial Measures:

The TSP shall take all necessary actions for remedying the shortfall in achievement of timely progress in execution of the Project, if any, as intimated by the Independent Engineer and/ or CEA and/ or the Nodal Agency. However, such intimation by the Independent Engineer and/ or CEA and/ or the Nodal Agency and the subsequent effect of such remedial measures carried out by the TSP shall not relieve the TSP of its obligations in the Agreement. Independent Engineer and/ or CEA and/ or the Nodal Agency may carry out random inspections during the Project execution, as and when deemed necessary by it. If the shortfalls as intimated to the TSP are not remedied to the satisfaction of the CEA and/ or the Nodal Agency, this Agreement may be terminated by the Nodal Agency by giving a Termination Notice to the TSP, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement.

ARTICLE: 6

6. CONNECTION AND COMMISSIONING OF THE PROJECT

6.1 Connection with the Inter-Connection Facilities:

6.1.1 The TSP shall give the RLDC(s), CTU, / STU, as the case may be, and any other agencies as required, at least sixty (60) days advance written notice of the date on which it intends to connect an Element of the Project, which date shall not be earlier than its Scheduled COD or Schedule COD extended as per Article 4.4.1 & 4.4.2 of this Agreement, unless mutually agreed to by Parties. Further, any preponing of COD of any element prior to Scheduled COD must be approved by the Nodal Agency.

6.1.2 The RLDC / SLDC (as the case may be) or the CTU / STU (as the case may be), for reasonable cause, including non-availability of Interconnection Facilities as per Article 4.2, can defer the connection for up to fifteen (15) days from the date notified by the TSP pursuant to Article 6.1.1, if it notifies to the TSP in writing, before the date of connection, of the reason for the deferral and when the connection is to be rescheduled. However, no such deferment on one or more occasions would be for more than an aggregate period of thirty (30) days. Further, the Scheduled COD would be extended as required, for all such deferments on "day to day" basis.

6.1.3 Subject to Articles 6.1.1 and 6.1.2, any Element of Project may be connected with the Interconnection Facilities when:

a. it has been completed in accordance with this Agreement and the Connection Agreement;

b. it meets the Grid Code, Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007 as amended from time to time and all other Indian legal requirements, and

c. The TSP has obtained the approval in writing of the Electrical Inspector certifying that the Element is ready from the point of view of safety of supply and can be connected with the Interconnection Facilities.

d. It has satisfactorily met all the testing requirements as per Articles 6.1.4.

6.1.4 Site Acceptance Test (SAT)/ pre-commissioning tests of all major substation equipment, component, system, facilities shall be successfully carried out before commissioning. The Type tests, FAT and SAT reports should be available at the substation / terminal station of HVDC installations for ready reference of operation and maintenance staff and has to be made available to the Independent Engineer

appointed for quality monitoring or their authorised representatives, as and when they wish to examine the same.

6.2 Commercial Operation:

6.2.1 An Element of the Project shall be declared to have achieved COD twenty four (24) hours following the connection of the Element with the Interconnection Facilities pursuant to Article 6.1 or seven (7) days after the date on which it is declared by the TSP to be ready for charging but is not able to be charged for reasons not attributable to the TSP subject to Article 6.1.2.

Provided that an Element shall be declared to have achieved COD only after all the Element(s), if any, which are pre-required to have achieved COD as defined in Schedule 2 of this Agreement, have been declared to have achieved their respective COD.

6.2.2 Once any Element of the Project has been declared to have achieved deemed COD as per Article 6.2.1 above, such Element of the Project shall be deemed to have Availability equal to the Target Availability till the actual charging of the Element and to this extent, TSP shall be eligible for the Monthly Transmission Charges applicable for such Element.

6.3 Compensation for Direct Non Natural Force Majeure Event or Indirect Non Natural Force Majeure Event or Natural Force Majeure Event (affecting the Nodal Agency)

6.3.1 If the TSP is otherwise ready to connect the Element(s) of the Project and has given due notice, as per provisions of Article 6.1.1, to the concerned agencies of the date of intention to connect the Element(s) of the Project, where such date is not before the Scheduled COD, but is not able to connect the Element(s) of the Project by the said date specified in the notice, due to Direct Non Natural Force Majeure Event or Indirect Non Natural Force Majeure Event or Natural Force Majeure Event affecting the Nodal Agency, provided such Direct Non Natural Force Majeure Event or Indirect Non Natural Force Majeure Event or Natural Force Majeure Event affecting the Nodal Agency has continued for a period of more than three (3) continuous or non-continuous Months, the TSP shall, until the effects of the Direct Non Natural Force Majeure Event or of Indirect Non Natural Force Majeure Event or Natural Force Majeure Event affecting the Nodal Agency no longer prevent the TSP from connecting the Element(s) of the Project, be deemed to have achieved COD relevant to that date and to this extent, be deemed to have been providing Transmission Service with effect from the date notified, and shall be treated as follows:

a. In case of delay due to Direct Non Natural Force Majeure Event, TSP is entitled for Transmission Charges calculated on Target Availability for the period of such events in excess of three (3) continuous or non-continuous

as penalty, without prejudice to any rights of the Nodal Agency under the Agreement.

6.4.2 The TSP's maximum liability under this Article 6.4 shall be limited to the amount of liquidated damages calculated in accordance with Article 6.4.1 for and up to six (6) months of delay for the Element or the Project.

Provided that, in case of failure of the TSP to achieve COD of the Element of the Project even after the expiry of six (6) months from its Scheduled COD, the provisions of Article 13 shall apply.

6.4.3 The TSP shall make payment to the Nodal Agency of the liquidated damages calculated pursuant to Article 6.4.1 within ten (10) days of the earlier of:

a. the date on which the applicable Element achieves COD; or

b. the date of termination of this Agreement.

The payment of such damages shall not relieve the TSP from its obligations to complete the Project or from any other obligation and liabilities under the Agreement.

6.4.4 If the TSP fails to pay the amount of liquidated damages to the Nodal Agency within the said period of ten (10) days, the Nodal Agency shall be entitled to recover the said amount of the liquidated damages by invoking the Contract Performance Guarantee. If the then existing Contract Performance Guarantee is for an amount which is less than the amount of the liquidated damages payable by the TSP to the Nodal Agency under this Article 6.3 and the TSP fails to make payment of the balance amount of the liquidated damages not covered by the Contract Performance Guarantee, then such balance amount shall be deducted from the Transmission Charges payable to the TSP. The right of the Nodal Agency to encash the Contract Performance Guarantee is without prejudice to the other rights of the Nodal Agency under this Agreement.

6.4.5 For avoidance of doubt, it is clarified that amount payable by TSP under this Article is over and above the penalty payable by TSP under Article 5.5.6 of this Agreement.

6.5 Return of Contract Performance Guarantee

6.5.1 The Contract Performance Guarantee as submitted by TSP in accordance with Article 3.1.1 shall be released by the Nodal Agency within three (3) months from the COD of the Project. In the event of delay in achieving Scheduled COD of any of the Elements by the TSP (otherwise than due to reasons as mentioned in Article 3.1.3 or Article 11) and consequent part invocation of the Contract Performance Guarantee by the Nodal Agency, Nodal Agency shall release the Contract Performance

Months in the manner provided in (c) below.

b. In case of delay due to Indirect Non Natural Force Majeure Event or Natural Force Majeure Event affecting the Nodal Agency, TSP is entitled for payment for debt service which is due under the Financing Agreements, subject to a maximum of Transmission Charges calculated on Target Availability, for the period of such events in excess of three (3) continuous or non-continuous Months in the manner provided in (c) below.

c. In case of delay due to Direct Non Natural Force Majeure Event or Indirect Non Natural Force Majeure Event or Natural Force Majeure Event affecting the Nodal Agency, the TSP is entitled for payments mentioned in (a) and (b) above, after commencement of Transmission Service, in the form of an increase in Transmission Charges. These amounts shall be paid from the date, being the later of a) the date of cessation of such Indirect Non Natural Force Majeure Event or Natural Force Majeure Event affecting the Nodal Agency and b) the completion of sixty (60) days from the receipt of the Financing Agreements by the Nodal Agency from the TSP.

Provided such increase in Transmission Charges shall be so as to put the TSP in the same economic position as the TSP would have been in case the TSP had been paid amounts mentioned in (a) and (b) above in a situation where the Force Majeure Event had not occurred.

For the avoidance of doubt, it is clarified that the charges payable under this Article 6.3.1 shall be recovered as per Sharing Regulations.

6.4 Liquidated Damages for Delay in achieving COD of Project:

6.4.1 If the TSP fails to achieve COD of any Element of the Project or the Project, by the Element's / Project's Scheduled COD or such Scheduled COD as extended under Articles 4.4.1 and 4.4.3, then the TSP shall pay to the Nodal Agency, a sum equivalent to 3.33% of Monthly Transmission Charges applicable for the Element of the Project [in case where no Elements have been defined, to be on the Project as a whole] / Project, for each day of delay up to sixty (60) days of delay and beyond that time limit, at the rate of five percent (5%) of the Monthly Transmission Charges applicable to such Element / Project, as liquidated damages for such delay and not

ARTICLE: 7

7. OPERATION AND MAINTENANCE OF THE PROJECT

7.1 Operation and Maintenance of the Project:

The TSP shall be responsible for ensuring that the Project is operated and maintained in accordance with the regulations made by the Commission and CEA from time to time and provisions of the Act.

Guarantee, if any remaining unadjusted, after the satisfactory completion by the TSP of all the requirements regarding achieving the Scheduled COD of the remaining Elements of the Project. It is clarified that the Nodal Agency shall also return / release the Contract Performance Guarantee in the event of (i) applicability of Article 3.3.2 to the extent the Contract Performance Guarantee is valid for an amount in excess of **Rs.128.75 Crore (Rupees One Hundred Twenty-Eight Crore Seventy-Five Lakh Only),** or (ii) termination of this Agreement by the Nodal Agency as mentioned under Article 3.3.4 of this Agreement.

6.5.2 The release of the Contract Performance Guarantee shall be without prejudice to other rights of the Nodal Agency under this Agreement.

ARTICLE: 9

9. INSURANCES

9.1 Insurance:

9.1.1 The TSP shall effect and maintain or cause to be effected and maintained during the Construction Period and the Operating Period, adequate Insurances against such risks, with such deductibles including but not limited to any third party liability and endorsements and co-beneficiary/insured, as may be necessary under

a. any of the Financing Agreements,

b. the Laws, and

c. in accordance with Prudent Utility Practices.

The Insurances shall be taken effective from a date prior to the date of the Financial Closure till the Expiry Date.

9.2 Evidence of Insurance cover:

9.2.1 The TSP shall furnish to the Nodal Agency copies of certificates and policies of the Insurances, as and when the Nodal Agency may seek from the TSP as per the terms of Article 9.1

9.3 Application of Insurance Proceeds:

9.3.1 Save as expressly provided in this Agreement, the policies of Insurances and the Financing Agreements, the proceeds of any insurance claim made due to loss or damage to the Project or any part of the Project shall be first applied to reinstatement, replacement or renewal of such loss or damage.

9.3.2 If a Natural Force Majeure Event renders the Project no longer economically and technically viable and the insurers under the Insurances make payment on a "total loss" or equivalent basis, the portion of the proceeds of such Insurance available to the TSP (after making admissible payments to the Lenders as per the Financing Agreements) shall be allocated only to the TSP. Nodal Agency and / or concerned Designated ISTS Customers shall have no claim on such proceeds of the Insurance.

9.3.3 Subject to the requirements of the Lenders under the Financing Agreements, any dispute or difference between the Parties as to whether the Project is no longer economically and technically viable due to a Force Majeure Event or whether that event was adequately covered in accordance with this Agreement by the Insurances shall be determined in accordance with Article 16.

ARTICLE: 8

8. AVAILABILITY OF THE PROJECT

8.1 Calculation of Availability of the Project:

Calculation of Availability for the Elements and for the Project, as the case may be, shall be as per **Appendix –IV to Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024**, as applicable on the Bid Deadline and as appended in Schedule 6 of this Agreement.

8.2 Target Availability:

The Target Availability of each Element and the Project shall be **98%.**

Payment of monthly Transmission charges based on actual availability will be calculated as per para 1.2 of Schedule 4 of this Agreement.

If the availability of any Element or the Project is below the Target Availability, for six consecutive months in a Contract Year, the DIC(s) or the Nodal Agency may issue a show cause notice to the TSP, asking them to show cause as to why the Transmission Service Agreement be not terminated, and if no satisfactory cause is shown it may terminate the Agreement. If the Nodal Agency is of the opinion that the transmission system is of critical importance, it may carry out or cause to carry the operation and maintenance of transmission system at the risk and cost of TSP.

ARTICLE: 10

10. BILLING AND PAYMENT OF TRANSMISSION CHARGES

10.1 Subject to provisions of this Article 10, the Monthly Transmission Charges shall be paid to the TSP, in Indian Rupees, on monthly basis as per the provisions of the Sharing Regulations, from the date on which an Element(s) has achieved COD until the Expiry Date of this Agreement, unless terminated earlier and in line with the provisions of Schedule 4 of this Agreement.

10.2 Calculation of Monthly Transmission Charges:

The Monthly Transmission Charges for each Contract Year including Incentive & Penalty payment shall be calculated in accordance with the provisions of Schedule 4 of this Agreement.

10.3 Rebate & Late Payment Surcharge:

The rebate and late payment surcharge shall be governed as per Sharing Regulations.

10.4 Disputed Bills, Default in payment by the Designated ISTS Customers & Annual Reconciliation:

Any Disputed Bill, Default in payment by the Designated ISTS Customers & Annual Reconciliation shall be governed as per Sharing Regulations.

9.4 Effect on liability of the Nodal Agency / Designated ISTS Customers

9.4.1 The Nodal Agency and / or the Designated ISTS Customers shall have no financial obligations or liability whatsoever towards the TSP in respect of this Article 9.

- the unlawful, unreasonable or discriminatory revocation of, or refusal to renew, any Consents, Clearances and Permits required by the Affected Party to perform their obligations/ roles under the RFP Project Documents or any unlawful, unreasonable or discriminatory refusal to grant any other Consents, Clearances and Permits required for the development/ operation of the Project, provided that a Competent Court of Law declares the revocation or refusal to be unlawful, unreasonable and discriminatory and strikes the same down; or

- any other unlawful, unreasonable or discriminatory action on the part of an Indian Governmental Instrumentality which is directed against the Project, provided that a Competent Court of Law declares the action to be unlawful, unreasonable and discriminatory and strikes the same down.

ii. Indirect Non - Natural Force Majeure Events

- act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, terrorist or military action; or

- radio active contamination or ionising radiation originating from a source in India or resulting from any other Indirect Non Natural Force Majeure Event mentioned above, excluding circumstances where the source or cause of contamination or radiation is brought or has been brought into or near the Site by the Affected Party or those employed or engaged by the Affected Party; or

- industry-wide strikes and labour disturbances, having a nationwide impact in India.

11.4 Force Majeure Exclusions

11.4.1 Force Majeure shall not include (i) any event or circumstance which is within the reasonable control of the Parties and (ii) the following conditions, except to the extent that they are consequences of an event of Force Majeure:

(a) Unavailability, late delivery, or changes in cost of the machinery, equipment, materials, spare parts etc. for the Project;

(b) Delay in the performance of any Contractors or their agents;

(c) Non-performance resulting from normal wear and tear typically experienced in transmission materials and equipment;

ARTICLE: 11

11. FORCE MAJEURE

11.1 Definitions

11.1.1 The following terms shall have the meanings given hereunder.

11.2 Affected Party

11.2.1 An Affected Party means any Party whose performance has been affected by an event of Force Majeure.

11.2.2 Any event of Force Majeure shall be deemed to be an event of Force Majeure affecting the TSP only if the Force Majeure event affects and results in, late delivery of machinery and equipment for the Project or construction, completion, commissioning of the Project by Scheduled COD and/or operation thereafter;

11.3 Force Majeure

A 'Force Majeure' means any event or circumstance or combination of events and circumstances including those stated below that wholly or partly prevents or unavoidably delays an Affected Party in the performance of its obligations/ roles under this Agreement, but only if and to the extent that such events or circumstances are not within the reasonable control, directly or indirectly, of the Affected Party and could not have been avoided if the Affected Party had taken reasonable care or complied with Prudent Utility Practices:

a) Natural Force Majeure Events:

i. act of God, including, but not limited to drought, fire and explosion (to the extent originating from a source external to the Site), earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, or exceptionally adverse weather conditions, which are in excess of the statistical measures for the last hundred (100) years; and

ii. epidemic/ pandemic notified by Indian Governmental Instrumentality.

b) Non-Natural Force Majeure Events:

i. Direct Non–Natural Force Majeure Events

- Nationalization or compulsory acquisition by any Indian Governmental Instrumentality of any material assets or rights of the Affected Party; or

11.7 Available Relief for a Force Majeure Event

Subject to this Article 11,

(a) no Party shall be in breach of its obligations/ roles pursuant to this Agreement to the extent that the performance of its obligations/ roles was prevented, hindered or delayed due to a Force Majeure Event;

(b) each Party shall be entitled to claim relief for a Force Majeure Event affecting its performance in relation to its obligations/ roles under Articles 3.3.4, 4.4.2 and 6.3.1 of this Agreement.

(c) For the avoidance of doubt, it is clarified that the computation of Availability of the Element(s) under outage due to Force Majeure Event, as per Article 11.3 affecting the TSP shall be as per **Appendix –IV to Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024** as on Bid Deadline. For the event(s) for which the Element(s) is/are deemed to be available as per **Appendix –IV to Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024**, then the Transmission Charges, as applicable to such Element(s), shall be payable as per Schedule 4, for the duration of such event(s).

(d) For so long as the TSP is claiming relief due to any Force Majeure Event under this Agreement, the Nodal Agency may, if it so desires, from time to time on one (1) day notice, inspect the Project and the TSP shall provide the Nodal Agency's personnel with access to the Project to carry out such inspections.

(e) For avoidance of doubt, the TSP acknowledges that for extension of Scheduled COD a period up to one hundred eighty (180) days due to Force Majeure event, no compensation on the grounds such as interest cost, incident expenditure, opportunity cost will be made to the TSP. However, if Scheduled COD is extended beyond a period of one hundred eighty (180) days due to Force Majeure event, the TSP will be allowed to recover the interest cost during construction corresponding to the period exceeding one hundred eighty (180) days by adjustment in the Transmission Charges in accordance with Schedule 9.

(d) Strikes or labour disturbance at the facilities of the Affected Party;

(e) Insufficiency of finances or funds or the Agreement becoming onerous to perform; and

(f) Non-performance caused by, or connected with, the Affected Party's:

i. negligent or intentional acts, errors or omissions;

ii. failure to comply with an Indian Law; or

iii. breach of, or default under this Agreement or any Project Documents.

(g) Any error or omission in the survey report provided by BPC during the bidding process.

11.5 Notification of Force Majeure Event

11.5.1 The Affected Party shall give notice to the other Party of any event of Force Majeure as soon as reasonably practicable, but not later than seven (7) days after the date on which such Party knew or should reasonably have known of the commencement of the event of Force Majeure. If an event of Force Majeure results in a breakdown of communications rendering it unreasonable to give notice within the applicable time limit specified herein, then the Party claiming Force Majeure shall give such notice as soon as reasonably practicable after reinstatement of communications, but not later than one (1) day after such reinstatement.

Provided that, such notice shall be a pre-condition to the Affected Party's entitlement to claim relief under this Agreement. Such notice shall include full particulars of the event of Force Majeure, its effects on the Party claiming relief and the remedial measures proposed. The Affected Party shall give the other Party regular reports on the progress of those remedial measures and such other information as the other Party may reasonably request about the Force Majeure.

11.5.2 The Affected Party shall give notice to the other Party of (i) the cessation of the relevant event of Force Majeure; and (ii) the cessation of the effects of such event of Force Majeure on the performance of its rights or obligations/ roles under this Agreement, as soon as practicable after becoming aware of each of these cessations.

11.6 Duty to perform and duty to mitigate

To the extent not prevented by a Force Majeure Event, the Affected Party shall continue to perform its obligations/ roles as provided in this Agreement. The Affected Party shall use its reasonable efforts to mitigate the effect of any event of Force Majeure as soon as practicable.

ARTICLE: 12

12. CHANGE IN LAW

12.1 Change in Law

12.1.1 Change in Law means the occurrence of any of the following after the Bid Deadline resulting into any additional recurring / non-recurring expenditure by the TSP or any savings of the TSP:

- the enactment, coming into effect, adoption, promulgation, amendment, modification or repeal (without re-enactment or consolidation) in India, of any Law, including rules and regulations framed pursuant to such Law, subject to the provisions under Article 12.1.2;
- a change in the interpretation or application of any Law by any Indian Governmental Instrumentality having the legal power to interpret or apply such Law, or any Competent Court of Law;
- the imposition of a requirement for obtaining any Consents, Clearances and Permits which was not required earlier;
- a change in the terms and conditions prescribed for obtaining any Consents, Clearances and Permits or the inclusion of any new terms or conditions for obtaining such Consents, Clearances and Permits;
- any change in the licensing regulations of the Commission, under which the Transmission License for the Project was granted if made applicable by such Commission to the TSP;
- change in wind zone; or
- any change in tax or introduction of any tax made applicable for providing Transmission Service by the TSP as per the terms of this Agreement.

12.1.2 Notwithstanding anything contained in this Agreement, Change in Law shall not cover any change:

a) Taxes on corporate income; and

b) Withholding tax on income or dividends distributed to the shareholders of the TSP.

12.2 Relief for Change in Law

12.2.1 During Construction Period, the impact of increase/decrease in the cost of the Project on the Transmission Charges shall be governed by the formula given in Schedule 9 of this Agreement.

12.2.2 During the Operation Period:

During the operation period, if as a result of Change in Law, the TSP suffers or is benefited from a change in costs or revenue, the aggregate financial effect of which exceeds 0.30% (zero point three percent) of the Annual Transmission Charges in aggregate for a Contract Year, the TSP may notify so to the Nodal Agency and propose amendments to this Agreement so as to place the TSP in the same financial position as it would have enjoyed had there been no such Change in Law resulting in change in costs or revenue as aforesaid.

12.2.3 For any claims made under Articles 12.2.1 and 12.2.2 above, the TSP shall provide to the Nodal Agency documentary proof of such increase / decrease in cost of the Project / revenue for establishing the impact of such Change in Law.

In cases where Change in Law results in decrease of cost and it comes to the notice of Nodal Agency that TSP has not informed Nodal Agency about such decrease in cost, Nodal Agency may initiate appropriate claim.

12.3 Notification of Change in Law:

12.3.1 If the TSP is affected by a Change in Law in accordance with Article 12.1 and wishes to claim relief for such Change in Law under this Article 12, it shall give notice to Nodal Agency of such Change in Law as soon as reasonably practicable after becoming aware of the same.

12.3.2 The TSP shall also be obliged to serve a notice to the Nodal Agency even when it is beneficially affected by a Change in Law.

12.3.3 Any notice served pursuant to Articles 12.3.1 and 12.3.2 shall provide, amongst other things, precise details of the Change in Law and its estimated impact on the TSP.

12.4 Payment on account of Change in Law

12.4.1 The payment for Change in Law shall be through a separate Bill. However, in case of any change in Monthly Transmission Charges by reason of Change in Law, as determined in accordance with this Agreement, the Bills to be raised by the Nodal Agency after such change in Transmission Charges shall appropriately reflect the changed Monthly Transmission Charges.

ARTICLE: 13

13. EVENTS OF DEFAULT AND TERMINATION

13.1 TSP's Event of Default

The occurrence and continuation of any of the following events shall constitute a TSP Event of Default, unless any such TSP Event of Default occurs as a result of any non-fulfilment of its obligations as prescribed under this Agreement by the Nodal Agency or a Force Majeure Event:

a. After having taken up the construction of the Project, the abandonment by the TSP or the TSP's Contractors of the construction of the Project for a continuous period of two (2) months and such default is not rectified within thirty (30) days from the receipt of notice from the Nodal Agency in this regard;

b. The failure to commission any Element of the Project by the date falling six (6) months after its Scheduled COD unless extended by Nodal Agency as per provisions of this Agreement;

c. If the TSP:

i. assigns, mortgages or charges or purports to assign, mortgage or charge any of its assets or rights related to the Project in contravention of the provisions of this Agreement; or

ii. transfers or novates any of its obligations pursuant to this Agreement, in a manner contrary to the provisions of this Agreement;

Except where such transfer is in pursuance of a Law and

- it does not affect the ability of the transferee to perform, and such transferee has the financial and technical capability to perform, its obligations under this Agreement;
- is to a transferee who assumes such obligations under the Project and this Agreement remains effective with respect to the transferee;

d. If:

i. The TSP becomes voluntarily or involuntarily the subject of any bankruptcy or insolvency or winding up proceedings and such

proceedings remain uncontested for a period of thirty (30) days; or

ii. any winding up or bankruptcy or insolvency order is passed against the TSP; or

iii. the TSP goes into liquidation or dissolution or a receiver or any similar officer is appointed over all or substantially all of its assets or official liquidator is appointed to manage its affairs, pursuant to Law,

Provided that a dissolution or liquidation of the TSP will not be a TSP's Event of Default, where such dissolution or liquidation of the TSP is for the purpose of a merger, consolidation or reorganization with the prior approval of the Commission as per the provisions of Central Electricity Regulatory Commission (Procedure, terms and Conditions for grant of Transmission License and other related matters) Regulations, 2006 or as amended from time to time; or

e. Failure on the part of the TSP to comply with the provisions of Article 19.1 of this Agreement; or

f. the TSP repudiates this Agreement and does not rectify such breach even within a period of thirty (30) days from a notice from the Nodal Agency in this regard; or

g. after Commercial Operation Date of the Project, the TSP fails to achieve monthly Target Availability of 98% for a period of six (6) consecutive months or within a non-consecutive period of six (6) months within any continuous aggregate period of eighteen(18) months except where the Availability is affected by Force Majeure Events as per Article 11; or

h. any of the representations and warranties made by the TSP in Article 17 of this Agreement being found to be untrue or inaccurate. Further, in addition to the above, any of the undertakings submitted by the Selected Bidder at the time of submission of the Bid being found to be breached or inaccurate, including but not limited to undertakings from its Parent Company / Affiliates related to the minimum equity obligation; or

i. the TSP fails to complete / fulfil all the activities / conditions within the specified period as per Article 3; or

j. except for the reasons solely attributable to Nodal Agency, the TSP is in material breach of any of its obligations under this Agreement and such material breach is not rectified by the TSP within thirty (30) days of receipt of notice in this regard from the Nodal Agency; or

k. the TSP fails to take the possession of the land required for location specific substations, switching stations or HVDC terminal or inverter stations and / or fails to pay the requisite price to the parties and / or any State Government authority from whom the land is acquired, within twelve (12) months from the Effective Date.

13.2 Termination Procedure for TSP Event of Default

a. Upon the occurrence and continuance of any TSP's Event of Default under Article 13.1 the Nodal Agency may serve notice on the TSP, with a copy to the CEA and the Lenders' Representative, of their intention to terminate this Agreement (a "Nodal Agency's Preliminary Termination Notice"), which shall specify in reasonable detail, the circumstances giving rise to such Nodal Agency's Preliminary Termination Notice.

b. Following the issue of a Nodal Agency's Preliminary Termination Notice, the Consultation Period shall apply and would be for the Parties to discuss as to what steps shall be taken with a view to mitigate the consequences of the relevant Event of Default having regard to all the circumstances.

c. During the Consultation Period, the Parties shall, save as otherwise provided in this Agreement, continue to perform their respective obligations/ roles under this Agreement, and the TSP shall not remove any material, equipment or any part of the Project, without prior consent of the Nodal Agency.

Following the expiry of the Consultation Period, unless the Parties shall have otherwise agreed to the contrary or the circumstances giving rise to Nodal Agency's Preliminary Termination Notice shall have ceased to exist or shall have been remedied, this Agreement may be terminated by the Nodal Agency by giving a Termination Notice to the TSP, in writing, of at least seven (7) days, with a copy to CEA and the Lenders' Representative in order to enable the Lenders to exercise right of substitution in accordance with Article 15.3 of this Agreement.

Further, the Nodal Agency may also initiate proceedings to blacklist the TSP & its Affiliates from participation in any RFP issued by BPCs for a period of 5 years.

13.3 Procedure for Nodal Agency's non-fulfilment of Role

a. Upon the Nodal Agency not being able to fulfil its role under Article 4.2, the TSP may serve notice on the Nodal Agency, with a copy to CEA and the Lenders' Representative (a "TSP's Preliminary Notice"), which notice shall specify in reasonable detail the circumstances giving rise to such non-fulfilment of role by the Nodal Agency.

b. Following the issue of a TSP's Preliminary Notice, the Consultation Period shall apply.

c. The Consultation Period would be for the Parties to discuss as to what steps shall be taken with a view to mitigate the consequences of the relevant non-fulfilment of role by the Nodal Agency including giving time extension to TSP, having regard to all the circumstances.

d. During the Consultation Period, both Parties shall, save as otherwise provided in this Agreement, continue to perform their respective obligations/ roles under this Agreement.

13.4 Termination due to Force Majeure

13.4.1 In case the Parties could not reach an agreement pursuant to Articles 3.3.4 and 4.4.2 of this Agreement and the Force Majeure Event or its effects continue to be present, the Nodal Agency shall have the right to cause termination of the Agreement. In case of such termination, the Contract Performance Guarantee shall be returned to the TSP as per the provisions of Article 6.5.1.

13.4.2 In case of termination of this Agreement, the TSP shall provide to the Nodal Agency the full names and addresses of its Contractors as well as complete designs, design drawings, manufacturing drawings, material specifications and technical information, as required by the Nodal Agency within thirty (30) days of Termination Notice.

13.5 Termination or amendment due to non-requirement of any Element or Project during construction

13.5.1 In case any Element or Project, which is under construction, is no longer required due to any reason whatsoever, the Nodal Agency may issue a notice to this effect to the TSP.

13.5.2 Nodal agency may also issue notice to the TSP seeking their response to the proposed termination/ amendment (as the case may be) of the Agreement. The Nodal Agency shall issue copy of such notice to Lenders. In the notice, Nodal Agency

shall also include an assessment of the physical progress made by TSP in the Element/ Project (as the case may be) that is no longer required.

13.5.3 The TSP shall neither carry out further investment nor carry out any work on the Element/ Project (as the case may be) that is no longer required after delivery of the notice.

13.5.4 After taking into account the comments of the TSP, the Nodal Agency may terminate the Agreement or amend it if both Parties agree to the amendment.

13.6 Revocation of the Transmission License

13.6.1 The Commission may, as per the provisions of the Electricity Act, 2003, revoke the Transmission License of the ISTS Licensee. Further, in such a case, the Agreement shall be deemed to have been terminated.

13.7 Termination Payment

13.7.1 If Agreement is terminated on account of Force Majeure Events, non-requirement of any Element or Project during Construction, Nodal Agency's non-fulfilment of Role & TSP's Event of Default, the TSP shall be entitled for Termination Payment equivalent to valuation of Project Assets. Upon payment, the Nodal Agency shall take over the Project Assets.

ARTICLE: 14

14. LIABILITY AND INDEMNIFICATION

14.1 Indemnity

14.1.1 The TSP shall indemnify, defend and hold the Nodal Agency harmless against:

(a) any and all third party claims, actions, suits or proceedings against the Nodal Agency for any loss of or damage to property of such third party, or death or injury to such third party, arising out of a breach by the TSP of any of its obligations under this Agreement, except to the extent that any such claim, action, suit or proceeding has arisen due to a negligent act or omission, breach of this Agreement or non-fulfilment of statutory duty on the part of Nodal Agency; and

(b) any and all losses, damages, costs and expenses including legal costs, fines, penalties and interest actually suffered or incurred by the Nodal Agency from third party claims arising by reason of:

i. a breach by the TSP of any of its obligations under this Agreement, (provided that this Article 14 shall not apply to such breaches by the TSP, for which specific remedies have been provided for under this Agreement) except to the extent that any such losses, damages, costs and expenses including legal costs, fines, penalties and interest (together to constitute "Indemnifiable Losses") has arisen due to a negligent act or omission, breach of this Agreement or non-fulfilment of statutory duty on the part of the Nodal Agency, or

ii. any of the representations and warranties of the TSP under this Agreement being found to be inaccurate or untrue.

14.1.2 The Nodal Agency shall, in accordance with the Regulations framed by CERC in this regard, indemnify, defend and hold the TSP harmless against:

(a) any and all third party claims, actions, suits or proceedings against the TSP, for any loss of or damage to property of such third party, or death or injury to such third party, arising out of any material breach by the Nodal Agency of any of their roles under this Agreement, except to the extent that any such claim, action, suit or proceeding has arisen due to a negligent act or omission, breach of this Agreement or breach of statutory duty on the part of the TSP, its Contractors, servants or agents; and

(b) any and all losses, damages, costs and expenses including legal costs, fines,

penalties and interest ('Indemnifiable Losses') actually suffered or incurred by the TSP from third party claims arising by reason of:

i. any material breach by the Nodal Agency of any of its roles under this Agreement (provided that, this Article 14 shall not apply to such breaches by the Nodal Agency, for which specific remedies have been provided for under this Agreement), except to the extent that any such Indemnifiable Losses have arisen due to a negligent act or omission, breach of this Agreement or breach of statutory duty on the part of the TSP, its Contractors, servants or agents or

ii. any of the representations and warranties of the Nodal Agency under this Agreement being found to be inaccurate or untrue.

14.2 Patent Indemnity:

14.2.1

(a) The TSP shall, subject to the Nodal Agency's compliance with Article 14.2.1 (b), indemnify and hold harmless the Nodal Agency and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Nodal Agency may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Agreement by reason of the setting up of the Project by the TSP.

Such indemnity shall not cover any use of the Project or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Agreement, any infringement resulting from the misuse of the Project or any part thereof, or any products produced in association or combination with any other equipment, plant or materials not supplied by the TSP, pursuant to the Agreement.

(b) If any proceedings are brought or any claim is made against the Nodal Agency arising out of the matters referred to in Article 14.2.1(a), the Nodal Agency shall promptly give the TSP a notice thereof, and the TSP shall at its own expense take necessary steps and attend such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. The TSP shall promptly notify the Nodal Agency of all actions taken in such proceedings or claims.

If the TSP fails to notify the Nodal Agency within twenty-eight (28) days after

receipt of such notice from the Nodal Agency under Article 14.2.1(b) above, that it intends to attend any such proceedings or claim, then the Nodal Agency shall be free to attend the same on their own behalf at the cost of the TSP. Unless the TSP has so failed to notify the Nodal Agency within the twenty eight (28) days period, the Nodal Agency shall make no admission that may be prejudicial to the defence of any such proceedings or claims.

(d) The Nodal Agency shall, at the TSP's request, afford all available assistance to the TSP in attending to such proceedings or claim, and shall be reimbursed by the TSP for all reasonable expenses incurred in so doing.

14.2.2

(a) The Nodal Agency, in accordance with the Regulations framed by CERC in this regard, subject to the TSP's compliance with Article 14.2.2(b) shall indemnify and hold harmless the TSP and its employees, officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs and expenses of whatsoever nature, including attorney's fees and expenses, which the TSP may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Agreement by reason of the setting up of the Project by the TSP.

(b) If any proceedings are brought or any claim is made against the TSP arising out of the matters referred to in Article 14.2.2 (a) the TSP shall promptly give the Nodal Agency a notice thereof, and the Nodal Agency shall at its own expense take necessary steps and attend such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. The Nodal Agency shall promptly notify the TSP of all actions taken in such proceedings or claims.

(c) If the Nodal Agency fails to notify the TSP within twenty-eight (28) days after receipt of such notice from the TSP under Article 14.2.2(b) above, that it intends to attend any such proceedings or claim, then the TSP shall be free to attend the same on its own behalf at the cost of the Nodal Agency. Unless the Nodal Agency has so failed to notify the TSP within the twenty (28) days period, the TSP shall make no admission that may be prejudicial to the defence of any such proceedings or claim.

(d) The TSP shall, at the Nodal Agency request, afford all available assistance to the Nodal Agency in attending to such proceedings or claim, and shall be reimbursed by the Nodal Agency for all reasonable expenses incurred in so

doing.

14.3 Monetary Limitation of liability

14.3.1 A Party ("Indemnifying Party") shall be liable to indemnify the other Party ("Indemnified Party") under this Article 14 for any indemnity claims made in a Contract Year only up to an amount of **Rs.8.58 Crore (Rupees Eight Crore Fifty Eight Lakh Only).**

14.4 Procedure for claiming indemnity

14.4.1 Where the Indemnified Party is entitled to indemnification from the Indemnifying Party pursuant to Articles 14.1 or 14.2 the Indemnified Party shall promptly notify the Indemnifying Party of such claim, proceeding, action or suit referred to in Articles 14.1 or 14.2 in respect of which it is entitled to be indemnified. Such notice shall be given as soon as reasonably practicable after the Indemnified Party becomes aware of such claim, proceeding, action or suit. The Indemnifying Party shall be liable to settle the indemnification claim within thirty (30) days of receipt of the above notice.

Provided however that, if:

i. the Parties choose to contest, defend or litigate such claim, action, suit or proceedings in accordance with Article 14.4.3 below; and

ii. the claim amount is not required to be paid/deposited to such third party pending the resolution of the Dispute,

the Indemnifying Party shall become liable to pay the claim amount to the Indemnified Party or to the third party, as the case may be, promptly following the resolution of the Dispute, if such Dispute is not settled in favour of the Indemnified Party.

14.4.2 The Indemnified Party may contest, defend and litigate a claim, action, suit or proceeding for which it is entitled to be indemnified under Articles 14.1 or 14.2 and the Indemnifying Party shall reimburse to the Indemnified Party all reasonable costs and expenses incurred by the Indemnified Party. However, such Indemnified Party shall not settle or compromise such claim, action, suit or proceedings without first getting the consent of the Indemnifying Party, which consent shall not be unreasonably withheld or delayed.

14.4.3 An Indemnifying Party may, at its own expense, assume control of the defence of any proceedings brought against the Indemnified Party if it acknowledges its obligation to indemnify such Indemnified Party, gives such Indemnified Party prompt notice of its intention to assume control of the defence, and employs an independent legal counsel at its own cost that is reasonably satisfactory to the Indemnified Party.

14.5 Limitation on Liability

14.5.1 Except as expressly provided in this Agreement, neither the TSP nor the Nodal Agency nor their respective officers, directors, agents, employees or Affiliates (including, officers, directors, agents or employees of such Affiliates), shall be liable or responsible to the other Party or its Affiliates including its officers, directors, agents, employees, successors, insurers or permitted assigns for incidental, indirect or consequential, punitive or exemplary damages, connected with or resulting from performance or non-performance of this Agreement, or anything done in connection herewith, including claims in the nature of lost revenues, income or profits (other than payments expressly required and properly due under this Agreement), any increased expense of, reduction in or loss of transmission capacity or equipment used therefore, irrespective of whether such claims are based upon breach of warranty, tort (including negligence, whether of the Nodal Agency, the TSP or others), strict liability, contract, breach of statutory duty, operation of law or otherwise.

14.5.2 The Nodal Agency shall have no recourse against any officer, director or shareholder of the TSP or any Affiliate of the TSP or any of its officers, directors or shareholders for such claims excluded under this Article. The TSP shall also have no recourse against any officer, director or shareholder of the Nodal Agency, or any Affiliate of the Nodal Agency or any of its officers, directors or shareholders for such claims excluded under this Article.

14.6 Duty to Mitigate

The party entitled to the benefit of an indemnity under this Article 14 shall take all reasonable measures to mitigate any loss or damage which has occurred. If the Party fails to take such measures, the other Party's liabilities shall be correspondingly reduced.

ARTICLE: 15

15. ASSIGNMENTS AND CHARGES

15.1 Assignments:

15.1.1 This Agreement shall be binding upon, and inure to the benefit of the Parties and their respective successors and permitted assigns. This Agreement shall not be assigned by any Party, except as provided in Article 15.3.

15.2 Permitted Charges:

15.2.1 Neither Party shall create or permit to subsist any encumbrance over all or any of its rights and benefits under this Agreement.

15.2.2 However, the TSP may create any encumbrance over all or part of the receivables, or the Project Assets of the Project in favour of the Lenders or the Lenders' Representative on their behalf, as security for amounts payable under the Financing Agreements and any other amounts agreed by the Parties.

Provided that:

i. the Lenders or the Lenders' Representative on their behalf shall have entered into the Financing Agreements and agreed in writing to the provisions of this Agreement; and

ii. any encumbrance granted by the TSP in accordance with this Article 15.2.2 shall contain provisions pursuant to which the Lenders or the Lender's Representative on their behalf agrees unconditionally with the TSP to release from such encumbrances upon payment by the TSP to the Lenders of all amounts due under the Financing Agreements.

15.2.3 Article 15.2.1 does not apply to:

a. liens arising by operation of law (or by an agreement evidencing the same) in the ordinary course of the TSP developing and operating the Project;

b. pledges of goods, the related documents of title and / or other related documents, arising or created in the ordinary course of the TSP developing and operating the Project; or

c. security arising out of retention of title provisions in relation to goods acquired in the ordinary course of the TSP developing and operating the Project.

15.3 Substitution Rights of the Lenders

15.3.1 The TSP would need to operate and maintain the Project under the provisions of this Agreement and cannot assign the Transmission License or transfer the Project or part thereof to any person by sale, lease, exchange or otherwise, without the prior approval of the Nodal Agency.

15.3.2 However, in the case of default by the TSP in debt repayments or in the case of default by the TSP as per Article 13 of this Agreement during the debt repayments, the Commission may, on an application from the Lenders, assign the Transmission License to the nominee of the Lenders subject to the fulfilment of the qualification requirements and provisions of the Central Electricity Regulatory Commission (Procedure, terms and Conditions for grant of Transmission License and other related matters) Regulations, 2006 and as amended from time to time.

ARTICLE: 16

16. GOVERNING LAW AND DISPUTE RESOLUTION

16.1 Governing Law:

This Agreement shall be governed by and construed in accordance with the Laws of India. Any legal proceedings in respect of any matters, claims or disputes under this Agreement shall be under the jurisdiction of appropriate courts in Delhi.

16.2 Amicable Settlement:

16.2.1 Either Party is entitled to raise any claim, dispute or difference of whatever nature arising under, out of or in connection with this Agreement, including its existence or validity or termination or whether during the execution of the Project or after its completion and whether prior to or after the abandonment of the Project or termination or breach of the Agreement by giving a written notice to the other Party, which shall contain:

(i) a description of the Dispute;

(ii) the grounds for such Dispute; and

(iii) all written material in support of its claim.

16.2.2 The other Party shall, within thirty (30) days of issue of notice issued under Article 16.2.1, furnish:

(i) counter-claim and defences, if any, regarding the Dispute; and

(ii) all written material in support of its defences and counter-claim.

16.2.3 Within thirty (30) days of issue of notice by the Party pursuant to Article 16.2.1, if the other Party does not furnish any counter claim or defense under Article 16.2.2, or thirty (30) days from the date of furnishing counter claims or defence by the other Party, both the Parties to the Dispute shall meet to settle such Dispute amicably. If the Parties fail to resolve the Dispute amicably within thirty (30) days from the later of the dates mentioned in this Article 16.2.3, the Dispute shall be referred for dispute resolution in accordance with Article 16.3.

16.3 Dispute Resolution:

All Disputes shall be adjudicated by the Commission.

16.4 Parties to Perform Obligations:

Notwithstanding the existence of any Dispute and difference referred to the Commission as provided in Article 16.3 and save as the Commission may otherwise direct by a final or interim order, the Parties hereto shall continue to perform their respective obligations/ roles (which are not in dispute) under this Agreement.

ARTICLE: 17

17. REPRESENTATION AND WARRANTIES

17.1 Representation and warranties of the Nodal Agency

17.1.1 The Nodal Agency hereby represents and warrants to and agrees with the TSP as follows and acknowledges and confirms that the TSP is relying on such representations and warranties in connection with the transactions described in this Agreement:

a. It has all requisite powers and authority to execute and consummate this Agreement;

b. This Agreement is enforceable against the Nodal Agency in accordance with its terms;

c. The consummation of the transactions contemplated by this Agreement on the part of Nodal Agency will not violate any provision of nor constitute a default under, nor give rise to a power to cancel any charter, mortgage, deed of trust or lien, lease, agreement, license, permit, evidence of indebtedness, restriction, or other contract to which the Nodal Agency is a Party or to which the Nodal Agency is bound, which violation, default or power has not been waived;

17.2 Representation and Warranties of the TSP:

17.2.1 The TSP hereby represents and warrants to and agrees with the Nodal Agency as follows and acknowledges and confirms that the Nodal Agency is relying on such representations and warranties in connection with the transactions described in this Agreement:

a. It has all requisite powers and has been duly authorized to execute and consummate this Agreement;

b. This Agreement is enforceable against it, in accordance with its terms;

c. The consummation of the transactions contemplated by this Agreement on the part of the TSP will not violate any provision of nor constitute a default under, nor give rise to a power to cancel any charter, mortgage, deed of trust or lien, lease, agreement, license, permit, evidence of indebtedness, restriction, or other contract to which the TSP is a Party or to which the TSP is bound which violation, default or power has not been waived;

d. The TSP is not insolvent and no insolvency proceedings have been instituted, nor threatened or pending by or against the TSP;

e. There are no actions, suits, claims, proceedings or investigations pending or, to the best of the TSP's knowledge, threatened in writing against the TSP at law, in equity, or otherwise, and whether civil or criminal in nature, before or by, any court, commission, arbitrator or governmental agency or authority, and there are no outstanding judgments, decrees or orders of any such courts, commission, arbitrator or governmental agencies or authorities, which materially adversely affect its ability to execute the Project or to comply with its obligations under this Agreement.

17.2.2 The TSP makes all the representations and warranties above to be valid as on the Effective Date of this Agreement.

ARTICLE: 18

18. INDEPENDENT ENGINEER

18.1 Appointment of Independent Engineer

The Nodal Agency shall appoint an agency/ company as Independent Engineer as per framework provided in the Guidelines for Encouraging Competition in Development of Transmission Projects for selection of Independent Engineer.

18.2 Roles and functions of Independent Engineer

The role and functions of the Independent Engineer shall include the following:

a. Progress Monitoring as required under this Agreement;

b. Ensuring Quality as required under this Agreement;

c. determining, as required under the Agreement, the costs of any works or services and/or their reasonableness during construction phase;

d. determining, as required under the Agreement, the period or any extension thereof, for performing any duty or obligation during construction phase;

e. determining, as required under the Agreement, the valuation of the Project Assets.

f. Assisting the Parties in resolution of Disputes and

g. Undertaking all other duties and functions in accordance with the Agreement.

18.3 Remuneration of Independent Engineer

The fee and charges of the Independent Engineer shall be paid by the Nodal Agency as per terms & conditions of appointment.

18.4 Termination of appointment

18.4.1 The Nodal Agency may, in its discretion, terminate the appointment of the Independent Engineer at any time, but only after appointment of another Independent Engineer.

18.4.2 If the TSP has reason to believe that the Independent Engineer is not discharging its duties and functions in a fair, efficient and diligent manner, it may make a written representation to the Nodal Agency and seek termination of the appointment of the Independent Engineer. Upon receipt of such representation, the Nodal Agency shall

hold a tripartite meeting with the TSP and Independent Engineer for an amicable resolution, and the decision of Nodal agency is final. In the event that the appointment of the Independent Engineer is terminated hereunder, the Nodal Agency shall appoint forthwith another Independent Engineer.

18.5 Authorised signatories

The Nodal Agency shall require the Independent Engineer to designate and notify to the Nodal Agency up to 2 (two) persons employed in its firm to sign for and on behalf of the Independent Engineer, and any communication or document required to be signed by the Independent Engineer shall be valid and effective only if signed by any of the designated persons; provided that the Independent Engineer may, by notice in writing, substitute any of the designated persons by any of its employees.

ARTICLE: 19

19. MISCELLANEOUS PROVISIONS

19.1 Equity Lock-in Commitment:

19.1.1 The aggregate equity share holding of the Selected Bidder in the issued and paid up equity share capital of **ANANTAPUR II REZ TRANSMISSION LIMITED** shall not be less than Fifty one percent (51%) up to a period of one (1) year after COD of the Project.

Provided that, in case the Lead Member or Bidding Company is holding equity through Affiliate/s, Ultimate Parent Company or Parent Company, such restriction as specified above shall apply to such entities.

Provided further, that in case the Selected Bidder is a Bidding Consortium, the Lead Member shall continue to hold equity of at least twenty six percent (26%) upto a period of one (1) year after COD of the Project and any Member of such Bidding Consortium shall be allowed to divest its equity as long as the other remaining Members (which shall always include the Lead Member) hold the minimum equity specified above.

19.1.2 If equity is held by the Affiliates, Parent Company or Ultimate Parent Company of the Selected Bidder, then, subject to the second proviso to Article 19.1.1, such Affiliate, Parent Company or Ultimate Parent Company shall be eligible to transfer its shareholding in **ANANTAPUR II REZ TRANSMISSION LIMITED** to another Affiliate or to the Parent Company / Ultimate Parent Company of the Selected Bidder. If any such shareholding entity, qualifying as an Affiliate / Parent Company / Ultimate Parent Company, is likely to cease to meet the criteria to qualify as an Affiliate / Parent Company / Ultimate Parent Company, the shares held by such entity shall be transferred to another Affiliate / Parent Company / Ultimate Parent Company of the Selected Bidder.

19.1.3 Subject to Article 19.1.1, all transfer(s) of shareholding of **ANANTAPUR II REZ TRANSMISSION LIMITED** by any of the entities referred to in Article 19.1.1 and 19.1.2 above, shall be after prior written intimation to the Nodal Agency.

19.1.4 For computation of effective Equity holding, the Equity holding of the Selected Bidder or its Ultimate Parent Company in such Affiliate(s) or Parent Company and the equity holding of such Affiliate(s) or Ultimate Parent Company in **ANANTAPUR II REZ TRANSMISSION LIMITED** shall be computed in accordance with the example given below:

If the Parent Company or the Ultimate Parent Company of the Selected Bidder A

directly holds thirty percent (30%) of the equity in **ANANTAPUR II REZ TRANSMISSION LIMITED,** then holding of Selected Bidder A in **ANANTAPUR II REZ TRANSMISSION LIMITED** shall be thirty percent (30%);

If Selected Bidder A holds thirty percent (30%) equity of the Affiliate and the Affiliate holds fifty percent (50%) equity in **ANANTAPUR II REZ TRANSMISSION LIMITED,** then, for the purposes of ascertaining the minimum equity/equity lock-in requirements specified above, the effective holding of Bidder A in **ANANTAPUR II REZ TRANSMISSION LIMITED** shall be fifteen percent (15%), (i.e., 30% x 50%)

19.1.5 The provisions as contained in this Article 19.1 shall override the terms of the consortium agreement submitted as part of the Bid.

19.1.6 The TSP shall be responsible to report to Nodal Agency, within thirty (30) days from the occurrence of any event that would result in any change in its equity holding structure from that which existed as on the date of signing of the Share Purchase Agreement. In such cases, the Nodal Agency would reserve the right to ascertain the equity holding structure and to call for all such required documents / information / clarifications as may be required.

19.2 Commitment of maintaining Qualification Requirement

19.2.1 The Selected Bidder will be required to continue to maintain compliance with the Qualification Requirements, as stipulated in RFP Document, till the COD of the Project. Where the Technically Evaluated Entity and/or the Financially Evaluated Entity is not the Bidding Company or a Member in a Bidding Consortium, as the case may be, the Bidding Company or Member shall continue to be an Affiliate of the Technically Evaluated Entity and/or Financially Evaluated Entity till the COD of the Project.

19.2.2 Failure to comply with the aforesaid provisions shall be dealt in the same manner as TSP's Event of Default as under Article 13 of this Agreement.

19.3 Language:

19.3.1 All agreements, correspondence and communications between the Parties relating to this Agreement and all other documentation to be prepared and supplied under the Agreement shall be written in English, and the Agreement shall be construed and interpreted in accordance with English language.

19.3.2 If any of the agreements, correspondence, communications or documents are prepared in any language other than English, the English translation of such agreements, correspondence, communications or documents shall prevail in

matters of interpretation.

19.4 Affirmation

The TSP and the Nodal Agency, each affirm that:

1. neither it nor its respective directors, employees, or agents has paid or undertaken to pay or shall in the future pay any unlawful commission, bribe, pay-off or kick-back; and
2. it has not in any other manner paid any sums, whether in Indian currency or foreign currency and whether in India or abroad to the other Party to procure this Agreement, and the TSP and the Nodal Agency hereby undertake not to engage in any similar acts during the Term of Agreement.

19.5 Severability

The invalidity or enforceability, for any reason, of any part of this Agreement shall not prejudice or affect the validity or enforceability of the remainder of this Agreement, unless the part held invalid or unenforceable is fundamental to this Agreement.

19.6 Counterparts

This Agreement may be executed in one or more counterparts, each of which shall be deemed an original and all of which collectively shall be deemed one and the same Agreement.

19.7 Breach of Obligations/ Roles

The Parties acknowledge that a breach of any of the obligations/ roles contained herein would result in injuries. The Parties further acknowledge that the amount of the liquidated damages or the method of calculating the liquidated damages specified in this Agreement is a genuine and reasonable pre-estimate of the damages that may be suffered by the non-defaulting Party in each case specified under this Agreement

19.8 Restriction of Shareholders / Owners Liability

19.8.1 Parties expressly agree and acknowledge that none of the shareholders of the Parties hereto shall be liable to the other Parties for any of the contractual obligations of the concerned Party under this Agreement.

19.8.2 Further, the financial liabilities of the shareholder(s) of each Party to this Agreement shall be restricted to the extent provided in the Indian Companies Act, 1956 / Companies Act, 2013 (as the case may be).

19.9 Taxes and Duties:

19.9.1 The TSP shall bear and promptly pay all statutory taxes, duties, levies and cess, assessed/levied on the TSP, its Contractors or their employees that are required to be paid by the TSP as per the Law in relation to the execution of the Project and for providing Transmission Service as per the terms of this Agreement.

19.9.2 The Nodal Agency shall be indemnified and held harmless by the TSP against any claims that may be made against the Nodal Agency in relation to the matters set out in Article 19.9.1.

19.9.3 The Nodal Agency shall not be liable for any payment of, taxes, duties, levies, cess whatsoever for discharging any obligation of the TSP by the Nodal Agency on behalf of TSP or its personnel, provided the TSP has consented in writing to the Nodal Agency for such work, for which consent shall not be unreasonably withheld.

19.10 No Consequential or Indirect Losses

The liability of the TSP shall be limited to that explicitly provided in this Agreement.

Provided that, notwithstanding anything contained in this Agreement, under no event shall the Nodal Agency or the TSP claim from one another any indirect or consequential losses or damages.

19.11 Discretion:

Except where this Agreement expressly requires a Party to act fairly or reasonably, a Party may exercise any discretion given to it under this Agreement in any way it deems fit.

19.12 Confidentiality

19.12.1 The Parties undertake to hold in confidence this Agreement and RFP Project Documents and not to disclose the terms and conditions of the transaction contemplated hereby to third parties, except:

(a) to their professional advisors;

(b) to their officers, contractors, employees, agents or representatives, financiers, who need to have access to such information for the proper performance of their activities; or

(c) disclosures required under Law,

without the prior written consent of the other Parties.

Provided that, the TSP agrees and acknowledges that the Nodal Agency, may, at any time, disclose the terms and conditions of the Agreement and the RFP Project Documents to any person, to the extent stipulated under the Law and the Competitive Bidding Guidelines.

19.13 Order of priority in application:

Save as provided in Article 2.5, in case of inconsistencies between the terms and conditions stipulated in Transmission License issued by the Commission to the TSP, agreement(s) executed between the Parties, applicable Law including rules and regulations framed thereunder, the order of priority as between them shall be the order in which they are placed below:

- terms and conditions of Transmission License;
- applicable Law, rules and regulations framed thereunder;
- this Agreement;
- Agreement(s), if any, under Sharing Regulations.

19.14 Independent Entity:

19.14.1 The TSP shall be an independent entity performing its obligations pursuant to the Agreement.

19.14.2 Subject to the provisions of the Agreement, the TSP shall be solely responsible for the manner in which its obligations under this Agreement are to be performed. All employees and representatives of the TSP or Contractors engaged by the TSP in connection with the performance of the Agreement shall be under the complete control of the TSP and shall not be deemed to be employees, representatives, Contractors of the Nodal Agency and nothing contained in the Agreement or in any agreement or contract awarded by the TSP shall be construed to create any contractual relationship between any such employees, representatives or Contractors and the Nodal Agency.

19.15 Amendments:

19.15.1 This Agreement may only be amended or supplemented by a written agreement between the Parties.

19.16 Waiver:

19.16.1 No waiver by either Party of any default or breach by the other Party in the performance of any of the provisions of this Agreement shall be effective unless in

writing duly executed by an authorised representative of such Party.

19.16.2 Neither the failure by either Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement nor time or other indulgence granted by one Party to the other Parties shall act as a waiver of such breach or acceptance of any variation or the relinquishment of any such right or any other right under this Agreement, which shall remain in full force and effect.

19.17 Relationship of the Parties:

This Agreement shall not be interpreted or construed to create an association, joint venture, or partnership or agency or any such other relationship between the Parties or to impose any partnership obligation or liability upon either Party and neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

19.18 Entirety:

19.18.1 This Agreement along with its sections, schedules and appendices is intended by the Parties as the final expression of their agreement and is intended also as a complete and exclusive statement of the terms of their agreement.

19.18.2 Except as provided in this Agreement, all prior written or oral understandings, offers or other communications of every kind pertaining to this Agreement or the provision of Transmission Service under this Agreement to the Nodal Agency by the TSP shall stand superseded and abrogated.

19.19 Notices:

19.19.1 All notices or other communications which are required to be given under this Agreement shall be in writing and in the English language

19.19.2 If to the TSP, all notices or communications must be delivered personally or by registered post or facsimile or any other mode duly acknowledged to the addressee below:

Address	:	Resonia Ltd, DLF Cyber Park, Tower B, 9th Floor, Udyog Vihar Phase-III, Sector-20 Gurugram-122008
Attention	:	T. Amarendranath Reddy
Email	:	tan.reddy@sterlite.com
Fax. No.	:	
Telephone No.	:	+91 9310 4909 76

19.19.3 If to the Nodal Agency, all notices or communications must be delivered personally

or by registered post or facsimile or any other mode duly acknowledged to the addresses below:

(i) **Central Transmission Utility of India Limited (Nodal Agency)**

Address	: 5th to 10th Floor, IRCON International Tower, Tower no-1, Plot no -16 , Sector-32, Gurugram, Haryana :122003
Attention	: Ramachandra, Sr GM
Email	: ramachand@powergrid.in
Fax. No.	:
Telephone No.	: 9910378128

19.19.4 All notices or communications given by facsimile shall be confirmed by sending a copy of the same via post office in an envelope properly addressed to the appropriate Party for delivery by registered mail. All notices shall be deemed validly delivered upon receipt evidenced by an acknowledgement of the recipient, unless the Party delivering the notice can prove in case of delivery through the registered post that the recipient refused to acknowledge the receipt of the notice despite efforts of the postal authorities.

19.19.5 Any Party may by notice of at least fifteen (15) days to the other Party change the address and/or addresses to which such notices and communications to it are to be delivered or mailed.

19.20 Fraudulent and Corrupt Practices

19.20.1 The TSP and its respective officers, employees, agents and advisers shall observe the highest standard of ethics during the subsistence of this Agreement. Notwithstanding anything to the contrary contained in the Agreement, the Nodal Agency may terminate the Agreement without being liable in any manner whatsoever to the TSP, if it determines that the TSP has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bid process. In such an event, the Nodal Agency shall forfeit the Contract Performance Guarantee of the TSP, without prejudice to any other right or remedy that may be available to the Nodal Agency hereunder or subsistence otherwise.

19.20.2 Without prejudice to the rights of the Nodal Agency under Clause 19.20.1 hereinabove and the rights and remedies which the Nodal Agency may have under this Agreement, if a TSP is found by the Nodal Agency to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bid

process, or after the issue of Letter of Intent (hereinafter referred to as LoI) or after the execution of the agreement(s) required under Sharing Regulations, the Nodal Agency may terminate the Agreement without being liable in any manner whatsoever to the TSP. Further, the TSP & its Affiliates shall not be eligible to participate in any tender or RFP issued by any BPC for an indefinite period from the date such TSP is found by the Nodal Agency to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practices, as the case may be.

19.20.3 For the purposes of this Clause 19.20, the following terms shall have the meaning hereinafter respectively assigned to them:

(a) **"corrupt practice"** means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bid process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the BPC who is or has been associated or dealt in any manner, directly or indirectly with the Bid process or the LoI or has dealt with matters concerning the RFP Project Documents or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the BPC, shall be deemed to constitute influencing the actions of a person connected with the Bid Process); or (ii) engaging in any manner whatsoever, whether during the Bid Process or after the issue of the LoI or after the execution of the RFP Project Documents, as the case may be, any person in respect of any matter relating to the Project or the LoI or the RFP Project Documents, who at any time has been or is a legal, financial or technical adviser of the BPC in relation to any matter concerning the Project;

(b)**"fraudulent practice"** means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bid process;

(c) **"coercive practice"** means impairing or harming, or threatening to impair or harm, directly or indirectly, any person or property to influence any person's participation or action in the Bid process;

(d) **"undesirable practice"** means (i) establishing contact with any person connected with or employed or engaged by the BPC with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bid process; or (ii) having a Conflict of Interest; and

(e) **"restrictive practice"** means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Bid process;

19.21 Compliance with Law:

Despite anything contained in this Agreement but without prejudice to Article 12, if any provision of this Agreement shall be in deviation or inconsistent with or repugnant to the provisions contained in the Electricity Act, 2003, or any rules and regulations made there under, such provision shall be deemed to be amended to the extent required to bring it into compliance with the aforesaid relevant provisions as amended from time to time.

IN WITNESS WHEREOF, THE PARTIES HAVE CAUSED THIS AGREEMENT TO BE EXECUTED BY THEIR DULY AUTHORISED REPRESENTATIVES AS OF THE DATE AND PLACE SET FORTH ABOVE.

1. For and on behalf of ATSP

T. Amarendranath Reddy

[Signature, Name, Designation and Address]

2. For and on behalf of **Central Transmission Utility of India Limited (Nodal Agency)**

KAMAL KUMAR JAIN
Senior General Manager

[Signature, Name, Designation and Address]

WITNESSES:

1. For and on behalf of

: **BPC**

[Signature]

Naveen Phogat, GM-PFCCL

[Insert, Name, Designation and Address of the Witness]

2. For and on behalf of

: **Nodal Agency**

[Signature]

Deepak Krishnan, Mgr, CTUIL

[Insert Name, Designation and Address of the Witness]

SCHEDULES

Schedule: 1

Project Description and Scope of Project

A. Description of the Transmission Scheme

Government of India has set a target of 500 GW generation capacity from non-fossil fuel resources by 2030. In this direction, MNRE has identified addition of 86 GW RE Potential in the State of Andhra Pradesh, Telangana, Karnataka and Tamil Nadu (Offshore) in Southern Region. Out of the identified (86 GW) RE Potential in Southern Region, 51 GW has been identified in the State of Andhra Pradesh (Ananthapur– 20 GW, Kurnool – 23 GW and Kadapa – 8 GW).

A report on Transmission System for Integration of over 500 GW RE Capacity has been published by CEA on 07.12.2022 which includes the comprehensive transmission system for integration of 51 GW RE Potential in Andhra Pradesh.

The "Transmission System for integration of Anantapur-II REZ - Phase-I" shall facilitate immediate integration and evacuation of power from RE generation projects for about 4.5 GW of RE potential in Ananthapur area out of the identified total potential of 20 GW in Ananthapur, Andhra Pradesh.

Presently, Connectivity of about 3500 MW (2500 MW at 220 kV level and 1000 MW at 400 kV level) has been granted / agreed for grant at Ananthapuram-II PS.

The Transmission System was discussed and agreed in the 32nd CMETS-SR held on 28.06.2024. The scheme was further discussed and agreed in the 52nd SRPC meeting held on 03.08.2024.

The National Committee on Transmission in its 22nd meeting held on 23.08.2024 has recommended the implementation of the subject transmission scheme through TBCB route and has identified the PFC Consulting Limited as BPC for bidding of the transmission scheme.

Ministry of Power vide Gazette notification no. CG-DL-E-13092024-257122 dated 12.09.2024 has notified the transmission scheme for implementation through TBCB route.

B. Detailed Scope of Work

Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)		
S No.	**Name of Transmission Element**	**Scheduled COD in months from Effective Date**
1.	Establishment of 4x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level. • 765/400 kV, 1500 MVA, ICTs – 4 Nos. (13x500 MVA incl. 1 spare unit) • 765 kV ICT bays – 4 Nos. • 400 kV ICT bays – 4 Nos. • 400/220 kV, 500 MVA, ICTs – 6 Nos. • 400 kV ICT bays – 6 Nos. • 220 kV ICT bays – 6 Nos. • 765 kV line bays – 4 Nos. (at Ananthapuram-II PS for termination of Ananthapuram-II – Davanagere and Ananthapuram-II – Cuddapah 765kV D/C lines) • 765 kV, 330 MVAr Bus Reactor – 2 Nos. • 765 kV Bus Reactor bays – 2 Nos. • 220 kV line bays – 6 Nos. • 220 kV Bus Sectionalizer : 1 set • 220 kV Bus Coupler (BC) Bay – 2 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos. **Future Space Provisions:** • 765/400 kV, 1500 MVA, ICTs – 2 Nos. • 765 kV ICT bays – 2 Nos. • 400 kV ICT bays – 2 Nos. • 400/220 kV, 500 MVA, ICTs – 12 Nos. • 400 kV ICT bays – 12 Nos. • 220 kV ICT bays – 12 Nos. • 765 kV line bays – 8 Nos. (with provision for SLR) • 400 kV line bays – 12 Nos. (with provision for SLR) • 220 kV line bays – 20 Nos. • 220 kV Bus Sectionalizer : 2 sets • 220 kV Bus Coupler (BC) Bay – 2 Nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos. • 400 kV Bus Sectionalizer : 1 set	**24 Months** **(31.03.2027)**
2.	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits	

	• 765 kV line bays – 2 Nos. (at Davanagere PS) • 765 kV, 240 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x80 MVAr including 1 switchable spare unit)	
3.	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits • 765 kV line bays – 2 Nos. (at Cuddapah) • 765 kV, 330 MVAr SLR at Ananthapuram-II PS – 2 Nos. (7x110 MVAr including 1 switchable spare unit for both bus reactor and line reactor)	
4.	+300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR • 400 kV bay – 1 No.	

Note:

i. *POWERGRID shall provide space for 2 Nos. of 765 kV GIS line bays (only 765 kV line terminal equipments) at Cuddapah for termination of Ananthapuram-II PS – Cuddapah 765 kV D/C line*

ii. *Developer of Davanagere PS shall provide space for 2 Nos. of 765 kV line bays at Davanagere PS for termination of Ananthapuram-II PS – Davanagere 765 kV D/C line*

SPECIFIC TECHNICAL REQUIREMENTS FOR TRANSMISSION LINE

The design, routing and construction of transmission lines shall be in accordance with Chapter V, Part A of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022, as amended from time to time. Other CEA Regulations/ guidelines as amended up to date and MoP guidelines, as applicable, shall also be followed.

A.1.0 Selection of tower type shall be made as per CEA Regulations, however, in case lattice type towers are used, the following shall also be applicable:

A.2.0 Steel section of grade E 250 and/or grade E 350 as per IS 2062, only are permitted for use in towers, extensions, gantry structures and stub setting templates. For towers in snowbound areas, steel sections shall conform to Grade-C of IS-2062.

A.3.0 Towers shall be designed as per IS-802:2015, however the drag coefficient of the tower shall be as follows: -

Solidity Ratio	Drag Coefficient
Upto 0.05	3.6
0.1	3.4
0.2	2.9
0.3	2.5
0.4	2.2
0.5 and above	2.0

A.4.0 Transmission Service Provider (TSP) shall adopt any additional loading/design criteria for ensuring reliability of the line, if so desired and /or deemed necessary.

A.5.0 Transmission line shall be designed considering wind zones as specified in wind map given in National Building Code 2016, Vol.1. The developer shall also make his own assessment of local wind conditions and frequent occurrences of High Intensity Winds (HIW) due to thunderstorms, dust storms, downburst etc. along the line route and wherever required, higher wind zone than that given in wind map shall be considered for tower design for ensuring reliability of line. Further, for transmission line sections passing within a distance of 50 km from the boundary of two wind zones, higher of the two wind zones shall be considered for design of towers located in such sections.

A.6.0 Selection of reliability level for design of tower shall be as per CEA Regulation (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022, as amended from time to time.

A.7.0 A) Under crossing of the existing transmission line of same Voltage shall not be allowed. In the case where it is inevitable to under-cross the existing transmission line then TSP shall seek prior approval from Chief Electrical Inspector, CEA with detailed study ensuring that all statutory electrical clearances and Electric Field limit of 10 kV/m at 1 m and 1.8 m from ground level is not violated.

B) For power line crossing of 400 kV or above voltage level large angle and dead end towers (i.e. D/DD/QD) shall be used on either side of power line crossing.

C) For power line crossing of 132 kV and 220 kV (or 230 kV) voltage level, angle towers (B/C/D/DB/DC/DD/ QB/QC/QD) shall be used on either side of power line crossing depending upon the merit of the prevailing site condition and line deviation requirement.

D) For power line crossing of 66 kV and below voltage level, suspension/tension towers shall be provided on either side of power line crossing depending upon the merit of the prevailing site condition and line deviation requirement.

E) For crossing of railway tracks, national highways and state highways, the rules/ regulations of appropriate authorities shall be followed.

A.8.0 The relevant conductor configuration for 765 kV shall be as follows: -

i. **Ananthapuram-II – Davangere 765 kV D/C line**
ii. **Ananthapuram-II – Cuddapah 765 kV D/C line**

Type of conductor: ACSR / AAAC / AL59

Basic Parameters:

Transmission line	ACSR Conductor specified	Equivalent AAAC conductor based on 53.5% conductivity of Al Alloy	Equivalent minimum size of AL59 conductor based on 59% conductivity of AL Alloy*	Sub-conductor Spacing
765 kV D/C (Hexa Bundle) Transmission Lines	**Zebra : Stranding** 54/3.18 mm-Al + 7/3.18 mm-Steel, 428 mm^2, Aluminium area, 28.62 mm diameter Maximum DC Resistance at 20°C (Ω/km): 0.06868 Minimum UTS: 130.32 kN	**Stranding details:** 61/3.19 mm, 487.5 mm^2 Aluminium alloy area 28.71 mm diameter Maximum DC Resistance at 20°C (Ω/km): 0.06815 Minimum UTS: 135.6 kN	**Stranding details:** 61/3.08 mm, 454 mm^2 Aluminium alloy area 27.72 mm diameter Maximum DC Resistance at 20°C (Ω/km): 0.0653 Minimum UTS: 108 kN	457 mm

Note:

1. **To select any size above the minimum, the sizes mentioned in the Indian standard IS-398(part-6) shall be followed.*
2. *The transmission lines shall have to be designed for a maximum operating conductor temperature of 85 deg C.*

A.9.0 The required phase to phase spacing and horizontal spacing for 765 kV line shall be governed by the tower design as well as minimum live metal clearances for 765 kV voltage level under different insulator swing angles. However, the phase to phase spacing for 765 kV line shall not be less than 15 m.

A.10.0 All electrical clearances including minimum live metal clearance, ground clearance and minimum mid span separation between earth wire and conductor as given below shall be considered:

Minimum live metal clearances for 765 kV line:

a) (i) Under stationary conditions

From tower body: For 765 kV D/C: 6.1 m

For 765 kV S/C: 5.6 m

(ii) Under swing conditions

Wind Pressure Condition	Minimum Electrical Clearance
a) Swing angle (25º)	4.4 m
b) Swing angle (55º)	1.3 m

b) Minimum ground clearance for 765 kV line: 18 m

c) Minimum mid span separation between earth-wire and conductor for 765 kV line: 9.0 m

A.11.0 The shielding angle shall not exceed 10 deg for 765 kV D/C transmission line.

A.12.0 The Fault current for design of line shall be 50 kA for 1 sec for 765 kV.

A.13.0 In case of 400 kV and above voltage class lines, at least one out of two earth wires shall be OPGW and second earth wire, if not OPGW, shall be either of Galvanized Standard Steel (GSS) or Aluminum Alloy Conductor Steel Reinforced (AACSR) or any other suitable conductor type depending upon span length and other technical consideration.

A.14.0 Each tower shall be earthed such that tower footing impedance does not exceed 10 ohms. Pipe type or Counterpoise type earthing shall be provided in accordance with relevant IS. Additional earthing shall be provided on every 7 to 8 km distance for direct earthing of both shield wires. If site condition demands, multiple earthing or use of earthing enhancement compound shall be used.

A.15.0 Pile type foundation shall be used for towers located in river or creek bed or on bank of river having scourable strata or in areas where river flow or change in river course is anticipated, based on detailed soil investigation and previous years' maximum flood discharge of the river, maximum velocity of water, highest flood level, scour depth and anticipated change in course of river based on river morphology data of at least past 20 years to ensure availability and reliability of the transmission line.

A.16.0 Transmission line route shall be finalized, in consultation with appropriate authorities so as to avoid the habitant zones of endangered species and other protected species. Bird diverters, wherever required, shall be provided on the line. In order to optimize the route, use of GATISHAKTI platform shall also be made.

A.17.0 Wherever, transmission lines are passing through cyclone prone areas i.e., areas upto 60 km from coast following shall also be applicable:

a) Terrain category-I, with terrain roughness factor (K2) of 1.08 shall be considered for tower design for exposed open terrain with few or no obstruction, which also includes open sea coasts, open stretch of water, desert and flat treeless plains.

b) Importance factor for cyclonic region (K4) of 1.3 shall be considered for tower design.

c) The number of consecutive spans between the section points/ angle point shall not exceed 10 spans or 3 km instead of conventional practice of 15 spans or 5 km, in order to reduce the failure of such towers in coastal areas due to cascading effect. The section shall be terminated with tension tower/ angle tower and angle of deviation should be based on the site requirement.

A.18.0 Wherever, transmission lines are passing through cyclone prone areas (i.e. areas upto 60 km from coast)/ creek regions/ aggressive soil areas following shall also be applicable:

a) The fabricated tower parts and stubs shall have a minimum overall zinc coating of 900 g/m^2 of surface area except for plates and sections below 5 mm which shall have a minimum overall zinc coating of 610 g/m^2 of surface area. The average zinc coating for all sections and plates 5 mm and above shall be maintained as 127 microns and that for plates and sections below 5 mm shall be maintained as 87 microns.

b) Ready mix concrete of M30 Grade shall be used to avoid use of locally available saline water. However, design mix concrete of M30 Grade conforming to IS 456 with potable water can be used at locations where transportation of ready-mix concrete is not feasible. Minimum cement content in any case shall not be less than 330kg/m^3.

c) The surface of the reinforced steel shall be treated with epoxy-based coating to enhance corrosion performance of foundation. Use of epoxy coated reinforcement in foundation shall be as per IS 13620. In addition, two (2) coats of bituminous painting of minimum 1.6 kg/m^2 per coat shall be applied on all exposed faces of foundation (i.e. pedestal and base slab).

d) Double coat 20 mm thick cement plaster shall be provided on all exposed concrete surface as well up to 300 mm below ground level to give protection to concrete surface from environmental and saline effect.

e) Before coping of chimney top portion, three coats of anti-corrosive paint of minimum 30-35 microns dry film thickness each shall be applied on the stub in the 50 mm coping portion as well as up to 350 mm above CL portion.

A.19.0 The raised chimney foundation is to be provided in areas prone to flooding/water stagnation like paddy field /agricultural field and undulated areas to avoid direct contact of water with steel part of tower. The top of the chimney of foundation should be at least above HFL (High Flood Level) or the historical water stagnation/ logging level (based on locally available data) or above High Tide Level or 500 mm above Natural Ground level (whichever is higher).

A.20.0 Routing of transmission line through protected areas of India shall be avoided to the extent possible. In case, it is not possible to avoid protected areas, the towers of the transmission line upto 400 kV level, which are installed in protected areas shall be designed for Multi-circuit (4

circuits) configuration of same voltage level considering reliability level of at least two (2). The top two circuits of these multi-circuit towers shall be used for stringing of the transmission line under present scope and the bottom two circuits shall be made available for stringing of any future transmission line of any transmission service providers/ State transmission utilities/Central transmission utilities passing through the same protected area. Further, the configuration and coordinates of such transmission towers shall be submitted to CEA, CTU and BPC by the TSP.

A.21.0 The TSP shall abide by the Guidelines of CEA w.r.t. shifting of transmission lines for NHAI projects and other projects.

A.22.0 Safety precautions in regards to gas/oil pipelines in vicinity of Transmission lines shall be taken in coordination with gas/ petroleum authorities.

A.23.0 RoW width and Span in different terrain shall be as per Schedule VII of CEA (Technical Standards for Construction of Electrical plants and Electric Lines) Regulations 2022 and RoW guidelines issued vide CEA-PS-14-86/2/2019-PSETD Division dated 24.09.2024.

A.24.0 The stringing of the transmission line in forest area shall be carried out through drone.

SPECIFIC TECHNICAL REQUIREMENTS FOR SUBSTATION

The proposed **Ananthapuram-II PS** shall be conventional Air Insulated Switchgear (AIS) type conforming to the requirements of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022, as amended from time to time.

Extension of proposed **Davangere S/s** shall be conventional AIS type conforming to the requirements of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022, as amended from time to time.

Extension of proposed **Cuddapah S/s** shall be Gas Insulated Switchgear GIS type conforming to the requirements of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022, as amended from time to time.

Other CEA Regulations/guidelines as amended up to date and MoP guidelines, as applicable, shall also be followed.

B.1.0 Salient features of Substation Equipment and Facilities

The design and specification of substation equipment are to be governed by the following factors:

B.1.1 Insulation Coordination

The system design parameters for substations/switchyards shall be as given below:

Sl.No.	Description of parameters	765/400/220 kV Ananthapuram-II PS (AIS)			765 kV Davangere S/s Extn.	765 kV Cuddapah S/s Extn.
		765 kV System	400 kV System	220 kV System	765 kV System	765 kV System
1.	System Operating Voltage	765 kV	400 kV	220 kV	765 kV	765 kV
2.	Maximum voltage of the system (rms)	800 kV	420 kV	245 kV	800 kV	800 kV
3.	Rated Frequency	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
4.	No. of Phases	3	3	3	3	3
5.	Rated Insulation Levels					
i)	Lightning Impulse Withstand Voltage for (1.2/50 micro sec.)					
	- for Equipment other than Transformer and Reactor	2100 kVp	1425 kVp	1050 kVp	2100 kVp	2100 kVp
	- for Insulator String	2100 kVp	1550 kVp	1050 kVp	2100 kVp	2100 kVp

Sl.No.	Description of parameters	765/400/220 kV Ananthapuram-II PS (AIS)			765 kV Davangere S/s Extn.	765 kV Cuddapah S/s Extn.
		765 kV System	400 kV System	220 kV System	765 kV System	765 kV System
ii)	Switching Impulse Withstand Voltage (250/2500 micro sec.) dry and wet	1550 kVp	1050 kVp	--	1550 kVp	1425 kVp
iii)	One minute power frequency dry withstand voltage (rms)	830 kV	630 kV	--	830 kV	960 kV
iv)	One minute power frequency dry and wet withstand voltage (rms)	--	--	460 kV	--	--
6.	Corona Extinction Voltage	508 kV	320 kV	--	508 kV	508 kV
7.	Max. radio interference voltage for frequency between 0.5 MHz and 2 MHz	2500 micro-volts at 508 kV rms	1000 micro-volts at 266 kV rms	1000 micro-volts at 156 kV rms	2500 micro-volts at 508 kV rms	2500 micro-volt at 508 kV rms
8.	Minimum creepage distance for insulator string/ long rod insulators/ outdoor bushings	24800 mm (31 mm/kV)	13020 mm (31 mm/kV)	7595 mm (31 mm/kV)	24800 mm (31 mm/kV)	24800 mm (31 mm/kV)
9.	Minimum creepage distance for switchyard equipment	20000 mm (25 mm/kV)	10500 mm (25 mm/kV)	6125 mm (25 mm/kV)	20000 mm (25 mm/kV)	20000 mm (25 mm/kV)
10.	Max. Fault Current	50 kA	63 kA	50 kA	50 kA	50 kA
11.	Duration of fault	1 sec	1 sec	1 sec	1 sec	1 sec

B.1.2 Switching Scheme

The switching schemes, as mentioned below, shall be adopted at various voltage levels of substation/switchyard:

Substation	765 kV side	400 kV side	220 kV side
765/400/220 kV Ananthapuram-II PS (AIS)	One and Half breaker	One and Half breaker	Double Main and Transfer

765 kV Davangere S/s Extn. (AIS)	One and Half breaker	---	---
765 kV Cuddapah S/s Extn. (GIS)	One and Half breaker	---	---

Notes: -

i) *For one and half breaker switching scheme, any double circuit line consisting of two numbers of feeders and originating from the same transmission or generating switchyard shall not be terminated in one diameter.*

ii) *Two transformers of same HV rating shall not be connected in the same diameter and similarly two bus reactors of same HV rating shall also not be connected in the same diameter.*

iii) *A diameter in one and half breaker scheme is a set of 3 circuit breakers with associated isolators, earth switches, current transformers etc for controlling 2 (two)numbers of feeders.*

iv) *In case of GIS substation where the bus scheme is One and Half breaker scheme, the diameters shall be complete with feeder/line side isolator and GIS duct of the future bay shall be brought outside the GIS hall/building with extension/interface module suitably.*

v) *Connection arrangement of Switchable Line reactors shall be such that it can be used as Line reactor as well as Bus reactor with suitable NGR bypass arrangement.*

vi) *Space for 765 kV and 400 kV future line bays shall be kept considering provision of switchable line reactors.*

vii) ***Provision for Bus sectionalizer:***
Space for One (1) set of future bus sectionalizer for 400 kV shall comprise Two (2) Nos. of bus sectionalizer bays with associated Circuit Breakers, Isolators and Current Transformers for both buses.
Space/provision for One (1) set of bus sectionalizer for 220 kV shall comprise Two (2) Nos. of bus sectionalizer bays with associated Circuit Breakers, Isolators and Current Transformers for both buses.

viii) *TSP shall plan connectivity of line and transformer feeders to bus bar in such a way that all power can be evacuated successfully without crossing thermal limit at any point of bus-bar.*

ix) *For AIS type substation, TSP shall keep space provisions for future elements such that interconnection arrangement to the corresponding future bays can be done with overhead AIS type connection without any cable/ GIS duct.*

x) **765/400/220 kV Ananthapuram-II PS :**
765 kV bay configurations (One and Half breaker scheme) shall be as follows:

Configuration	Numbers
ICT- Tie- Line	*4 (four)*
Bus Reactor- Tie- Future(Line)	*2 (two)*

400kV bay configurations (One and Half breaker scheme) shall be as follows:

Configuration	Numbers
ICT (400 kV side of 765/400 kV ICT)- Tie- 400 kV ICT	*4 (four)*
400 kV ICT - Tie- 400 kV STATCOM	*1(one)*
400 kV ICT - Tie- Future (Line)	*1 (one)*

(i) 400 kV Bus Sectionalization shall be with the following feeder distribution.

400 kV Bus Section-1	***400 kV Bus Section-2 (Future)***
a) 3 Nos. of 765/400 kV ICT b) 5 Nos. of 400/220 kV ICT c) 1 Nos. of STATCOM *d) 4 Nos. of Future 400/220 kV ICT* *e) 6 Nos. of Future 400 kV Lines (with provision for Switchable line reactor)*	a) 1 No. of 765/400 kV ICT *b) 1 No. of 400/220 kV ICT* *c) 2 Nos. of Future 765/400 kV ICT* *d) 8 Nos. of Future 400/220 kV ICT* *e) 6 Nos. of Future 400 kV Lines (with provision for Switchable line reactor)*

TSP shall implement 400 kV bays keeping the space provision for providing 400 kV Bus Sectionalizer in between section 1 and section 2 in future meeting the requirements of feeder distribution as mentioned above.

(ii) 220 kV Bus Sectionalization shall be with the following feeder distribution.

220kV Bus Section-1	***220kV Bus Section-2***
a) 4 Nos. of present 400/220 kV ICTs b) 5 Nos. of present 220 kV Lines	a) 2 No. of present 400/220 kV ICTs b) 1 No. of present 220 kV Line *c) 3 No. of future 400/220 kV ICT* *d) 6 Nos. future 220 kV Line.*
220kV Bus Section-3 (Future)	***220kV Bus Section-4 (Future)***
a) 05 Nos. future 400/220 kV ICT. *b) 08 Nos. future 220 kV Lines.*	*a) 4 Nos. future 400/220 kV ICT.* *b) 6 Nos. future 220 kV Lines.*

xi) **765 kV Davangere S/s Extn. (AIS):**
Ananthapuram-II – Davangere 765 kV D/C line shall be terminated in two new diameters for which Main and Tie Bays shall be constructed.

xii) **765 kV Cuddapah S/s Extn. (GIS):**
Ananthapuram-II – Cuddapah 765 kV D/C transmission line shall be terminated in existing bay numbers 713 and 716.

765 kV Bay module along with GIB brought outside of the GIS hall for bay numbers 713 and 716 is available for termination of **Ananthapuram-II – Cuddapah 765 kV D/C transmission line at Cuddapah**. Line side equipment such as 765 kV GIS duct, SF6 to Air Bushings, LA, CVT, Wave Trap, gantry, protection panel etc. shall be provided under the present scope by the TSP for the line termination.

xiii) Further, all associated interconnection work shall also be in the present scope of TSP.

B.2.0 Substation Equipment and Facilities (Voltage level as applicable):

The switchgear shall be designed and specified to withstand operating conditions and duty requirements. All equipment shall be designed considering the following capacity.

Sl.No	Description of Bay	765/400/220 kV Ananthapuram-II PS			765 kV Davangere S/s	765 kV Cuddapah S/s
		765 kV	400 kV	220 kV	765 kV	765 kV
1.	Bus Bar	4000 A	4000 A	3000 A	As per existing	As per existing
2.	Line Bay	3150 A	N/A	1600 A	3150 A	3150 A
3.	ICT Bay	3150 A	3150 A	1600 A	N/A	N/A
4.	Reactor Bay	3150 A	N/A	N/A	N/A	N/A
5.	Bus Sectionaliser Bay	N/A	N/A	3000 A	N/A	N/A
6.	Bus Coupler Bay	N/A	N/A	3000 A	N/A	N/A
7.	Transfer Bus coupler Bay	N/A	N/A	1600 A	N/A	N/A
8.	STATCOM Bay	N/A	3150 A	N/A	N/A	N/A

B.2.1 (765/√3)/(400/√3)/33 kV, Single Phase Autotransformer

500 MVA, (765/√3)/(400/√3)/33 kV, 1-phase autotransformer (including arrangement for 3-phase bank formation of 1500 MVA) shall conform to CEA's "Standard Specifications and Technical Parameters for Transformers and Reactors (66 kV and above voltage class)" as amended upto date available on CEA's website.

Spare 1-phase Transformer unit shall be placed and connected in such a way that the spare unit can be utilized to replace any unit of any of the transformer banks (including for future transformer banks) without physically moving it.

B.2.2 400/220/33 kV, 3-phase Autotransformer

500 MVA, 400/220/33 kV, 3-phase autotransformer shall conform to CEA's "Standard Specifications and Technical Parameters for Transformers and Reactors (66 kV and above voltage class)" as amended up to date available on CEA website.

B.2.3 (765/√3) kV, Single Phase Shunt Reactor

80 MVAr and 110 MVAr, 765/√3 kV, 1-Phase Reactor (including arrangement for 3-phase bank formation of 240 MVAr and 330 MVAr, respectively) shall conform to CEA's "Standard Specifications and Technical Parameters for Transformers and Reactors (66 kV and above voltage class)" as amended upto date available on CEA website.

Spare 1-phase Shunt Reactor unit shall be placed and connected in such a way that the spare unit can be utilized for all the bus and switchable line reactor banks (including for future reactor banks) without its physical movement.

Neutral Grounding Reactor and Surge Arrester for 765 kV Switchable Line Reactors (as applicable):

The neutral of the switchable line reactors (wherever provided) shall be grounded through adequately rated Neutral Grounding Reactors (NGR) to facilitate single phase auto-reclosure, provided that the NGR shall be provided with suitable bypass arrangement so that the switchable line reactor can be used as bus reactor as and when required. The neutral of bus reactor shall be solidly grounded.

NGR shall be oil filled or dry type air core for outdoor application. NGR shall conform to CEA's "Standard specifications and technical parameters of transformers and reactors (66kV and above Voltage Class)", as amended upto date. Technical parameters of NGR shall be as specified in Annexure-A of above-mentioned document.

The surge arresters (rated voltage of arrester in co-ordination with ohmic value of NGR shall be decided by the TSP) shall be provided and physically located between the neutral of shunt reactor (brought out at 145 kV class bushing) and neutral grounding reactor. The surge arresters shall be of Station Medium (SM) class duty gapless Metal Oxide (ZnO) type conforming in general to IEC-60099-4. Arresters shall be hermetically sealed units, of self-supporting construction, suitable for mounting on structures.

The Ohmic value of NGR for Line Reactors shall be as follows:

Sl. No.	Line Name	Substation Name	NGR value (Ohm)
1.	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertble) at Ananthapuram-II end on both circuits.	Ananthapuram-II PS	500
2.	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertble) at Ananthapuram-II end on both circuits.	Ananthapuram-II PS	600

B.2.4 765 kV, 400 kV and 220 kV AIS and GIS Substation equipment (as applicable)

B.2.4.1 Circuit Breakers (AIS)

The circuit breakers and accessories shall conform to IEC: 62271-100, IEC: 62271-1 and shall be of SF_6 Type. The circuit breakers shall be of class C2-M2 (as per IEC) with regard to restrike probability during capacitive current breaking and mechanical endurance. The rated break time shall not exceed 40 ms for 765 kV and 400 kV circuit breakers and 60 ms for 220 kV circuit breakers. The 765 kV, 400 kV and 220 kV circuit breakers shall be provided with single phase and three phase auto reclosing. Each breaker would have two sets of trip circuits, which would be connected to separate DC supplies for greater reliability. The circuit breakers controlling 765 kV lines shall be provided with pre-insertion closing resistor of about 450 ohm maximum with 9 ms insertion time or Controlled Switching Device. The Circuit breakers controlling 400 kV lines shall be provided with pre insertion closing resistor of about 400 ohm with 8 ms insertion time or Controlled Switching Device (CSD) for lines longer than 200 km length. The short line fault capacity shall be same as the rated capacity and this is proposed to achieve without use of opening resistors. The controlled switching device shall be provided in circuit breakers of

switchable line reactor bay and in Main and Tie bay circuit breakers of line with non-switchable line reactors, Bus Reactors and Transformers of voltage class 400 kV and above.

B.2.4.2 Isolators (AIS)

The isolators shall comply with IEC 62271-102 in general. 765kV Isolator design shall be double break or vertical break or knee-type. 400 kV and 220 kV isolators shall be double break type. All isolators and earth switches shall be motor operated. Earth switches shall be provided at various locations to facilitate maintenance. Isolator rated for 400 kV and 220 kV shall be of extended mechanical endurance class – M2 as per IEC-62271-102. Isolator rated for 220 kV shall be suitable for bus transfer current switching duty as per IEC-62271-102. Main blades and earth blades shall be interlocked and interlock shall be fail safe type. The 765 kV, 400 kV and 220 kV earth switch for line isolator shall be suitable for induced current switching duty as defined for Class-B.

B.2.4.3 Current Transformers (AIS)

Current Transformers shall comply with IEC 61869 in general. All ratios shall be obtained by secondary taps only. Generally, Current Transformers (CT) for 765 kV and 400 kV shall have six cores (four for protection and two for metering) and 220 kV Current Transformers shall have five cores (four for protection and one for metering). The burden and knee point voltage shall be in accordance with the requirements of the system including possible feeds for telemetry. The accuracy class for the protection core shall be PX and for the metering core it shall be 0.2S. The rated burden of cores shall be closer to the maximum burden requirement of the metering and protection system (not more than 20 VA for metering core) for better sensitivity and accuracy. The instrument security factor shall be less than five (5) for CTs upto 400 kV and less than ten (10) for CTs of 765 kV voltage class.

B.2.4.4 Capacitive Voltage Transformers (AIS)

Capacitive Voltage Transformers shall comply with IEC 61869 in general. These shall have three secondaries out of which two shall be used for protection and one for metering. The Accuracy class for protection cores shall be 3P and for metering core shall be 0.2. The Capacitive Voltage Transformers on lines shall be suitable for Carrier Coupling. The Capacitance of CVT for 400 kV and 220 kV shall be of 4400/8800 pF depending on PLCC requirements whereas the Capacitance of CVT for 765 kV shall be 8800 pF. The rated burden of cores shall be closer to the maximum burden requirement of metering and protection system (not more than 50 VA for metering core) for better sensitivity and accuracy.

B.2.4.5 Surge Arresters (AIS)

624 kV, 336 kV Station High (SH) duty and 216 kV Station Medium (SM) duty gapless type Surge Arresters with thermal energy (W_{th}) of minimum 13 kJ/kV, 12 kJ/kV and 7 kJ/kV conforming to IEC 60099-4 in general shall be provided for 800 kV, 420 kV and 245 kV systems respectively. Other characteristics of Surge Arrester shall be chosen in accordance with system requirements. Surge arresters shall be provided at line entrances, near transformers and reactors so as to achieve proper insulation coordination. Surge Arresters shall be provided with porcelain/

polymer housing fitted with pressure relief devices. A leakage current monitor with surge counter shall be provided with each surge arrester.

B.2.4.6 765 kV GIS Duct

The layout of Gas Insulated Bus Ducts shall be properly planned to optimize the length of bus ducts and for easy accessibility for maintenance. The length of busbars, bus ducts, isolator sections shall be optimized considering effects of fast transient voltage due to isolator operations.

B.2.4.7 SF_6 to Air Bushing

Outdoor bushings, for the connection of conventional external conductors to the SF_6 metal enclosed switchgear, shall be provided. Bushings shall generally be in accordance with the requirements of IEC-60137. The creepage distance over the external surface of outdoor bushings shall not be less than 31 mm/ kV. SF_6 to air Bushing shall be of Polymer/ Composite type and shall be robust and designed for adequate cantilever strength to meet the requirement of seismic conditions. The electrical and mechanical characteristics of bushings shall be in accordance with IEC-60137. Polymer/Composite insulator shall be seamless sheath of silicon rubber compound. The housing and weather sheds should have silicon content of minimum 30% by weight. It should protect the bushing against environmental influences, external pollution and humidity. The hollow silicon composite insulators shall comply with the requirements of IEC 61462 and the relevant parts of IEC-62217.

B.2.5 Protection Relaying and Control System

The protective relaying system proposed to be provided for transmission lines, auto-transformers, reactors and bus bars to minimize the damage to the equipment in the events of faults and abnormal conditions, is dealt in this section. All main protective relays shall be numerical type with IEC 61850 communication interface and should have interoperability during integration of numerical relays to communicate over IEC 61850 protocol with RTU/SAS/IEDs of different OEMs. All numerical relays shall have built in disturbance recording feature.

The protection circuits and relays of transformer and reactor shall be electrically and physically segregated into two groups each being independent and capable of providing uninterrupted protection even in the event of one of the protection groups failing, to obtain redundancy, and to take protection systems out for maintenance while the equipment remains in service.

a) Transmission Lines Protection

765 kV and 220 kV lines shall have Main-I numerical three zone distance protection scheme with carrier aided inter-tripping feature. 765 kV and 220 kV lines shall also have Main-II numerical distance protection scheme like Main-I but from different make that of Main-I. The Main-I and Main-II protection relays of same make may be provided only if they are of different hard ware and manufacturing platform or different principle of operation.

However, Line Current Differential Relay (with back up distance protection feature) as Main–I and Main-II shall be considered at both ends for short lines (line length below 30km) having Fibre Optic Communication Link. Differential relay at remote end shall be provided by the TSP. The associated power and control cabling and integration with SAS at remote end shall be provided by respective bay owners.

In case of 220 kV line bays for RE Generators, Line Current differential relay (with back up distance protection feature) as Main-I and Main-II shall be provided. Further, in such cases, the matching line current differential relay for remote end shall be provided by the TSP as loose supply.

In case of loop in loop out of transmission lines, the existing protection scheme shall be studied and suitable up-gradation (if required) shall be carried out.

Further, all 765 kV and 220 kV lines shall be provided with single and three phase auto- reclosing facility to allow reclosing of circuit breakers in case of transient faults. These lines shall also be provided with distance to fault locators to identify the location of fault on transmission lines.

All 765 kV and 220 kV lines shall also be provided with two stage over voltage protection. The over voltage protection and distance to fault locator may be provided as in-built feature of Main-I and Main-II protection relays. Auto reclose as built-in function of Bay Control Unit (BCU) is also acceptable.

The Main-I and Main-II protection relays shall be fed from separate DC sources and shall be mounted in separate panels.

For 765 kV and 220 kV transmission lines, directional IDMT earth fault relay should be provided as standalone unit or in-built feature of Main-I and Main -II feature.

b) AutoTransformer Protection

These shall have the following protections:

i) Numerical Differential Protection

ii) Numerical Restricted Earth Fault Protection

iii) Numerical Back-up Over-Current and Earth Fault Protection on High Voltage (HV) and Intermediate Voltage (IV) side

iv) Numerical Over Fluxing Protection on HV and IV side

v) Numerical Overload Alarm

Further, Numerical Back-up Over-current and earth fault protection on HV and IV side of autotransformer shall not be combined with other protective functions in the main relays and shall be independent relays. Besides these, power transformers shall also be provided with Buchholz relay, Magnetic Oil Gauge (MOG) with low oil level alarm, protection against high oil and winding temperature and pressure relief device etc.

Suitable monitoring, control (operation of associated circuit breaker and isolator) and protection for LT auxiliary transformer connected to tertiary winding of auto-transformer for the purpose of auxiliary supply shall be provided. The over current and other necessary protection shall be provided for the auxiliary transformer. These protection and control may be provided as built-in feature either in the bay controller to be provided for the auxiliary system or in the control and protection IEDs to be provided for autotransformer.

c) Reactor Protection

Reactor shall be provided with the following protections:

i) Numerical Differential Protection.

ii) Numerical Restricted Earth Fault Protection

iii) Numerical Back-up impedance protection

Besides these, reactors shall also be provided with Buchholz relay, Magnetic Oil Gauge (MOG) with low oil level alarm, protection against oil and winding temperatures and pressure relief device, etc.

d) Bus bar Protection

The high-speed low impedance type bus bar differential protection, which is essential to minimize the damage and maintain system stability at the time of bus bar faults, shall be provided for 765 kV, 400 kV and 220 kV buses. Duplicated bus bar protection is envisaged for 765 kV and 400 kV bus-bar protection. Bus bar protection scheme shall be such that it operates selectively for each bus and incorporate necessary features required for ensuring security. The scheme shall have complete bus bar protection for present as well as envisaged future bays i.e. input / output modules for future bays shall also be provided.

Bus Bar protection system for new substation shall be de-centralized(distributed) type.

The scheme shall have complete bus bar protection for present as well as envisaged future bays i.e. input/ output modules for future bays for the bus sections under present scope and PUs shall be provided by the respective bay owners. In case, the bus section is provided, then each side of bus section shall have separate set of bus bar protection schemes.

For existing substations, the existing bus bar protection shall be augmented as per requirement.

e) Local Breaker Back up Protection

This shall be provided for each 765 kV, 400 kV and 220 kV circuit breakers and will be connected to de-energize the affected stuck breaker from both sides.

Notes:

1. *LBB and REF relays shall be provided separately from transformer differential relay.*
2. *LBB relay may also be provided as built-in protection function of distributed bus bar protection scheme; however in such case separate LBB relay shall be provided for tie bays (in case of One and Half breaker scheme).*
3. *Over fluxing and overload protection can be provided as built-in feature of differential relay.*
4. *In 765 kV and 400 kV switchyard, if spare bay of half diameter is identified as future, Tie CB relay panel shall be with Auto-reclosure feature.*

B.2.6 Substation Automation System

a) For all the new substations, state of art Substation Automation System (SAS) conforming to IEC-61850 shall be provided. The distributed architecture shall be used for Substation Automation System, where the controls shall be provided through Bay Control Units. The Bay Control Unit is to be provided bay wise for voltage level 220 kV and above. All Bay Control Units as well as protection units are normally connected through an Optical fibre high speed network. The control and monitoring of circuit breaker, dis-connector, re-setting of relays etc. can be done

from Human Machine Interface (HMI) from the Control Room.

The functions of control, annunciation, disturbance recording, event logging and measurement of electrical parameters shall be integrated in the Substation Automation System.

At new substations, the Substation Automation System (SAS) shall be suitable for operation and monitoring of the complete substation including proposed future bays/elements.

In existing substations with Substation Automation System (SAS), augmentation of existing SAS shall be done for bays under present scope.

In existing Substations where Substation automation is not provided, control functions shall be done through control panels.

Necessary gateway and modems (as required) shall be provided to send data to RLDC/SLDC as per their requirement and shall be provisioned with 2+2 redundancy i.e. 2 channels for Main Control Centre and 2 channels for Backup Control Centre. In order to meet this requirement, suitable redundancy at port and card level need to be ensured by the TSP to avoid any single point of failure which may lead to interruption in real-time grid operation. Accordingly, all the hardware for communication services of station as stated above shall support dual redundancy for data transmission of station to respective main and backup RLDCs. Any augmentation work at RLDC/SLDC is excluded from TSP's scope. However, all the configuration work at substation end required to send data to RLDC/SLDC shall be in the scope of TSP.

b) **Time Synchronization Equipment**

Time Synchronization Equipment complete in all respect including antenna, cable, processing equipment required to receive time signal through GPS or from National Physical Laboratory (NPL) through INSAT shall be provided at new substations. This equipment shall be used to synchronize SAS and IEDs etc.

B.3.0 Substation Support Facilities

Certain facilities required for the operation and maintenance of substations as described below shall be provided at the new substation. In existing substation, these facilities have already been provided and would be extended/ augmented as per requirement.

B.3.1 AC and DC power supplies

For catering the requirements of three phase and single phase AC supply and DC supply for various substation equipment (for present and future scope), the following arrangement is envisaged:-

i) For LT Supply at each new Substation, two (2) Nos. of LT Transformers (minimum 800 kVA for substations with highest voltage rating as 765 kV) shall be provided which shall be fed from two independent sources as per the CEA (Technical Standards for Connectivity to the Grid) Regulations, 2007.

Metering arrangement with Special Energy Meters(SEMs) shall be provided by TSP at 33 kV tertiary of Transformer for drawing auxiliary supply at new substation. Such SEMs shall be

provided by CTU at the cost of the TSP. Accounting of such energy drawn by the TSP shall be done by RLDC/RPC as part of Regional Energy Accounting.
Additionally, Active Energy Meters may be provided at the same point in the 33 kV tertiary of Transformer by local SEB/DISCOM for energy accounting.

ii) 2 sets of 220V battery banks for control and protection and 2 sets of 48V battery banks for PLCC/ communication equipment shall be provided at each new Substation. Each battery bank shall have a float-cum-boost charger.

At new substation, sizing of 220 V battery and battery charger shall be done based on the number of bays specified (including future bays) as per CEA Regulations and relevant IS. 2 sets of 48 V battery banks for PLCC and communication equipment for present and future scope shall be provided at each new Substation with at least 10-hour battery backup and extended backup, if required. 48 V DC can be achieved from 220 V DC battery bank using adapter, if so desired by TSP, without compromising backup time.

iii) Suitable AC and DC distribution boards and associated LT Switch gear shall be provided at new substation.

iv) For new substation, following switch boards shall be considered with duplicate supply with bus coupler/ sectionalizer and duplicate outgoing feeders except for Emergency lighting distribution board which shall have only one in coming feeder:

(a) 415V Main Switchboard–1 No.
(b) AC distribution board– 1 No.
(c) Main lighting distribution board– 1 No.
(d) Emergency lighting distribution board – 1 No.
(e) 220 Volt DC distribution board –2 Nos.
(f) 48 Volt DC distribution board –2 Nos.

Sizing of LT Switchgear shall be suitable to cater the requirement for all present and future bays. AC and DC distribution boards shall have equipped modules for all the feeders(including future as specified).

v) At new Substation, one No. of DG set (minimum 500 kVA for substations with highest voltage rating as 765 kV) shall be provided for emergency applications.

vi) For substation extensions, existing facilities shall be augmented as required.

B.3.2 Fire Fighting System

Fire-fighting system for substation including Transformer and Reactor shall conform to CEA (Measures Relating to Safety and Electric Supply) Regulations, 2023 as amended time to time Further, adequate water hydrants and portable fire extinguishers shall be provided in the substations. The main header of the firefighting system shall be suitable for extension to bays covered under the future scope; necessary piping interface in this regard shall be provided.

At existing substations, the fire-fighting systems as available shall be extended to meet the additional requirements.

B.3.3 Oil evacuating, Filtering, Testing and Filling apparatus

To monitor the quality of oil for satisfactory performance of transformers, shunt reactors and for periodical maintenance necessary oil evacuating, filtering, testing and filling apparatus would be provided at new substations. Oil storage tanks of adequate capacities for storage of transformer oil would be provided.

Online Transformer Oil Drying Out System shall be provided in line with the provisions of Standard Specification and Technical Parameters for Transformers and Reactors (66 kV and above Voltage Class) as amended up to date available on CEA website.

B.3.4 Illumination

Normal and emergency AC and DC illumination shall be provided adequately in the control room and other buildings of the substation. The switchyard shall also be provided with adequate illumination.

The lighting of the entire control room building, fire-fighting pump house, other building (if any) and switchyard shall be done by LED based low power consumption luminaries.

B.3.5 Control Room

For the new substation, substation control room shall be provided to house substation work stations for station level control (SAS) alongwith its peripheral and recording equipment, AC and DC distribution boards, DC batteries and associated battery chargers, Fire Protection panels, Telecommunication panels and other panels as per requirements. Air conditioning shall be provided in the building as functional requirements. Main cable trenches from the control room shall have adequate space provision for laying of cables from the control room for all the future bays also.

At existing substations, the adequacy of size of control room shall be ascertained and the same shall be augmented as per requirement.

B.3.6 Control Concept

All the EHV circuit breakers in substation/switching stations shall be controlled and synchronized from the switchyard control room/remote control center. All the isolators shall have control from remote/local whereas the earth switches shall have local control only.

B.3.7 Visual MonitoringSystem (VMS) for watch and ward of substation premises:

Visual Monitoring System for effective watch and ward of substation premises shall cover all the transformers and reactors, all other major AIS Equipment (such as CB, isolators, CT, CVT, SA etc. as applicable), panel room, all the gates of switchyard and all entry and exit points of control room building and accordingly the location of cameras shall be decided. In addition to the gates of the switchyard, the cameras shall also be located around the boundaries at suitable locations. The camera shall be high-definition color CCD camera with night vision feature. The VMS data partly/completely shall be recorded (minimum for 15 days) at least @25fps (or better) and stored on network video recorder. The system shall use video signals from various cameras installed at different locations, process them for viewing on workstation/monitors in the

control room and simultaneously record all the cameras. The VMS data should go only to the intended personnel/facility and not to the remote server of the Camera (VMS supplier).

Mouse/keyboard controllers shall be used for pan, tilt, zoom and other functions of the desired camera. The Visual Monitoring System shall have provision of WAN connectivity for remote monitoring.

All camera recordings shall have Camera ID and location/area of recording as well as date/time stamp. The equipment should generally conform to Electromagnetic compatibility requirement for outdoor equipment in EHV substation.

Advisory on deployment of CCTV issued by Ministry of Electronics and Information Technology (MEITY) shall be followed.

At existing substations, the Visual Monitoring System if available shall be augmented as per existing or better specification as required.

B.4 General Facilities

a) Line Gantry/Towers are envisaged for bays under the present scope only. However, for adjacent future line bay, gantry/tower shall be designed for extension (considering Hexa conductors for 765 kV and Quad conductors for 400 kV future lines and Twin conductor for 220 kV future lines) wherever applicable.

b) Bay extension works at existing substation shall be executed by TSP in accordance with the requirement/provisions mentioned above. However, interface points shall be considered keeping in view the existing design/arrangement at the substation.

c) TSP has to arrange for construction power and water on its own.

d) All outdoor steel structures including anchor/foundation bolts shall be fully galvanized. The weight of the zinc coating shall be at least 610 g/m^2, however, for coastal/creek regions it shall be at least 900 g/m^2. (if applicable)

e) In 765 kV and 400 kV switchyard, if spare bay of half diameter is identified as future, all the equipment for Tie and Future bay shall be designed considering the current rating of line bay i.e. 3150A.

f) Boundary wall shall be brick masonry wall with RCC frame or Stone masonry wall or Precast RCC wall under present scope along the property line of complete substation area including future switchyard area to prevent encroachment and unauthorized access. Minimum height of the boundary wall shall be of 1.8 m from Finished Ground Level (FGL).

g) All electrical equipment shall be installed above the Highest Flood Level and where such

equipment is not possible to be installed above Highest Flood Level, it shall be ensured that there is no seepage or leakage or logging of water.

h) As per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022/CEA Manual on Transmissions Planning criteria 2023, line approaching substation shall normally be perpendicular to the substation boundary for a stretch of 2-3 km. Accordingly, TSP shall ensure that line terminations at substations are arranged in a manner to avoid hindrance to future line terminations at the substations.

B.5 EXTENSION OF EXISTING SUBSTATION

The following drawings/details of existing substation are attached with the RfP documents for further engineering by the bidder.

Sl. No.	Drawing Title	Drawing No./Details	Rev. No.
A.	**765 kV Davangere S/s**		
1.0	Single Line Diagram	The drawings shall be obtained from the developer on finalization.	
2.0	General Arrangement		
3.0	Earthmat Layout		
4.0	Visual Monitoring System		
5.0	Bus Bar Protection		
6.0	Substation Automation System (SAS)		
B.	**765 kV Cuddapah S/s**		
1.0	Single Line Diagram	PG/PGCIL/CDP.EXTN./SLD-drg/001	R2
2.0	General Arrangement	TCE-XXXXX-4007-GA-40001	R0
3.0	Earthmat Layout		
4.0	Visual Monitoring System		
5.0	Bus Bar Protection		
6.0	Substation Automation System (SAS)		

Note: Bidder is also advised to visit the substation sites and acquaint themselves with the topography, infrastructure such as the requirement of roads, cable trench, drainage etc. and also the design philosophy.

The proposed STATCOMs shall be conforming to the requirements of CEA (Technical Standards for Connectivity to Grid) Regulations, 2007 including amendments and CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022, as amended from time to time. Other CEA Regulations and MoP guidelines, as applicable, shall also be followed and complied with.

Note: These specifications are general in nature applicable to a STATCOM in combination of MSC and MSR. Since, ±300 MVAr STATCOM along with 2x125 MVAr MSR has been specified under the present Scope of work at Ananthapuram-II PS, the specification may be read accordingly.

C.1 Introduction:

This technical specification for a STATCOM Station consists of STATCOM, MSCs (Mechanically Switched Capacitors) and MSRs (Mechanically Switched Reactors) (to be installed at MV bus) including associated coupling Transformer (rated 400/xx kV) and other equipment connected to the 400 kV bus. MV voltage level (xx kV) of the coupling Transformer can be chosen by the TSP to optimize the offered solution which meets functional requirement of this Technical Specification.

The STATCOM station shall operate asymmetrically in the leading and lagging MVAr regions as applicable to reach the dynamic range specified. The purpose of the STATCOM station is to regulate the voltage of 400 kV Bus Point of Common Coupling (PCC). The Configuration and the nominal rating of the STATCOM station is specified in this document.

The main building block of the STATCOM should be single phase Voltage Source Converter (VSC) based convertor valve (multi-level) operating in a way to eliminate or minimize AC filter requirement to High pass filter only and connected to the xx kV bus through air core reactors.

C.1.1 Definitions and Abbreviations

For the purpose of this specification, the following definitions / abbreviations are used:

PCC: Point of Common Coupling (herein also called as Point of Interconnection (POI)). The connection point between the STATCOM and the ISTS at which performance requirements are defined.

Reference Voltage (Vref): The Point on the voltage/current (V/I) characteristics where the static synchronous compensator (STATCOM) is at zero output (i.e. where no reactive power is absorbed from, or supplied to, the transmission system where the voltage is controlled)

MV: Medium Voltage.

STATCOM Unit: Static Synchronous Compensator based on Multi-Module technology and including air cored reactors as needed, Valve cooling, switchgear and its control and protection.

STATCOM: Static Synchronous Compensator consisting of STATCOM Unit(s) connected to a common Coupling Transformer. A static synchronous generator operated as a shunt connected compensator, whose capacitive or inductive output current can be controlled independently of the AC system voltage.

MSC: Mechanically Switched Capacitor (Including Switchgear). A shunt-connected circuit containing a mechanical power-switching device in series with a capacitor bank and a current limiting reactor.

MSR: Mechanically Switched Reactor (Including Switchgear). A shunt-connected circuit containing a mechanical power-switching device in series with a reactor.

Sub Module: Basic single power module of a Multi Module STATCOM unit Valve. It is a Part of a STATCOM unit valve comprising controllable switches and diodes connected in full bridge arrangement, together with their immediate auxiliaries, and storage capacitor, if any, where each controllable switch consists of one or more switched valve device(s) connected in series.

Valve: Electrically and mechanically combined assembly comprising of forced commutated devices [for example insulated-gate bipolar transistor(IGBT)] assembled in levels, complete with all connections, auxiliary components, and mechanical structures, which can be connected in series with each phase of the reactor of a STATCOM unit.

Valve Section: Electrical assembly defined for test purposes, comprising one of several sub-modules.

Valve Structure: Physical structure holding valve(s), which is insulated to the full system voltage above earth potential.

STATCOM Station: STATCOM Station includes 400 kV Switchgear, Coupling Transformer, STATCOM, MSCs (as applicable), MSRs (as applicable) along with its switchgear and complete integrated control and protection whose outputs are coordinated. (Complete turnkey delivery at site).

CT: Current Transformer.

VT: Voltage Transformer.

SAS: Substation Automation System.

Response Time: the duration from a step change in control signal until the voltage changes by 90% of its final change, before any overshoot.

Settling Time: The duration from a step change in control signal input until the STATCOM output settles to within ±5% of the required control output.

Slope: The ratio of the voltage change to the current change over a defined controlled range of the STATCOM, normally the full (inductive plus capacitive) range at nominal voltage, expressed as a percentage.

VSC: Voltage Source Convertor, A forced commutated device (for example, IGBT) based self-commutated convertor that is capable of generating AC voltage from DC capacitor.

Voltage/Current (V/I) Characteristic: The relationship between the current of the STATCOM and the voltage at the point of connection.

Lagging Operation: Inductive operation or reactive power absorption of the STATCOM similar to a shunt reactor.

Leading Operation: Capacitive operation or reactive power generation of the STATCOM similar to a shunt Capacitor.

TSP: Transmission Service Provider

C.2 Relevant Standard:

STATCOM Station shall comply with the following standards (latest edition):

Sl. No.	Description	Standards
1	Voltage source converter (VSC) valves for STATCOM	IEC- 62927 IEEE- 1052 IEC-60747
2	Control, protection and monitoring	IEC-61000 IEC-60255
3	Valve Hall for housing the equipment as above comprising of: - wall bushings for connection between converter phases and decoupling reactors, - piping and tubing connections of the cooling system to converter - connection of the control cabinet with the converter through optical fibers - internal lighting, auxiliary power supply (AC and DC) and power socket system - internal HVAC system	IEC-60071 IEC-60270 IEC-60137
4	X kV, dry insulated, air core and air self-cooled decoupling reactors. Mechanically Switched Reactors (MSRs), half-reactors stacked on above the other, Outdoor installation, Complete with supporting structures	IEC- 60076
5	Power Capacitors (MSC etc.)	IEC-60871-1
6	400 kV Power transformer (Coupling Transformer)	IEC-60076 IEC-60354
7	CT's and VT's	IEC- 61869
8	Dis-connectors and Earthing Switches	IEC- 62271
9	HV and MV Circuit Breakers	IEC- 62271
10	Surge Arresters	IEC- 60099
11	Auxiliary and grounding transformer	IEC- 60076 IEEE C57.32 IS- 5553 (Part 6)
12	Neutral Grounding Resistor, charging resistor	IEEE- C57.32
13	UPS, SMPS and Other Power supply units	IEC- 62040 IEC- 61558
14	Cyber Security	IEC 62243

C.3 Scope of work for STATCOM

The scope of work with regard to the works associated with the STATCOM shall comprise ±300 MVAr Modular Multi-level Voltage Source Converter (MMC-VSC) based STATCOM along with 2x125 MVAr MSR (Mechanically Switched Reactors).

STATCOM can either be Single/ multiple units. The minimum size of a unit allowed is 150 – 200 MVAr. TSP shall ensure that there are no coordination issues between multiple STATCOM branches of STATCOM station. Further complete Dynamic range for STATCOM may also be installed based on appropriate studies instead of combination of VSC with MSC/MSR technology. Minimum MV bus voltage is to be decided by OEMs.

The TSP shall be responsible for the complete installation of STATCOM station along with the substation works as specified in the complete scope of work.

The TSP shall also perform the system studies (steady state and dynamic) according to the requirement mentioned and documentation of the same shall be preserved by TSP and to be submitted to CEA/CTU/GRID-INDIA, as per their request.

TSP shall carry out a detailed study on prevailing system conditions before interconnection of the STATCOM to assess the performance of the STATCOM. Parameters tuning to avoid any adverse impact on the grid with integration of the STATCOM shall also be identified and implemented at this stage. TSP shall carry out tuning of Power Oscillation Damping (POD) along with an interaction study with nearby HVDC/FACTS controllers.

TSP shall ensure interconnection study at the time of commissioning and shall also be responsible for tuning the POD during the license period as per relevant standards (e.g. IEEE 1052).

The switchgear for connection of STATCOM units, MSCs and MSRs provided on the secondary side of the coupling transformer shall be of standard voltage rating as per relevant IEC. The switchgear, structure, control, protection and substation automation on the 400 kV side shall be as per applicable Technical Specification of the substation equipment.

Generally, the purpose of STATCOM is to improve system stability, provide damping, and smooth out the step voltage change associated with MSCs, MSRs and external compensating equipment (i.e. any existing capacitor and reactor banks) switching and provide steady state VARs as needed to support the 400 kV bus voltage.

In order to get optimum control of MVAr, the control of MSCs and MSRs, as well as reactor banks connected on the 400 kV HV side, may be integrated along with STATCOM control to provide steady state 400 kV bus voltage control in a smooth manner. MSRs and MSCs are to be switched to relieve the STATCOM from high level operation, reduce its continuous losses and maximize its dynamic control potential. There should be a provision for the independent operation of MSC/MSR after delinking it with STATCOM controls when STATCOM is out of service due to any reason. Switching of MSC/MSR shall be based on value of external bus voltage.

The operating functions of the STATCOM Station shall include:

- Steady state voltage control of 400 kV bus,
- Balance steady state voltage at 400 kV bus,
- Dynamic over-voltage control,
- Transient and Dynamic stability control
- Damping of Power Oscillations

It is assumed that the arresters will limit any transient and switching surge over voltages and may also, by design, limit dynamic over voltages.

The requirement of reactive power compensation (as defined above) guaranteed by the TSP shall not be less than the levels specified considering following.

- The total cumulative Capacitive (+) and Inductive (-) MVAr rated Capacity of STATCOM Station as defined above comprising of STATCOM, MSCs (as applicable), MSRs (as applicable) coupling transformer, coupling reactor or any filter (if applicable) shall be rated at 1 p.u. voltage, 1 p.u. frequency and 50 °C (Celsius) ambient temperature at 400 kV Bus (Referred to as "Point of Common Coupling" or PCC).
- Capacity of one or more branches of MSC, MSR in STATCOM Station can be included in the STATCOM with equivalent capacity. Accordingly, ratings of STATCOM Unit/Branch equipment may be designed.

Example of equivalent acceptable solutions for each STATCOM Station is given below:

For +300 MVAr STATCOM:

Option 1: ±300 MVAr STATCOM, 2x125 MVAr Mechanically switched Shunt Reactor (MSR).

Option 2: +300/-425 MVAr STATCOM, 1x125MVAr Mechanically switched Shunt Reactor (MSR).

Option 3: +300/-550 MVAr STATCOM,

- The rated capability of STATCOM, MSC (as applicable) and MSR (as applicable) shall be at 400 kV (Referred to as "Point of Common Coupling" or PCC) and in the steady state frequency range of 48.5 Hz-50.5 Hz.

- The STATCOM Station including STATCOM Units, MSCs and MSRs shall be designed to operate continuously under the worst possible combination of steady state voltage range of 360-440 kV and frequency range of 47.5 Hz – 52.5 Hz respectively and transient and temporary over voltages defined in Clause C.6.1-f).

- The AC voltage unbalance at fundamental frequency shall be assumed equivalent to a negative phase sequence component of 1.5% for equipment rating purposes.

- The reactive power compensation levels shall be determined by manufacturing tolerances of the components and measurements carried out using metering accuracy instrumentation at the 400 kV feed points to the STATCOM Station.

- The reactive power capability shall also be determined by calculations based on test values of appropriate quantities at the discretion of the owner.

- In calculations of capability and availability, the owner shall assume the most unfavourable combinations of control, manufacturing and measurement tolerances.

- In case more than one STATCOM Station are installed in a particular substation, each STATCOM Station shall be connected to 400 kV bus individually with complete separate downstream system. Each individual STATCOM station shall have complete independent yet coordinated control system to avoid simultaneous tripping of both STATCOM Stations. The system shall be design in such a way that single common contingency (other than loss of 400kV voltage, abnormal system events) will not cause tripping of both STATCOM Stations.

- Operation of STATCOM Station shall not excite any resonance condition in connected Power System.

- Control of STATCOM Station shall be designed to prevent hunting between MSRs, MSCs and STATCOM.

C.3.1 STATCOM building

The STATCOM station shall have an independent building including a separate control room different from the main control room building of the 765/400 kV Substation.

The STATCOM Building shall comprise of following facilities:

1. Control and Relay Panel room
2. ACDB and DCDB room
3. Battery room
4. Service Room cum workshop
5. Conference room
6. Valve hall
7. Cooling system room
8. Lobby
9. Corridor with minimum width of 1600 mm
10. Portico
11. Common Toilet
12. Provision of shaft for electrical, sanitary, water supply facilities
13. Other facilities as per functional requirement of building
14. AHU Room

C.4 Ambient Condition

STATCOM Station should be designed to perform at 50° C ambient temperature.

C.5 Power System Characteristic

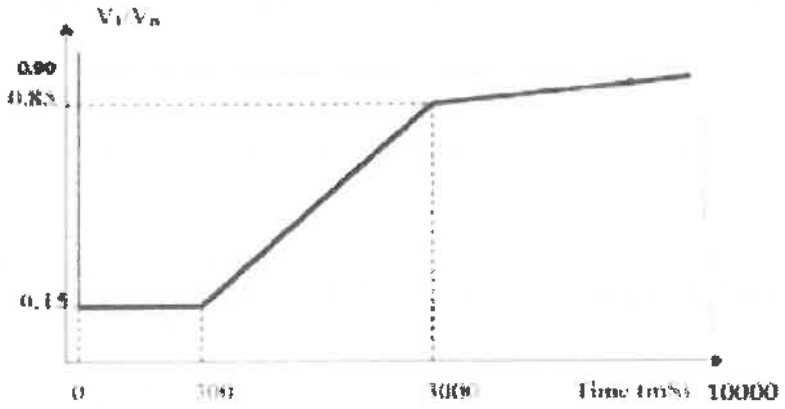
The following AC power system characteristics apply at the point of connection i.e. point of common coupling in this case (PCC). STATCOM station operation is required within the parameter value and duration given in following table:

S. No	Power System Characteristic	Value	unit
1.	Nominal ac system voltage, line-to-line	400	kV
2.	Maximum continuous ac system voltage, line-to-line	420	kV
3.	Minimum continuous ac system voltage, line-to-line	380	kV
4.	Maximum short-term ac system voltage, line-to-line	448	kV
5.	Maximum duration of item 4	10	s
6.	Continuous negative-sequence voltage component (used for performance calculation)	1	%
7.	Continuous negative-sequence voltage component (used for rating calculation)	1.5	%
8.	Continuous zero-sequence voltage component	1	%
9.	Nominal ac system frequency	50	Hz
10.	Maximum continuous ac system frequency (for rated output)	50.5	Hz
11.	Minimum continuous ac system frequency (for rated output)	48.5	Hz
12.	Maximum short-term ac system frequency	52.5	Hz
13.	Minimum short-term ac system frequency	47.5	Hz
14.	Basic Insulation Level (BIL)	1550	kV peak
15.	Switching impulse level (SIL)	1050	kV peak
16.	Power Frequency Withstand voltage	630	kV
17.	Maximum three-phase fault current a) for performance requirements b) for rating of STATCOM X/R (Positive/Negative Seq)* X/R (Zero Seq)* Clearing time - normal Clearing time – backup	 a) 63 b) 63 20.70 38.40 0.10 0.75	 kA kA for 1s s s
18.	Maximum three-phase fault current	63	kA
19.	Minimum three-phase fault current # -for performance requirements -for safe operation	 20 20	 kA kA
20.	Maximum single-phase fault current	63	kA
21.	Minimum single-phase fault current#	11	kA

S. No	Power System Characteristic	Value	unit
22.	Harmonic impedance sectors for each harmonic number up to the 49th harmonic or system impedance data as R-X values with frequency steps not larger than 1 Hz (for performance and/or STATCOM system component rating)	Chapter 7.3 of CIGRE Publication 139	
23.	Background harmonic voltage (or current) spectrum (for STATCOM components rating) (Distortion up to 15th Harmonic	5th Harmonic 1.5% 7th Harmonic 1.0% Other Harmonics 0.5% (each)	
24.	Power System Phase Rotation	CCW	

The STATCOMs shall remain connected to the grid and shall be able to operate at rated reactive power capability when voltage at the interconnection point, on single phase or three phases dips up to the level depicted by the thick lines in the following curve (for specified time) and up to at least 0.3 p.u. in case of two phase faults:

VT : Actual Voltage; Vn: Nominal Voltage



C.6 STATCOM Station Characteristics

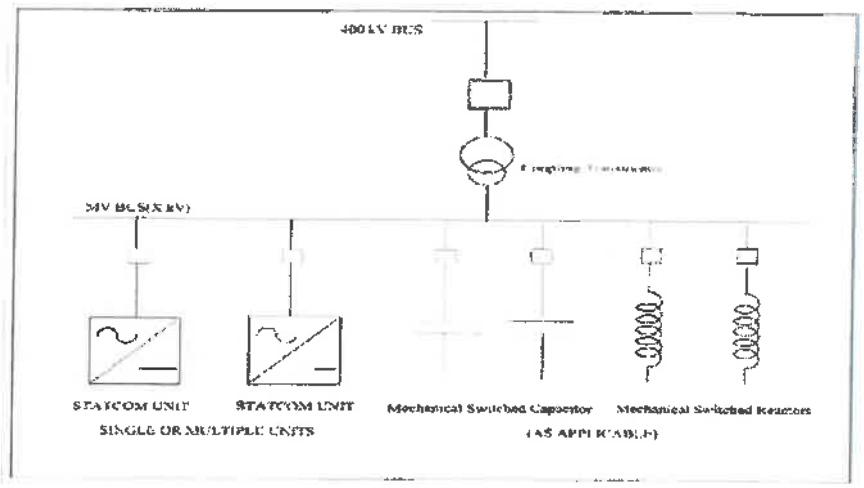


Figure-1: Conceptual Indicative Schematic diagram of STATCOM Station

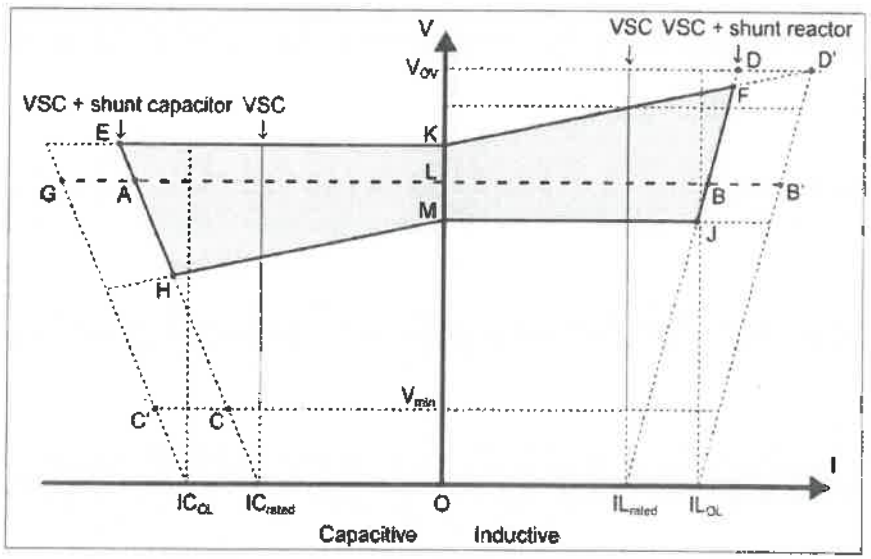


Figure-2: VI Curve of the VSC Portion

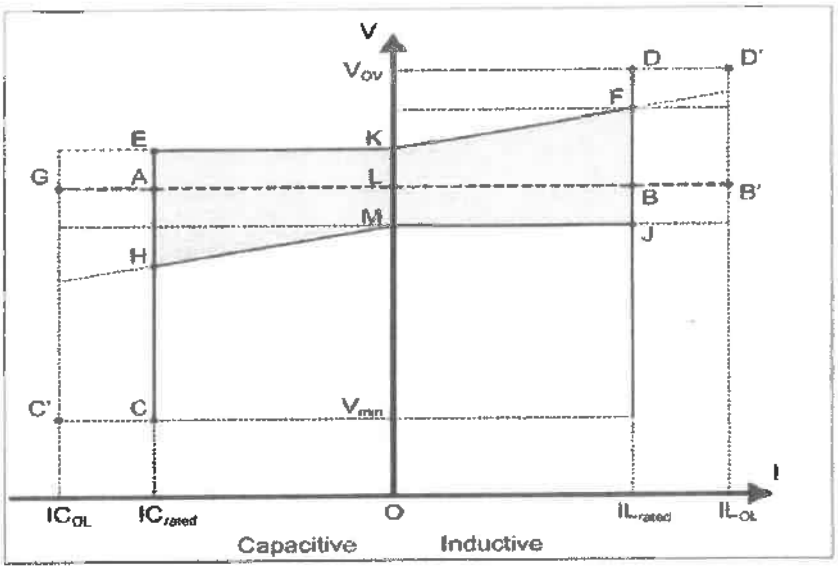


Figure-3: VI Curve of the STATCOM Station

C.6.1 STATCOM Station Ratings

The output of a STATCOM Station shall be adjusted continuously over the range illustrated in Figure-3.

The following items define the ratings of the STATCOM station equipment.

a) The STATCOM Station should regulate the 400 kV bus voltage to a reference voltage of 400 kV (1.0 per unit, Point L Figure-3), continuously adjustable between 0.95 per unit and 1.05 per unit.

b) The nominal capacitive and inductive reactive power output of the STATCOM should be as defined in the scope, at 1.0 p.u. AC bus voltage and nominal system frequency (f), and 50°C ambient temperature (Point A and point B of figure-2).

c) The slope of the STATCOM Station characteristic should be adjustable in steps of not greater than 0.5% between 1% and 8%, on a basis of cumulative MVA capacity of STATCOM Station (A+B in Figure-3).

d) The STATCOM Stations shall continue to inject reactive power during temporary under voltage down to 60 kV (0.15 p.u.) for the duration 0.3 sec (Point C) and STATCOM behavior for voltages above 0.15 p.u. shall be as specified under section C.5 above; the STATCOM system may be blocked if the under voltage persists for time beyond limits specified under section C.5 above.

e) The STATCOM shall continue to absorb reactive power during HVRT Conditions in a controlled manner as per the following.

Nominal Voltage (pu)	Minimum time for remaining connected to the Grid
V > 1.50	Instantaneous trip
1.50 ≥ V > 1.30	100 milli seconds
1.30 ≥ V > 1.10	10 seconds
V ≤ 1.10	Continuous

STATCOM Station may be tripped if the respective temporary over voltages as mentioned above persists for more than its respective mentioned duration.

f) The STATCOM Station should be capable of repeating temporary operation as defined in any one of item (d) and (e) as above for at least 3 charging cycles in 60 mins.

g) The coupling transformer and all bus equipment, such as filter branches (if applicable), MSC and MSR branches etc. and the MV Bus should be rated to withstand the specified continuous and short-term operation, and to withstand or be protected against voltage and current stresses that exceed these conditions.

h) All equipment in the STATCOM Station should be capable of sustaining, without damage, any fault limited by the maximum design short circuit level of the system and the Coupling transformer impedance.

i) The TSP shall assume the negative sequence voltage of 1% at rated short circuit level and provide control to reduce this unbalance.

j) The injected harmonics by STATCOM Station under the full operating range measured at 400 kV Bus (PCC) in accordance with IEEE Standard,

k) The STATCOM controls should be designed to correct negative sequence voltage during steady state operation.

l) The switching module design should include an appropriate allowance for stray capacitance and component tolerances.

m) The STATCOM should be designed to prevent, or alternatively to withstand, false firing events, i.e., the firing of any valve at an incorrect time in the cycle or when not ordered.

C.6.2 Control Objectives

The control system shall control the STATCOM, MSCs, MSRs required under this specification, as well as all bus reactors on the 400 kV HV bus of the substation.

Operation logic for the breakers, disconnectors and earth-switches in the STATCOM Station shall also be incorporated in the control system. The control shall be programmable and shall have sufficient scope and flexibility (software programming margin of at least 20%) to permit re-programming according to future changes/addition in the power system. The operator interface must be integrated in a latest version of Windows environment.

C.6.2.1 STATCOM Station Functions and Applications

C.6.2.1.1 Voltage Control mode (Automatic and Manual)

Control of the positive sequence component of the fundamental frequency voltage in steady state at POI shall bewith slope in the range as specified at clause 6.1 c) above.

There shall be following provisions in STATCOM System to operate in Voltage Control Mode:

a) To adjust the reference voltage for changes by Grid Operator

b) To adjust the value of reactive power droop in pu to provide a stable, coordinated and dynamic response.

c) To adjust the voltage dead band with a minimum magnitude of ±0.05pu

C.6.2.1.2 Fixed Reactive Power Mode

In this mode, the STATCOM system shall maintain a specified constant reactive power output at the POI under continuous / steady state operating region. The target reactive power level and mode (injection or absorption) shall be specified by the Grid operator. There shall be a provision to adjust the reactive power set point. The dynamic response of the STATCOM system to any changes in reactive power shall be positively damped with a damping ratio of 0.3 or better.

C.6.2.1.3 Steady State Condition

The STATCOM Station (STATCOM along with MSCs and MSRs) shall provide necessary reactive power support to the 400 kV bus (PCC) to compensate for voltage variation under steady state.

C.6.2.1.4 Dynamic Over-voltage Control Performance

The STATCOM shall be required to provide necessary reactive power support with fast and smooth variation so that over-voltages under dynamic conditions are controlled. STATCOM shall smooth out the step caused by the switching of MSCs and MSRs.

The operation of each STATCOM over its range of MVAr from full capacitive to full Inductive capacity and vice-versa shall be on the basis of smooth variation.

C.6.2.1.5 Transient and Dynamic Stability Performances

The STATCOM Station shall provide necessary reactive power so that the transient and dynamic stability of the Owner's system is enhanced.

C.6.2.1.6 Damping of Power Oscillations

The STATCOM shall provide necessary damping to power oscillations by modulating its output in its entire range based on the measured rate of change of power/frequency at the 400 kV bus. The damping controller would track local area oscillations as well as wide area oscillations and control would include several loops each focused on different frequencies.

TSP shall ensure the damping of oscillation during the entire license period including the pre-commissioning period as per relevant standards. (e.g. IEEE 1052).

C.6.2.1.7 Facility for compensation of phase imbalance

Provide negative phase sequence voltage control to minimize the presence of negative sequence content of the 400 kV bus voltage.

C.6.2.1.8 Start up and Initial Switching

The operation of STATCOM Station during start-up/initial switching on should not create significant energizing transients causing voltage drop, voltage distortion and swinging of transmission voltage angle at the PCC bus by more than +/-5%. TSP shall have to ensure this analytically during the design phase and also in the field after the commissioning of the facility. TSP shall prepare the design documentation and the same shall be preserved by TSP and to be submitted to CEA/CTU/GRID-INDIA, as per their requirement.

C.6.2.1.9 Gain Supervision and Control

To control the regulator gain in order to prevent oscillations and excessive overshoot in the STATCOM response, a gain supervision function shall be implemented. This shall be an essential function for the supervision of stability of closed-loop voltage control. The function of this controller is that when the supervision of the gain in the voltage regulator detects oscillations in the voltage controller output, the gain shall gradually be reduced until stability is reached. Normally it is a changed condition in the transmission system contribution to the closed loop gain that results in instability. The reduction in the voltage regulator gain shall only balance the external change. The control should be adaptive in order to maximize its effectiveness. Gain reductions should be indicated and the reduction of the gain shall be able to be reset to nominal value by means of commands from the operator interface or automatically. A relative gain factor shall also be able to be changed from a gain optimizer.

C.6.2.1.10 Coordinated reactive power control of external devices

To optimize the use of dynamic VARs versus steady state VARs, control of externally connected shunt capacitor or reactor banks shall be implemented. Such banks will be connected locally to a HV bus or/and at MV bus. For simultaneous control with the supplementary VSC current controller, coordination for the two functions shall be provided. External devices like mechanically switched capacitors (MSC)/mechanically switched reactors (MSR) can be switched ON or OFF to position the steady state operating point of the VSC so as to extend its dynamic range. There should be a provision for independent operation of MSC/MSR after delinking it with STATCOM controls when STATCOM is out of service due to any reason. The threshold values for switching the MSC/MSR on/off shall be configurable in all modes of operation.

C.6.2.1.11 Supplementary VSC current controller

To optimize the use of dynamic VARs versus steady state VARs, a control function that slowly reduces or offsets the STATCOM point of operation shall be implemented. By deliberately adjusting the voltage reference setting within a narrow window the STATCOM system output is pushed towards either a specific point or towards a window to preserve dynamic range. This slow operating function is meant to provide for slower controllers, such as externally connected shunt banks to operate and meet the slower long term voltage variations caused

by daily or weekly load variations. Rapid changes in the system voltage that call for dynamic compensation will have priority over this type of controller.

C.6.2.1.12 Gain optimization

To provide operation at optimal regulator gain, a fully automatic optimizing function shall be implemented. This function operates by inducing a small change in the STATCOM output. The gain is adjusted based on the network response signal.

C.6.2.1.13 Control of Direct Current

During STATCOM operations, any flow of direct current to the transformer's MV side must be less than 25% of the transformer magnetizing current. DC current flow in the transformer should be minimized by an independent control function that minimizes DC current. For presence of up to 0.2% second harmonic in 400 kV system, the STATCOM control should minimize DC current flow in the transformer.

C.6.2.2 Under Voltage Strategy

It is essential that the STATCOM Station operates in a robust manner when transmission system under voltages appears. In case of single phase or three phase faults, the STATCOM units must operate unrestricted, producing its rated capacitive current for transmission system voltage down to 0.15 p.u. In case of two phase fault, STATCOM shall be capable to produce rated capacitive current atleast down to 0.3 p.u., however, it shall be designed to operate upto 0.15 p.u. The STATCOM must be designed to operate at transmission system under voltage, even considering that severe voltage unbalances can appear. The STATCOM must not be restricted by short term negative sequence voltages up to 1.5%, appearing in conjunction with under voltages.

Transmission system under voltages below 0.15 p.u. will appear in conjunction with transmission system faults. The STATCOM must ride through during faults and post fault under voltages. The minimum trip delay for the STATCOM Station, upon complete loss of the transmission system voltage shall not be less than 5 seconds. If station AC auxiliary power distribution is affected, critical loads must be fed from DC station batteries, uninterrupted power supply (UPS) without tripping the STATCOM Station. Adequate capacity must be kept in DC station batteries, UPS to feed critical loads for the smooth operation of the STATCOM Station facility. There must be redundant station battery system with each station battery system capable of delivering 100% load.

At under voltage conditions for the transmission system voltage, special control strategies are activated which override the normal control modes presented above. Normally if the voltage is low, the output from the STATCOM will be capacitive. If the voltage in all three phases goes below a level, but not greater than 0.15 p.u., a special under voltage strategy may be activated that controls the STATCOM output to 0 MVAr. As soon as the voltage goes higher than 0.15 p.u., the under voltage strategy is deactivated and the normal control will be in operation (for the specified duration).

The STATCOM Station must not be tripped or shut down automatically due to under voltages appearing for specified duration as specified under section C.5 above. STATCOM Station must continue to operate when AC system Voltage on any or all phases dips down to 0.15 p.u. voltage as per the characteristic given at section C.5.

C.6.2.3 Over Voltage Strategy

C.6.2.3.1 The TSP shall carry out dynamic stability study upfront in order to assess the dynamic overvoltage requirements. These studies shall include conditions with maximum and minimum short circuit system MVA conditions, single phase and three phase faults as well as stuck breaker, outage of the nearby generator and also with the outage of parts of the STATCOM Station. It is important that the STATCOM Station rides through temporary over voltages and not trip when it is needed the most.

C.6.2.3.2 The system should be able to withstand any 3 phase, 5 cycle (100 ms) and single phase 10 cycles (200 ms) fault with consequent loss of a 400 kV double circuit line and loss of a 500 MW generator. The fault duration mentioned above corresponds to time assumed for the persistence of fault. For other system parameters refer clause 5 above (Power System Characteristics). In addition to above requirement, system contingency cases as provided in Annexure-I need to be considered and satisfied.

C.6.2.3.3 The 400 kV system and equipment to which the STATCOM Station is connected is designed to withstand switching surge overvoltage up to 2.5 p.u. and power frequency over voltages up to 1.5 p.u. with initial value of the temporary overvoltage up to 2.0 p.u. for 1-2 cycles. Based on arrestor coordination and under the worst case scenario the 400 kV system phase to ground peak over voltages may be expected as follows

i) 650 kVp for 3 peaks
ii) 575 kVp up to 5 cycles
iii) 530 kVp up to 1 second
iv) 475 kVp up to 10 seconds

a) The STATCOM Station shall be designed to withstand these sequential over voltages.

b) If the over voltages greater than 1.1 p.u. are exceeded in magnitude and duration due to any system contingencies, suitable control action shall be taken by STATCOM Station to bear this kind of contingency.

c) The TSP shall evolve the insulation co-ordination of the components of the STATCOM Station after studies have been conducted to determine the over- voltage profile with the STATCOM connected to the system.

d) The TSP shall ensure that STATCOM Station will not excite ferro-resonance and sub-synchronous oscillation in the AC system. The study report in this regard shall be preserved and to be submitted to CEA/CTU/GRID-INDIA, if required.

e) It may also be noted that the tripping action for 400 kV lines is initiated if the overvoltage exceeds 1.1 p.u. for 10 seconds. The tripping of 400 kV lines is initiated if 1.5 p.u. voltage persists for more than 100 milli seconds. The over voltage strategy shall be coordinated with these settings such that the STATCOM Station rides through up to these levels.

C.6.2.4 STATCOM Station Over load / Over Current

The overvoltage cycles mentioned in clause 6.2.3.3 above create a corresponding current overload in the STATCOM Station components; the STATCOM Station and its components shall be designed to withstand these.

In addition to the above the STATCOM Station and its components shall be designed to withstand overloading caused due to the following eventualities.

i) Short circuits and ground faults in the 400 kV system especially those occurring near the STATCOM Station and medium voltage bus of the STATCOM Station.

ii) Transient overvoltage due to switching operations and atmospheric effects.

iii) Temporary over voltages.

iv) Short circuits in the transformer secondary circuit such as:
- Bushing terminal fault
- Flashover across a reactor, Bus Bar and other connected components/switchgear etc.

v) Protection system faults.

If the rated overvoltage is exceeded as a result of prolonged stressing or for other reasons, the protection specified elsewhere in the specification shall come into effect to prevent damage.

C.6.2.5 Dynamic Performance Controls of STATCOM Station

The TSP must describe in detail, the dynamic reactive power controls for enhancing stability margin and also damp oscillations of any critical frequencies. The dead band for continuous damping control must be very small so that there are no discernible sustained oscillations.

C.6.2.6 Protective Control Functions

TSP shall provide all necessary protections including Main and Back-up protections for all protective zones and equipment like transformers, STATCOM Units, MSCs (if applicable), MSRs (if applicable), MV Bus Bar etc. TSP shall provide any protective control functions to meet the performance requirement of STATCOM under the scope of the TSP.

a) Overvoltage Protection

TSP shall provide adequate overvoltage protection as a result of any normal operation, mal-operation or system event.

b) Over current Protection

TSP shall provide adequate over-current protection for the STATCOM Station as a result of any abnormal operation, mal-operation or system event.

c) Gate level control Supervision

TSP shall provide adequate Sub module Gate level control supervision.

C.6.2.7 STATCOM Station Response

STATCOM station response shall be such that the change in measured system voltage to small disturbance should reach 90% of the desired total change within 30 ms of initiating a 5% step change of voltage reference. The maximum overshoot should not exceed 120% of the total change and the settling time should not exceed 100 ms, after which the voltage should be within ±5% of the final value. This response characteristic within these limits must be respected when the system's three-phase fault MVA is between the minimum and maximum value defined in clause-5. The response of the system voltage using the actual controller should be validated on a real time simulator during the Factory Acceptance Test (FAT) at the manufacturer's premises. For the purpose of STATCOM Station, response time measurement and signal conversion of the voltage, the error should not exceed 0.3%. The voltage response acquisition circuit should have a response time of no longer than 10 ms. However, time longer than 10 ms can be allowed provided the requirement of STATCOM response time is met.

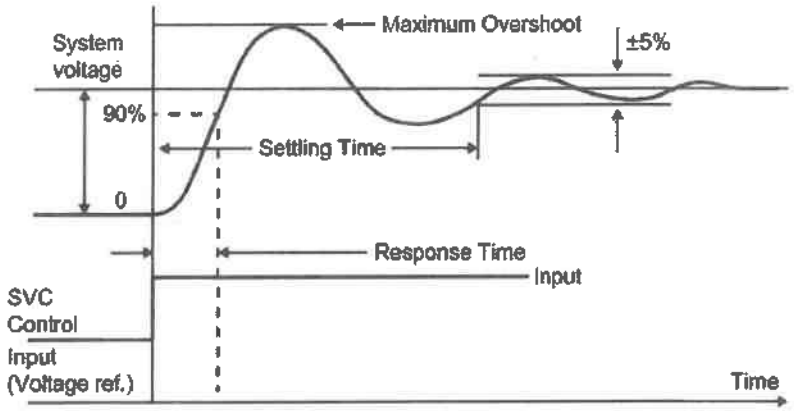


Figure-4 Response and Settling time

C.6.3 Harmonic performance and AC harmonic filter design

It is likely that with multi-level VSC based technology, no filters or only a small high-pass filter will be needed. The STATCOM shall be operable without AC filters. The STATCOM Station should be designed to eliminate the effects of any harmonic resonance between its MSRs, MSCs banks, filter branches, and the AC system. To limit the harmonic distortion imposed on the 400 kV transmission system, the additional contribution of harmonic distortion from the STATCOM Station to 400 kV system (PCC) should not exceed 1% for the total and 0.5% for any specific harmonic.

C.6.3.1 Filter performance

The distortion levels as specified should be met for the following:

a) The continuous range of all system and environmental conditions.

b) Variation in total filter capacitance due to manufacturing tolerance, ambient temperature, aging, and changes in capacitance up to alarm level.

c) Variation in tolerance for STATCOM parameters, such as transformer winding unbalances, valve firing variations, MSC and MSR unequal reactor and capacitor reactance between phases.

d) System frequency in the range of 48.5 Hz to 50.5 Hz. Calculation should take into account all possible combinations of STATCOMs, MSCs and MSRs.

C.6.3.2 Filter component rating

The harmonic filter components (and other STATCOM components) should be rated to carry continuously the harmonic currents caused by the background harmonic distortion of the system and the harmonic currents produced by the STATCOM itself. Unless otherwise specified, harmonic currents from the system and the STATCOM of the same order should be added arithmetically. All filter harmonic currents of different order should be added quadratically (root sum of squares).

The rated voltage of capacitors should be derived from the largest arithmetic sum of the power-frequency and individual harmonic voltages obtained from stress calculations in continuous operating conditions (Note: Maximum fundamental voltage and maximum harmonic contributions may not exist at the same time for STATCOM configurations including MSRs or MSCs).

For filter capacitor voltage rating, the loss of capacitor unit or elements should be considered up to the trip level.

The rated voltage of so-called "low voltage" capacitors (e.g. in double or triple tuned filters) should be chosen such as to also withstand imposed transient stresses from faults, energization, or other switching events.

C.6.3.3 Harmonic at PCC

The STATCOM Station's contribution to the harmonic distortion levels at the STATCOM Station connection point (PCC) to the transmission system shall not exceed the limits defined in IEEE-2800 standard.

C.6.3.4 Harmonic calculation:

Chapter 7.3 of CIGRE Publication 139 together with information in PSSE network files given shall be used for the Network harmonic impedance.

C.6.4 MV Switchyard

- Medium Voltage (MV) delta bus shall be grounded through a Grounding Transformer (i.e. zig-zag winding Transformer) along with a suitable resistor in the neutral.
- MV Switchyard of different STATCOM Station branches shall be fenced with a fence height of 3 meter. To minimize the probability of electrical fault suitable arrangement i.e. electrified fence shall be done to prevent the encroachment of unwanted animals or other to minimize the probability of electrical faults (Ph-E, Ph-Ph). Further bus bar arrangements shall be made in a way to minimize the probability of electrical faults.

- Secondary side of the Coupling Transformer shall be provided with suitable surge capacitors to mitigate transfer surges.

- For MV bus bar, an Aluminum conductor (Tube, Rectangular Hollow Section or C Section) may be used, however, a suitable bus bar end cover/cap shall be provided to avoid any animal/bird entering the hollow space.

C.6.5 Broadband Interference

C.6.5.1 Radio Interference

The TSP shall take necessary precautions in the form of shielding of valve hall and building or Containers to meet its own requirement together with any requirements that may be specified in Section-Project. Further, the following requirements shall also be met:

a) With the STATCOM Station operating at any load upto rated value and within the design range of firing angle, the radio interference level from electromagnetic or electrostatic inductions generated by the STATCOM station shall not exceed 100 micro-volts/m, under fair weather conditions, at 500 m away from STATCOM fence or boundary of the substation whichever is higher. The Radio Interference Level (RIL) criteria shall be achieved at all frequencies within the range of 150 kHz to 300 MHz and with the STATCOM operation at any level up to and including rated value. The design shall provide correcting measures, in case the specified design not being realized in the final installation. In case of any third-party complaints about the radio interference, suitable measures shall be implemented by the TSP.

b) Measurements of actual RI at STATCOM Station shall be made by the TSP, at points along the above defined contour and at other critical points.

c) RIV (Radio Interference voltage) measured at a phase to ground voltage (266 kV rms) in accordance to NEMA-107 shall not be more than 500 micro-volts for 400 kV system. For other system voltages, IEC/NEMA in the order of preference shall be applicable.

C.6.5.2 Interference with Power Line carrier and open wire carrier system

The TSP shall take the necessary precautions in the form of noise suppression techniques and filtering devices to prevent harmful interferences from STATCOM Station to the power line carrier communication (PLCC) system operating on connected AC transmission network.

The frequency spectra to be protected are:

System	Frequency spectrum
Power Line Carrier	30 kHz to 500 kHz
Open Wire Carrier	5 kHz to 30 kHz

C.6.6 Audible Noise

The TSP shall limit the audible noise in various areas of the STATCOM Station buildings and containers to the following values.

Valve hall (Inside)	90 dBA
Mechanical equipment areas indoor (measured at 2 meter distance)	75 dBA
Mechanical equipment outdoor (Measured at 15 m distance)	75 dBA
Control Room Building*	60 dBA
At the limits of the STATCOM STATION perimeter fence	80 dBA

**This is the background noise from the ventilation system in adjacent rooms, control cubicles etc. Printers, recorders may be switched off during the measurement.*

C.6.7 Loss Requirements

C.6.7.1 The TSP must guarantee the total losses of STATCOM Station, be less than 1% of the reactive power output individually at its inductive limit (STATCOM+MSRs) and capacitive limit (STATCOM+MSCs) for the cumulative highest reactive power output of STATCOM Station at PCC with the worse combination of manufacturing tolerances for the Option-1 to 2 as provided in clause C.3. In case of Option 3 as provided in clause C.3 i.e. +300/-550 MVAr STATCOM without MSC and MSR, the TSP must guarantee the total losses of STATCOM Station will be less than 1.5% of the reactive power output individually at its inductive limit and capacitive limit for the cumulative highest reactive power output of STATCOM Station at PCC with the worse combination of manufacturing tolerances. For the purpose of total loss measurements, it should be assumed that the ambient temperature is 20 °C, the PCC voltage is 1 per unit, and the slope setting is 1%. The STATCOM system may not operate under these conditions, but they provide a common base.

C.6.7.2 The total losses shall include all components, as well as different parts or subsystems of the complete STATCOM Station such as coupling transformer, All VSC systems and components, MSC and MSR, Control and protection systems, including ancillary devices such as HMI, fault recorders, and SCADA, Auxiliary Power supply systems, cooling systems, Building ancillary services such as lighting, air conditioning, heating, and ventilation. It may be noted that for the redundant VSC valve levels and dual/redundant control and protection systems, the losses of redundant VSC valve levels and dual control and protection systems shall be considered during loss measurement.

C.6.7.3 For the dual or redundant systems design of STATCOM Station, such as dual pumps or redundant fans, dual systems losses are to be excluded, if the dual system is not in service during the normal operation of the STATCOM Station. However, dual systems should be included if they are required to be in service under the defined operating conditions. The same methodology shall be applied for HVAC (heating ventilation and air conditioning systems).

C.6.7.4 The TSP is required to prepare documentation for the detailed calculation of total losses based on measurement during Factory Acceptance Tests of major equipment and systems mentioned above as per relevant IS/IEC/IEEE standards and the same shall be preserved and to be submitted to CEA/CTU/GRID-INDIA, as per their requirement. Further for equipment/systems, whose loss measurement cannot be done during the Factory Acceptance Test, the same can be measured at the site, and a combination of calculation and measurement shall be used to derive the total losses as specified above. During Loss

measurement, all fans, and pumps; valve room and control room air-conditioning system shall be switched on. However, redundant fans, pumps and air-conditioners shall be kept off during loss measurement.

C.6.7.5 During the factory tests the losses for the following equipment shall be measured/ assessed as detailed below:

Coupling transformer:

Losses shall be measured at factory/lab at the maximum rating, at power frequency as per relevant IEC/IS under below mentioned conditions:

i. No load loss (Iron loss) at rated voltage and fundamental frequency.

ii. Load loss (copper loss) at rating corresponding to maximum continuous current and at 75 °C.

iii. Transformer cooling equipment's loss (Auxiliary loss) at rated voltage and fundamental frequency.

Reactors:

The losses shall be measured at the factory/lab at the maximum rating at power frequency as per relevant IEC/IS.

VSC Valves:

Converter losses comprise the losses in power electronic switches [insulated gate bipolar transistor (IGBT) or equivalent], made up of conduction and switching losses, and the losses in DC capacitors, resistors, and inductors used within the converter system. Refer IEEE-1052 for calculating VSC losses.

Capacitor:

The capacitor losses shall be measured at the manufacturer's works at power frequency as well as calculated to obtain the losses in the complete bank on the basis of factory measurement.

Auxiliary System:

Auxiliary power losses shall be calculated from the kW and efficiency of all motors (name plate rating) of the cooling system, air conditioning, ventilation etc. The higher of the total losses for the entire auxiliary systems occurring at full capacitive capacity MVAr or full Inductive MVAr as the case may be shall be considered for arriving at the total losses.

Harmonic Filters, if any:

The losses shall be calculated at the maximum STATCOM Station loading at 400 kV and 50 Hz.

The calculations shall be on the basis of the tested results of the components.

C.6.8 Selection of Insulation Levels

C.6.8.1 Arresters:

Protective levels of arresters connected to the 400 kV AC Bus Bars of the STATCOM Station shall be coordinated with the insulation and surge arrester Characteristics of the 400 kV AC systems to which the STATCOM Station is to be connected. The specification and characteristics of the surge arresters installed in 400 kV AC system is given in the Substation specifications. The front of wave (FWWL), lightning impulse (LIWL) and switching impulse withstand levels (SIWL) shall be determined by the following margins:

a) A SIWL at least 1.15 times the switching impulse protection level.

b) A LIWL which is an IEC standard level corresponding to the SIWL and shall be at least 1.25 times the lightning impulse protection level.

c) A FWWL which is at least 1.25 times the front of wave protection level.

In addition to the above minimum basic requirement, the various insulation level of 400 kV equipment shall be as below. The STATCOM Station equipment, coupling transformers etc. shall be co-ordinated accordingly.

Description	SIWL	LIWL
All equipment including Transformer Bushing and winding	1050 kVp	1425 kVp

C.6.8.2 Valves

The requirement of insulation levels of the valves shall be as per the design requirement.

C.6.8.3 Air clearances

The air clearances shall be determined by the TSP based on the required withstand levels for all waveforms in order to limit the probability of flashover within the STATCOM Station to a target value of one flashover in 15 years.

C.6.8.4 Switchyard

The air clearances for switchyard equipment shall be equal to or greater than the minimum values as specified in IEC-60071. Altitude correction factor (if any) shall also be considered as per IEC.

C.6.8.5 Leakage distances

The Creepage/leakage distance across insulation shall be determined by the TSP and shall be adequate to ensure that under conditions of heavy pollution, the probability of a flashover of an insulator does not exceed one in 15 years. However, the leakage distance for all AC insulators for outdoor installation shall not be less than 25 mm/kV of the maximum operating

phase to earth rms voltage at the insulator. The leakage distance of equipment connected to 400 kV systems shall not be less than 10500 mm.

Specific creepage distance for outdoor bushings, insulator strings and long rod insulators shall be a minimum 31 mm/kV.

C.6.9 STATCOM Station availability and reliability

The following definitions apply:

C.6.9.1 Outage terms:

a) Outage

The stage in which equipment is unavailable for normal operation due to an event directly related to the equipment which results in a reduction in STATCOM Station capacity.

b) Scheduled Outage

An outage that can be scheduled at least one week in advance.

c) Forced outage

The stage in which the equipment is unavailable for normal operation but is not in the scheduled outage stage and which results in a reduction in STATCOM Station capacity i.e. an outage which is not scheduled outage.

C.6.9.2 Capacity terms

Maximum Continuous Capacity (Pm)

The maximum STATCOM Station capacity (MVAr) for which continuous operation under normal conditions is possible.

C.6.9.3 Outage duration terms

Actual outage duration (AOD)

The time elapsed in hours between the start and end of an outage.

C.6.9.4 Time Categories

a) The number of hours in the reporting period in a full year, the period year is 8760 hours. If the equipment is commissioned, part way through a year, the period hours will be proportionately less than 8760 hours.

b) Total Outage hour (TOH)

The sum of all outage duration within the reporting period. TOH = AOD

C.6.9.5 **Availability and Reliability Terms**

Unavailability:

Unavailability is the duration for which the STATCOM Station is not available with a specified rating due to forced outages per year. If part of the station is unavailable, then the unavailability duration shall be counted proportionally. However, if STATCOM is out then its duration shall count as a fully unavailable STATCOM Station. However, If the STATCOM unit is out then the STATCOM Station unavailability shall be counted proportionally to STATCOM capacity. STATCOM Station Control system outage shall count as full STATCOM Station unavailability.

'OF' is the Outage Frequency which will be the number of forced outages per year.

The period basis for availability and reliability calculations shall be 12 months. The TSP shall ensure that the design will meet the specified guaranteed and design target value of availability and reliability.

Outage times for repair, maintenance and replacement of components shall be based on the premise that all items in the list of recommended spare parts are on hand, and that all maintenance schedules of recommended maintenance are adhered to. Reliability calculations shall be made and shall be presented as the expected frequency of unscheduled loss of STATCOM Station capacity. For simultaneous occurrence of events, for either of which a loss of capacity would result, the longer repair time shall be counted.

The facilities shall be assumed to be utilized 100% of the time at 100% load, regardless of the actual reactive power generated/absorbed by the STATCOM Station. Hence the availability and reliability assessment will be based on the capability of STATCOM Station to generate/absorb the rated reactive power regardless of whether, it is in service or not.

C.6.9.6 **Availability Requirement**

The calculated availability of the system considered on an annual basis shall be equal to or exceed the following target values.

Minimum availability requirement of each complete STATCOM Station

- Guaranteed for STATCOM Station - 98%

The outages of STATCOM Station capacity caused by the failure of equipment outside the scope of the TSP shall not be considered for the calculation of availability and reliability guarantee. However, such outages shall be restricted to

1) Complete loss to 400 kV supply (at PCC)
2) Human Error.

Circumstances causing curtailment of STATCOM Station capacity that will be included in reliability and availability assessment and which can lead to forced outages shall include but not be limited to the following:

a) Failure of equipment

b) Mal-operation of control and protection system

c) Failure to start

d) Reduction in capacity.

C.6.9.7 Reliability Requirement

a) Reliability

In the assessment of reliability, the following events shall also be considered to constitute a STATCOM Station outage:

i) A STATCOM Station shut down.

ii) A reduction of STATCOM Station capacity due to an outage of any component of STATCOM Station

The calculated reliability of the complete STATCOM Station shall be equal to or exceed the following design target values.

The average outage frequency per year for each STATCOM Station shall not exceed the following values:

	Design target for STATCOM Station	Max acceptable Guaranteed value for STATCOM Station
Total Number of Forced Outages	3 x Nos. of STATCOM Station	5 x Nos. of STATCOM Station

C.6.9.8 GUARANTEED FAILURE RATE OF Sub-modules. (Including all components and electronic). The maximum annual guaranteed failure rate of sub module (including all components and electronic) shall not exceed 1.0% per STATCOM. The failure rate shall not include failures directly attributable to operation and maintenance errors.

C.6.9.9 GUARANTEED VALUE OF FAILURE RATE OF AC POWER CAPACITOR

The maximum guaranteed annual capacitor failure rate shall not exceed 0.15% except for first unit failure. The capacitor shall be considered as failed if its Capacitance value varies more than ±5% of the (actually measured) name plate value. Leakage of oil from the capacitor and the deformation of the capacitor unit shall be considered as a failure even if the capacitance value is within the tolerance limits.

C.7 Design Principles

The objective for the design of the STATCOM Station shall be to achieve a high level of availability and reliability as specified. Special attention shall be given to designing the

STATCOM Station to avoid forced outages. The TSP shall conduct thorough design reviews to ensure the minimum risk of such outages. The TSP shall give careful attention to related factors affecting STATCOM Station performance such as subsystem and system testing, protective relays co-ordination and proper setting of relays.

Except where greater reliability requirements are specified in these specifications, the design basis for STATCOM Station shall be such that no single contingency downstream from the medium voltage bus shall cause a total outage of the STATCOM Station. The following general criteria shall be followed for the design of the control system:

a) Use of components similar to those whose reliability has already been proved in use.

b) Use of good design practices, surge protection, filtering, and interference buffers to assure immunity to sensitive components and circuits against damage and interference by induced voltages and currents in the external cabling and cubicle wiring.

c) Use of fail-safe and self-checking design features.

d) Use of component and equipment redundancy, by means of either duplication or triplication with automatic transfer facilities wherever necessary to meet the requirement of these specifications.

e) Design which in the event of component failures, provides for transfer to a less complex operating mode.

f) Provision of alarm, fault diagnosis and indication

C.8 STATCOM Station Main Components

C.8.1 STATCOM Unit

The main electrical data of the STATCOM Units are the following:

o Rated voltage	20 kV Minimum
o Rated frequency	50 Hz
o Redundancy (Sub Module)	2 Nos. or 5% whichever is higher
o Rated Power of each STATCOM unit/Branch	±50 MVAr Minimum
o Valve Cooling	Deionized/Demineralized water

In general, the STATCOM units shall equally share the load however under contingency conditions it should be possible to run the units with unequal load. Charging of the DC capacitors of Sub module during the initial start-up shall be achieved by means of Resistors and bypass breaker arrangement. The charging resistor for DC capacitor of the STATCOM Sub module should be designed for three charges per hour followed by the appropriate cooling time. Power for the gate level control shall be derived internally from Sub module. The offered

STATCOM Units with their Control system shall be suitably located inside the STATCOM Station Building.

C.8.1.1 STATCOM Valve

The valve shall be designed to meet the performance requirements described in this specification and as described below.

In order to ensure a modern low loss and reliable solution, the STATCOM valve assembly shall use the multi-module (including redundant sub-modules) approach.

The valves shall be designed to ensure satisfactory operation according to the overall performance requirements and include all necessary auxiliary equipment required for smooth and reliable operation. The valves shall be indoor air-insulated and cooled by de-mineralized water. The valves shall be of modular design and have removable Sub-Module for ease of maintenance. The valves shall be mounted to allow easy access for visual inspection, routine maintenance and replacement, and facilities shall be provided to enable easy access.

C.8.1.2 Semiconductor Switches

The electronic switches should be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station. The valve shall be designed with individual semiconductor switches applied in a conservative manner with regard to their basic design parameters. The semiconductor switch shall meet the requirements of IEC 60747 except where otherwise specified herein.

The semiconductor switches shall be designed to withstand all stresses expected under steady state, transient and temporary overvoltage conditions. Basic semiconductor devices shall be of the Press Pack type, or packaged to provide short circuit means in case of device failure such that the STATCOM can continue to operate without interruption. The adjacent sub-module should be protected against the possible explosion of the semiconductor switch.

Under the restriction of redundancy (minimum two or 5% whichever is higher) i.e. the failure of any semiconductor switch or sub module or monitoring device etc shall not prevent continued system operation. In the event of any of the above failures, the STATCOM shall annunciate and identify the specific location of the failed device and continue operation until such time as repairs can be scheduled. During such time till the next shutdown can be availed, the STATCOM must continue to operate without downgrading STATCOM capability.

The switching device's design should include an appropriate allowance for unequal voltage distribution across individual devices in the valve due to the stray capacitor and component tolerances.

The switching device's design should include an appropriate allowance for unequal voltage distribution across individual devices in the valve due to the stray capacitor and component tolerances.

Each switching device should be able to operate within component ratings, generally with at least two failed sub-module or levels. The number of possible failed sub-modules or levels as specified shall be consistent with the availability requirements of the STATCOM system.

C.8.1.3 Sub module for Multi-Module Topology

The key element of the multi-module topology shall be the sub-module. By increasing the number of these sub-modules, it is possible to obtain high voltage with extremely low harmonic distortion and very low dv/dt using a low switching frequency that reduces power losses. Sub-module shall have the following characteristics:

VSC sub-modules should be protected against over voltages with appropriate strategies. A description of the failure mode of the switching device and the strategies used for failure should be provided.

In each fiber optic cable (having multiple fiber cores) used for control/communication purposes of sub-module at least two fiber cores shall remain available as spare for future use.

C.8.1.4 The STATCOM sub-module has DC capacitors that require a charge to allow full functionality and performance. At the startup of the STATCOM Station, the capacitors are discharged. During the energization sequence of the STATCOM, Capacitors are charged from the main power grid via resistor operated in series to the main connection circuits. Once the desired charging voltages are reached, the charging resistor circuit is bypassed using a bypass switch/breaker.

The Type and Rating of the charging resistor and associated bypass switch shall be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station and shall conform to the relevant Standard.

C.8.1.5 STATCOM Valve Cooling system

A closed-loop recirculating system shall be provided with full heat rejection capacity with redundancy for pumps, heat exchangers, and fans, appropriate to the STATCOM Station availability requirements. The cooling system should be able to maintain full capacity at maximum ambient temperature and maximum STATCOM reactive power output. The cooling system should be able to operate at the lowest ambient temperature and zero output specified. The Valve cooling system shall have black start capability and necessary Uninterruptible Power Supply (UPS)/ Uninterruptible Motor Drives (UMD) shall be provided separately for each STATCOM Unit.

The valve cooling system shall be designed to meet the performance requirements described in this specification and as described below.

a) Each STATCOM Unit shall have its own de-ionized water valve cooling system with redundant pumps.

b) For cooling the STATCOM valves, a deionized re-circulating (closed loop) water system shall be used.

c) Water to air heat exchanger shall be used for cooling of this de-ionized water. Water to water heat exchanger shall not be employed.

d) System shall be designed such that no shut down of STATCOM be resorted to for making up the deionized water in the system. The make-up water should comply with the recommended pH and purity.

e) Cooling water shall have a constant flow rate irrespective of loading. The flow rate shall be decided on the basis of extreme operating conditions.

f) The control system for the cooling system shall be redundant type including the provision of redundant control supply and main power supply. However, in place of the redundant control system for the cooling system, suitable alternate mode is also acceptable meeting the requirement of fulfilling cooling system operation even if failure of cooling control system.

g) 2x100% pumps with one as standby shall be provided for the primary. In case a pump failure occur, the second pump shall automatically switch in without shutting down the STATCOM. An alarm shall be displayed at the control panel for the failure of the first pump and standby pump in operation.

h) Each cooling system shall be provided with an independent/dedicated UMD supply however common battery for both UMD power supply may be accepted. An UMD system will provide an extended capability of the STATCOM Station to deliver reactive power without any interruption, adding a buffer against the system faults or during events such as delayed voltage recovery or Transient over Voltage (TOV).

i) The secondary cooling system shall be a redundant type such that it shall be possible to take out 10% (minimum one number) of the cooler module (fan unit) of secondary cooling system without affecting the rated performance of STATCOM).

j) Normally no make-up water shall be required however in case of expansion vessel level going low; the same shall be replenished automatically by means the of make-up water tank and make up water pump to be supplied with the system.

k) TSP shall provide a water treatment plant of sufficient capacity. The purification (treatment) system shall be designed to maintain conductivity below 1 micro Siemens. A resistivity cell in the outgoing water from the deionizer should detect the depletion of ionized material. Filters and deionizers shall be designed to allow replacement during operation. Normal replacement shall not be required more than once every year.

l) Filters and deionizer/deoxidizer material shall be designed to allow replacement within minutes without shutdown of the cooling unit. (Normal replacement should not be required more than once/year).

m) Primary cooling system shall monitor its own operation and condition of cooling water.

n) The protection system of the cooling cycle shall have minimum following alarms:

i) Depleted deionizing cell

ii) Low water resistivity

iii) High water temperature

iv) Primary pump stopped

v) Fan stopped

vi) Primary pump or fan interlock circuits faulty

vii) Primary cycle (Make-up water) tank level low

viii) Failure of control supply.

ix) UMD/UPS fault.

o) Following shutdown alarms / TRIP shall be provided with cooling system protection. Excessive low water resistivity excessive high water temperature, complete loss of auxiliary supply to primary pumps, low flow, low pressure etc.

p) The dissipative components of the converter are cooled with deionized water.

q) The power losses are transferred to the external ambient by means of a deionized water /air heat exchanger. All the piping and other components shall be provided. complete instrumentation set including following shall be mounted on board in order to check the status of the cooling system.

- Conductivity gauge system.
- Flow meter equipped with two set points (alarm and trip).
- Pressure meter
- Two thermometers for the inlet and two thermometers for the outlet (two set points for alarm and trip)
- Thermostat

r) The status of the cooling system shall be monitored by means of the control system.

s) Replacement of certain cooling equipment (e.g. pumps, fans, cooler unit etc.), if defective, shall be possible while the cooling system still operates.

C.8.1.6 Tests on STATCOM Unit Valve

All applicable tests i.e. Operational Type Tests, Dielectric Type Tests and Test for valve insensitivity to electromagnetic disturbance and Production tests shall be done as per the latest edition of IEC 62927.

C.8.2 STATCOM Station Control equipment and operator interface

C.8.2.1 Control Equipment

The control systems should achieve the functional objectives given in 6.2. The accuracy of voltage should be within ± 1% of the reference voltage. The accuracy of the gradient and linearity of the slope delivered by the STATCOM Station should be defined in relation to the current deviation from the theoretical slope defined in 3.1. The maximum deviation should be less than ± 5% of the nominal current.

The control system design shall be based on a single fail criterion i.e. failure of any one component in the system should not result into outage of the complete system. As a minimum, a dual (hot standby) digital programmable controller shall be supplied for each STATCOM unit/branch and STATCOM Station to control the STATCOM, MSRs and MSCs completely including the functions listed as mentioned below:

a. The controller shall have diagnostic and self-checking features for both itself and for valves, gate firing and drive circuits, interface hardware, and software. This is required to reduce outage times and to facilitate fault finding.

b. The Controller shall be reprogrammable. The Owner shall have at least the following possibility for changing the following reference and limit values via HMI:

c. Closed loop Controllers:

The STATCOM Station controller shall have the means to modify the reference set points. This refers to the functionality that will allow all the control parameters to be adjustable within selectable limits and is inclusive of, but not limited to following:

- Voltage controller
- Q controller (reactive power controller).
- Supplementary VSC current controller.
- Other supplementary control functions.

d. Sequence Controllers:

The sequence control and open-loop controllers shall include the control of all switchgears and associated control gear and external devices.

e. The Controller shall have at least 10% excess I/O capacity to allow future program upgrades to satisfy the changing requirements of the power systems or future extensions to the STATCOM Stations. As a minimum, a control of up to 4 future HV shunt devices (reactors or capacitors) shall be included in the offer.

f. All control signals available for remote control must also be available locally so as to ensure that a local operator can operate the STATCOM Station if the communications link between STATCOM Station and remote control centers is lost.

g. A changeover switch shall be provided for control of the selection of local or remote control.

h. TSP shall provide the equipment necessary for the purpose of control, protection and interlocking of all equipment within the scope of supply.

i. TSP shall be responsible for the design and coordination of control, protection and interlocking system and switching sequences within the STATCOM Station. All necessary interfacing required between AC switchyard equipment and STATCOM Station for the above purpose shall also be included in the scope of TSP.

j. It is proposed to control STATCOM through a Supervisory Control and Monitoring System (SCADA). All the data shall be acquired through suitable means from the field and various

components and control is executed through the redundant HMI. The local STATCOM Station Control system shall consist of a redundant STATCOM Station controller, redundant HMI workstation, Gateway, STATCOM Station Control System Engineering cum Disturbance Recorder (DR), PC which can also be used as standby HMI workstations in case of emergency with associated peripheral equipment such as color laser log Printers, Color laser jet fault record printer, GPS System, Inverter / UPS etc. all interconnected via redundant Ethernet based Station LAN Network. Each work-stations and PCs at STATCOM Station shall have at least 19" LED display.

k. In addition to the above, HMI workstation (identical to HMI Workstation provided in the STATCOM Station control room) should also be provided in the control room of the main 400kV substation. This HMI workstation should be powered from an independent UPS system adequate enough to provide power to the HMI workstation for a minimum two hours in case of auxiliary power failure.

l. The control equipment shall satisfy the reliability and availability requirements specified in this specification

m. All necessary measures shall be taken to ensure satisfactory operation in the presence of harmonic current and voltage, noise and radio interference signals. The equipment shall be designed to operate in the environmental conditions specified in the specification.

n. There should be a provision for independent operation of MSC/MSR after delinking it with STATCOM controls when STATCOM is out of service due to any reason.

o. The threshold values for switching the MSC/MSR on/off shall be configurable in all modes of operation.

C.8.2.2 **Operator Interface**

a) Each STATCOM Station shall have a SCADA consisting of an HMI which shall provide a Centralized (local) operator control of the STATCOM Station functions. All human interface operations necessary for the control and monitoring of the STATCOM shall be provided at this point.

b) Any abnormal condition requiring operator action or intervention or maintenance on any of the STATCOM Station subsystems shall be annunciated at the STATCOM Station control room and the Substation control room.

c) The local HMI shall include the following diagrams as different screens in the display system:

i. Complete STATCOM Units and STATCOM Station single line diagram including EHV and MV busses

ii. AC Auxiliary supply and distribution

iii. DC Auxiliary supply and distribution

iv. STATCOM Valve cooling systems

v. Interlocking system.

d) These diagrams shall indicate status, alarms, voltages, currents, etc. The HMI shall provide complete diagnostics on alarm and trip indications as required and discussed in this specification, including SER information.

e) A facility shall be provided whereby the local HMI features and functions shall be accessible from remote. A remote user shall be able to view screens and change STATCOM Station parameter settings.

f) As the substation where STATCOM Station shall be installed, will be equipped with Sub-station Automation System (SAS) conforming to IEC 61850, it is required that STATCOM Station control and monitoring shall be integrated with SAS at the main Sub-station by the TSP. It is proposed to connect STATCOM Station's SCADA with SAS through a Gateway and the database, configuration etc of the main substation SAS shall be upgraded to incorporate STATCOM Station events, alarms, Controls (both switchgear and control functions of STATCOM Station like the setting of parameters etc.) so that STATCOM Station can be effectively monitored and controlled from main substation SAS and shall be monitored from Load Dispatch Center (RLDC).

C.8.3 STATCOM Station Protection System

C.8.3.1 Protection system Design

a) To ensure that faults are cleared within stability critical clearing time, to minimize damage to the plant, and to avoid voltage collapse, loss of load, or load limitations, TSP shall provide a high speed main protection scheme. An independent (having a separate measurement system) back-up protection scheme shall be provided in the event of the main protection scheme failing or taken out for maintenance.

b) The STATCOM Station shall be completely self-protecting (unit protection). STATCOM Station shall be protected from damage for all conditions of over-current, overvoltage, excessive reactive power loading, unbalance due to loss of capacitor elements, phase-to-phase and phase-to-ground faults, three phase faults, loss of cooling, semiconductor valve or control malfunction, faults (STATCOM, MV system) in individual primary connected components of the STATCOM, HV system faults, etc. The STATCOM Station shall withstand the maximum fault current for a period of the maximum fault clearing time as specified, considering second contingency cases due to the previously mentioned conditions.

c) All protection equipment and systems should be properly coordinated to prevent incorrect operations of the protection equipment or systems during normal STATCOM Station operation, including anticipated abnormal conditions on the transmission system, as specified. Fail-safe principles should be applied throughout.

C.8.3.2 The basic principle and order of precedence for the control and protection shall be, to take care of the following:

- Correctly identify a fault, problem or error condition,

- Only if necessary, isolate the minimum number of components, subsystems whenever possible,
- Utilize degraded modes to the maximum extent possible either directly (no interruption of the STATCOM Station operation) or indirectly (by tripping the STATCOM Station momentarily in order to isolate the branch and re-energization of the STATCOM Station).
- Trip STATCOM Station and Block.

a) Failure of the STATCOM Station Interface (SCADA interface) shall not result in a Protection trip of the STATCOM Station. A fail-safe philosophy shall be implemented to allow the STATCOM Station to operate safely and independently from the STATCOM Station Interface (SCADA interface).

b) Protection equipment shall be designed and applied to provide maximum discrimination between faulty and healthy circuits.

c) The Protection shall be sufficiently sensitive to cater to the full range from maximum to minimum fault level conditions. The Protection shall also be suitable for a system fault level equal to the maximum short circuit capacity of the substation. All current transformer designs shall be based on these fault levels.

d) All required protective, control devices, etc including auxiliary instrument transformers and panels, relays, cabling, wiring, indication, and all other associated plant and material necessary for the effective operation of the protection systems shall be supplied and installed by TSP.

e) The protective relays shall be microprocessor based. Relays shall have approved characteristics and be mounted in dust and moisture-proof cases. The protective relays shall be provided with visual indications for starting, tripping and failure of the protective function. The LEDs shall be reset without opening the covers. The protection relays shall also be equipped with HMI facilities suitable for manual parameter settings and viewing of the settings. Relays with provision for manual operation from outside the case, other than for resetting, are not acceptable. Relay settings shall be visible and readable without having to remove the relay cover. Relays shall be of approved construction and shall be arranged so that adjustments, testing and replacement can be effected with the minimum of time and labor. Auxiliary Relays of the hand reset type, if provided shall be capable of being reset without opening the case. Electrically reset tripping relays shall be provided as necessitated by the system of control, such as for those circuits subject to remote supervisory control.

f) Relay contacts shall be suitable for making and breaking the maximum currents which, they may be required to control in normal service but where contacts of the protective relays are unable to deal directly with the tripping currents, approved Auxiliary tripping relays shall be provided. In such cases, the number of auxiliary tripping relays operating in tandem shall be kept to a minimum in order to achieve fast and reliable fault clearance times. Separate contacts shall be provided for alarm and tripping functions. Relay contacts shall make firmly without bounce and the whole of the relay mechanisms shall be as far as possible unaffected by vibration or external magnetic fields

g) Steps shall be taken to protect the circuitry from externally impressed transient voltages which could reach the circuitry via connections to instrument transformers or the station battery. The routing of cables should be such as to limit interference to a minimum. Any auxiliary supplies

necessary to power solid-state circuits shall be derived from the main station battery and not from batteries internal to the protection.

h) **Relay communication**

The Relays shall also have a communication port provided on the front of the relay for configuration and parameter settings as well as downloading of data. A direct port suitable for remote communication shall also be provided at the back of the Relay. This port shall conform to IEC - 61850.

i) **Tripping schemes**

- Tripping of MV circuit breakers shall be done by means of two-separated trip signals.
- Duplicate high security tripping circuits for MV Circuit Breaker shall comprise two independent high speed (less than 10 ms) high burden (greater than 150 W) tripping relays for each circuit, each with its own independent DC supply. The trip circuits for all circuit breakers need to be equipped with a "lockout" function and it shall be possible for this to be reset manually and remotely by the operator.

j) The protection for the power system is based on a normal switching state and an occurrence of a single fault. This means that faults resulting from maintenance as well as the simultaneous occurrence of two or more faults are not taken into account.

k) The input circuits of the digital protections shall be monitored by means of a plausibility check. If any incorrect information is found, the protection function shall be blocked by the protection system. All protection relays shall have facilities for monitoring trip circuits. Detection of an interruption in the case of a switched on circuit breaker shall be signaled.

l) **Test facilities**

- It shall be possible to test the protective device during operation without causing trips. Links shall be provided for the isolation of individual protection trip circuits and the common protection trip circuit to each circuit breaker trip coil.
- Separate test facilities shall be provided for each current and voltage transformer secondary circuit so as to give access for testing of protection relays and associated circuits. The Test facility to be supplied shall have two selectable positions, a Service and a Test position. In the service Position, the test switch connects CTs and VTs signals to the Relays and trip commands to the circuit breaker trip coils. In the Test Position, the test switch applies a short-circuit to the Current Transformer (CT) secondary windings and open circuits the VT secondary cores and allow injection of secondary current and voltage into the relay. At the same time, the Trip commands to the Circuit Breaker Trip Coils are isolated. The test switch supplied shall be to the Approval of the Owner.

m) The protection of the electrical system shall be designed and installed in such a way that the failed equipment is disconnected selectively and automatically. All equipment have to remain operative during transient phenomena, which may arise during switching or other disturbances to the system.

n) **Auxiliary DC Supplies**

- The protection concept has to be designed in a way so that back-up protection is provided at all times. All protection relays shall be configured in a way that failure of one Auxiliary DC

system will not affect the relay. If all DC supplies to the controllers are lost, the STATCOM Station breaker must be tripped via the protection panel.

o) **Electromagnetic Compatibility**

- Electronic Relays and other electronic devices and the ancillary circuits connected to them, such as power supplies, current and voltage transformer secondaries, status or tripping or alarm circuits shall be designed to ensure that they are compatible for use in the hostile electrical environment found in an MV or HV substation.
- Adequate steps by means of suitable design, shall be taken to prevent Electromagnetic Interference (EMI), (generated by sources such as circuit breakers, disconnectors, lightning, radio or radar emissions, switching contactors in DC circuits etc) or Electrostatic Discharges (ESD) from affecting relay performance or causing damage to components.
- All relays offered shall therefore have been type-tested to meet the current requirements of IEC Standards with respect to High Frequency disturbance, Fast Transients, Electrostatic Discharge, Radio Frequency Interference testing etc.

p) List of Protection functions for STATCOM Station

Coupling Transformer Protection:

i) Biased Differential protection (87T)
ii) REF protection (64T)
iii) Overcurrent protection (50, 51)
iv) Ground Overcurrent (51N)
v) Over flux protection (HV and MV)
vi) Transformer mechanical trips

STATCOM MV Bus Protection:

i) Bus Differential protection (87)
ii) Ground over current protection (51N), used with a neutral Grounding Transformer
iii) Under / Over Voltage (59 Ph-Ph) protection
iv) Over voltage (Open Delta) protection

STATCOM Branch Protection:

i) Differential protection (87)
ii) Overload protection (49)
iii) Overcurrent protection inside delta (50, 51)
iv) Negative phase sequence protection (46)
v) STATCOM branch overcurrent protection (50, 51, 50N, 51N)

MSR Branch Protection:

i) Differential protection (87)
ii) Ground over current protection (51N)
iii) Reactor branch unbalance protection (Negative Phase Sequence)
iv) Thermal Overload protection

MSC Branch Protection:

i) Ground over current protection (51N)
ii) Capacitor Overvoltage (Using current signal) protection.
iii) Capacitor unbalance protection (60C)
iv) Over current protection (50, 51)

- The protection functions listed above are the minimum set of function to be provided, any additional protection required to fulfill the requirement of the protection system shall also be provided.
- Further protection functions of individual branch (STATCOM, MSC, MSR) shall trip the respective branch MV CB (Circuit Breaker).
- All CBs shall be provided with individual Breaker Failure protection relays. Breaker Failure relay shall have the logic based on the current signal or CB close open status.
- Any fault on MV bus will trip the 400 kV breaker. However, any branch fault shall be cleared by the respective MV branch Circuit Breaker.
- Protection System for the STATCOM valve portion of the STATCOM station shall be provided in the redundant controllers to isolate the STACOM valve during internal overload/overvoltage, ground fault etc.

C.8.4 STATCOM Station Fault Recording System

An Integrated Transient Fault Recording (TFR) System shall be supplied, installed and commissioned. This shall include trigger level settings for analog signal, etc subject to review and comment. Disturbance and event recording facilities are required for local monitoring of the STATCOM following a disturbance on the power system or the STATCOM System. The TFR shall be GPS synchronized.

The following inputs are required:

- All analog signals (output signals) including 3-ph and sequence values of voltage, current.
- All digital signals (control outputs, status indications, commands, alarms, and trip indications). Internal STATCOM Station control signals/variables to be selectable.
- The accuracy of the TFR for event inputs shall be at least 100 µs (sampling rate of minimum 10 kHz).
- The TFR shall have provision for remote access and retrieval of recorded information onto a PC. For this purpose, a communication link to the substation LAN shall be implemented.
- The remote software application for data retrieval shall be included.
- There shall be multiple channels to view 3-ph and sequence values of voltage, current.
- TFR file shall be viewable in any open source software.

C.8.5 Mechanically Switched Reactor (MSR)

MSR is a fixed source of inductive reactive power connected in shunt to the MV bus of STATCOM Station and switched by means of a circuit breaker (with a control switching device)

based on the command from the STATCOM Station control system. The rated capability of MSRs shall be at 400kV (Referred to as "Point of Common Coupling" or PCC) and in the steady state frequency range of 48.5 Hz-50.5 Hz. However, the MSR Components shall be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station. The individual components of MSR shall be able to withstand the onerous conditions imposed by system overvoltage and harmonics. The MSR consists of 3-ph Air Core Reactor, 3-ph MV Circuit breaker (SF6/Vacuum type), associated current transformer, 3-ph Disconnector and associated safety grounding switch. The MSR area shall be fenced and a castle key interlock with safety grounding switch shall be provided for human safety.

Specifications for individual components like Air core reactors etc are provided in the subsequent clause.

C.8.6 Mechanically switched capacitor (MSC) (if applicable)

MSC is a switched 3-phase capacitor bank connected in shunt to the MV bus of STATCOM station and switched automatically by means of a circuit breaker (with control switching device) based on the command from STATCOM Station control system. The rated capability of MSCs shall be at 400 kV (Referred to as "Point of Common Coupling" or PCC) and in the steady state frequency range of 48.5 Hz-50.5 Hz. However, TSP will ensure the corresponding values at PCC (400 kV) for possible operating condition measured at PCC. The MSC Components shall be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station. The individual components of MSC shall be able to withstand the onerous conditions imposed by system overvoltages and harmonics. The MSC consists of 3-ph AC power capacitor bank, a current limiting air core reactor as required, 3-ph MV Circuit breaker (SF6/Vacuum type), associated current transformer, 3-ph Disconnector and associated safety grounding switch. The MSC area shall be fenced and a castle key interlock with safety grounding switch shall be provided for human safety. Specifications for individual components like Capacitors, Air core reactors etc are provided in the subsequent clauses.

C.8.7 Air Core Reactors

a) Reactors shall be air core, dry type, be suitable for outdoor installation and there shall be no tapping on the reactors. The insulation level shall be adequate and TSP has to ensure proper insulation coordination.

b) The insulation of the reactor shall be class F and hot spot temperature rise shall not exceed 105 °C above ambient temperature. Winding temperature rise shall not exceed 80 °C above ambient temperature.

c) The reactor shall be designed to withstand thermal dynamic shocks and mechanical shocks while in service and during erection.

d) The reactor shall fully conform to the relevant IEC standard.

e) The reactor shall be designed to withstand overloading due to over voltage as specified and shall also be subjected to excitation by harmonics; the reactor must be able to withstand such events without deterioration in normal life.

f) The reactors shall be subjected to type and routine tests in accordance with the latest issue of IEC-60076 as appropriate to the type of reactor provided.

g) Tests on Reactors: The reactors shall be subjected to type and routine tests in accordance with the latest issue of IEC-60076 as appropriate to the type of reactor provided.

C.8.8 AC POWER CAPACITORS

(i) General

a) The capacitor banks shall comprise capacitor units, discharge devices, protection equipment, series reactor as required, earthing switches, suitably connected in series and parallel, mounted at ground level with protected fencing all around. The number, arrangement and connection of capacitor banks shall be designed to suit the requirement of the compensator as a whole. If convenient, the capacitor banks may be used in conjunction with reactors. In this event, the rating of the capacitor shall be adequate to cope up with the harmonic loading. The frequency variations shall also be considered. To limit the peak inrush current for switching in the capacitors, current limiting reactors with parallel connected damping resistors, if required shall be connected in series with shunt capacitor banks.

b) The capacitors shall be provided with internal-type fuses. Alternatively, the fuseless capacitor is also acceptable.

c) Fuses shall not melt nor shall deteriorate when subjected to the inrush current during the life of the capacitor bank.

d) With the capacitor charged to a peak voltage, the fuses associated with the healthy elements shall not melt when carrying the discharge current resulting from a breakdown of an element or from an external short circuit.

e) Fuses shall be capable of disconnecting a faulty element over a range of voltage across the unit terminals from 0.9 Un to 2.0 Un. In addition, if all the elements in the same row of an internally fused capacitor were to fail as a result of a cascading action, the last fuse element to melt shall be capable of successful disconnection with a voltage of not less than 1.5 times.

f) After fuse operation the fuse assembly shall be able to withstand continuously at least 1.5 times the rated unit voltage U_n across the gap for 10 Seconds.

g) Fuses shall preferably be of the current limiting type but fuse system shall in any event be designed to ensure that energy released into a faulty capacitor unit is less than the valve that will cause rupture or bursting of the container.

h) The capacitor units shall be the outdoor type. The container of the capacitor shall be of stainless steel.

i) Each capacitor unit shall be readily accessible and replaceable without disturbing any other unit. The supporting frames shall be designed to provide adequate ventilation to the units.

j) The dielectric fluid used in the capacitor unit shall be environmentally safe and bio-degradable, non-toxic. Polychlorinated biphenyle (PCB) type dielectric or any of its derivatives shall not be acceptable.

(ii) Construction and Design Requirement

a) The capacitors shall conform to IEC-60871. The capacitors shall be provided with internally mounted discharge resisters with characteristics in accordance with IEC-60871.

b) The current limiting reactors (as required) shall be dry type and connected in series with the capacitor bank. Suitable lifting lugs shall be provided.

c) The capacitor enclosure shall have sufficient strength to withstand without damage or loss of life, mechanical load, both in operation and during erection. The loads shall include electromagnetic forces including those during faults external or internal to the capacitor bank, wind loading, forces due to expansion and contraction caused by ambient temperature and load variation, and seismic effects all as specified.

d) The capacitor units shall be interchangeable in order to reduce the spare requirements and simplify maintenance procedures.

e) The capacitor stack shall be vibration free. The stack shall have a fixed potential, that is connected to one electrical point in the bank. The stack shall be of galvanized structural steel.

f) The capacitor racks shall be supplied complete with all capacitor units, insulators, and connections and shall be equipped with lifting lugs/eyes to facilitate assembly into the stacks. The racks shall be constructed of galvanized structural steel. No drilling of galvanized steel shall be allowed. Each rack shall be labeled with the weight of the fully equipped racks, the phase, and the bank of which it forms a part. The maximum and minimum capacitor unit capacitance which may be substituted into the racks as spares shall be suitably identified. Suitable warning labels shall be affixed.

g) The capacitor shall be specially designed to be suitable for intermittent duty.

h) The capacitors should comply with the overload capacity as per NEMA Standard.

i) The capacitor elements shall be vacuum dried inside the case prior to impregnation with dielectric fluid. After impregnation, the capacitor unit shall be sealed immediately upon removal of the impregnated reservoir.

j) The discharge resister shall discharge the unit from peak operating voltage to less than 75 Volts within 10 minutes.

k) The capacitor case shall be made from type 409 stainless steel or equivalent stainless steel with all joints welded and tested for leaks.

l) All racks and bus insulators as well as the insulators used to insulate each stack of capacitor from ground level shall be pincap or post type. The minimum voltage rating shall be 15 kV and low frequency wet withstand voltage of all insulators used to insulate within or between the capacitor rack of a stack shall not be less than three times the actual voltage stress across the insulators. The insulator shall be outdoor type manufactured from wet process. The

insulators shall be bolted to the top members of the frame to support electric-grade aluminum buses.

m) The size and groupings of the individual capacitor units shall be such that a single blown fuse will not cause the voltage across the parallel group to rise by more than 10%.

n) The redundancy to be provided, shall be as per the requirement specified regarding reliability and availability in the clause mentioned elsewhere.

(iii) Capacitor Unit Failure Detection

The stages of capacitor units or element failure detection shall be provided as below:

a) A three-step unbalanced current protection shall be provided in each capacitor bank to initially generate an alarm when the unbalance limit is reached and finally to trip the bank in case of the limit is exceeded.

b) The first stage shall generate an alarm and the capacitor unit shall continue in service. It may be assumed that the bank shall be disconnected for maintenance within 2 weeks.

c) The second stage shall generate a separate alarm and a delayed trip signal which will disconnect the bank after two hours.

d) The third stage shall cause immediate disconnection of the Capacitor Bank.

(iv) Tests on Capacitors

All the tests on capacitor units shall be in accordance with the latest issue of IEC 60871.

C.8.9 Coupling Transformer

The TSP shall provide single phase coupling transformers to operate as 3- phase bank with one unit as a common spare (cold spare) with necessary auxiliary arrangements for stepping down the voltage from 400kV system to a suitable medium voltage value as required for replacing any one of the faulty phase units without physically shifting the transformer. The Medium Voltage side of the coupling transformer to couple with the STATCOM shall not be less than 20 kV to ensure optimum power transformation.

The Coupling Transformer shall be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station. The transformer should be designed and rated to carry complete capacitive and inductive reactive loading as specified for STATCOM Station including that of mechanically switched capacitors (MSC) and Reactors (MSR) etc.), as well as harmonic currents associated with the most onerous operating conditions of STATCOM Station, without loss of life.

The coupling transformer shall be designed in accordance with the most up-to-date experience in STATCOM application and shall incorporate the latest improvements of design currently employed in the industry. The Comprehensive design review of the Coupling Transformer of STATCOM Station shall be carried out by the TSP.

C.8.9.1 **General Requirements**

The coupling transformer shall be designed electrically and mechanically for operating conditions peculiar to STATCOM Station operation, which shall include, but not be limited to the following:

a) Electrical insulation problems resulting from the transformer being subjected to voltages of distorted sinusoidal wave shape because of saturation, harmonics, trapped charges in capacitors etc.

b) The cumulative effect of electro-dynamic forces produced during valve commutation or other short circuit conditions imposed by valve design limitation and valve group operation.

c) Harmonic currents due to STATCOM operation, with reference to additional stray losses resulting from these harmonic currents.

d) No generation of uncharacteristic harmonics by the transformers.

e) Stresses due to normal control operation and other onerous operations such as blocking and de-blocking.

f) Stress due to the fast response requirement of STATCOM for loading from 100% inductive to 100% capacitive and vice-versa.

g) Overvoltage stresses for which STATCOM shall be designed as per specification would apply to the transformer also.

h) All other stresses for which STATCOM Station shall be designed as per specification would apply to the transformer also.

i) The transformer and all its accessories like Bushings, CTs etc shall be designed to withstand without damage, the thermal and mechanical effects of any external short circuit to earth and of a short circuit across the terminals of any winding for a period of 3 seconds. The short circuit level of the 400 kV system to which the transformer shall be connected, will be as per the maximum short circuit level of the main substation. Short Circuit level of the Coupling Transformer shall be as per the Short Circuit level of the respective Substation. Short circuit level for HV bushing shall be 63 kA for 1 Sec.

j) The transformer shall be capable of being loaded in accordance with IEC 60076 or the overload conditions as specified whichever is the worst. There shall be no limitation imposed by bushings during its terminal fault.

k) The transformer shall be capable of withstanding the mechanical stresses caused by symmetrical or asymmetrical faults on any winding.

l) The transformer should be designed to carry a certain level of direct current consistent with the STATCOM design. To ensure minimum harmonics generation, the saturation flux density of the transformer should be higher than the maximum flux density reached over the full steady state (continuous operating) range; this margin shall be at least 10%. This maximum flux density (over the full steady-state range) is obtained at the highest secondary voltage during any reactive power generation, highest reference voltage, minimum slope, and minimum continuous frequency. The flux density at the highest secondary voltage shall lie in

the linear portion of the BH curve of the core. Any harmonic generated by the transformer should be considered for the design of the STATCOM.

m) All protection class Current Transformers in the coupling transformer shall be of PX/PS type. Other details of these Current Transformers shall be as per protection/metering requirements and shall be decided during detailed engineering. However, the parameters of the Winding Temperature Indicator (WTI) of Current Transformer for each winding shall be as per the Coupling Transformer manufacturer.

n) Transformers shall be capable of operating under natural cooled conditions up to the specified load. The forced cooling equipment shall come into operation by pre-set contacts of winding temperature indicator and the transformer shall operate as a forced cooling unit initially as Oil Natural Air Forced (ONAF) up to a specified load and then as Oil Forced Air Forced (OFAF). Cooling shall be so designed that during total failure of power supply to cooling fans and oil pumps, the transformer shall be able to operate at full load for at least ten (10) minutes without the calculated winding hot spot temperature exceeding 140 degrees Celsius. Transformers fitted with two coolers, each capable of dissipating 50 percent of the heat due to losses at the continuous maximum rating, shall be capable of operating for 20 minutes in the event of failure of the oil circulating pump or blowers associated with one cooler without the calculated winding hot spot temperature exceeding 140 degree Celsius at continuous maximum rating.

o) The transformer shall be free from any electrostatic charging tendency (ECT) under all operating conditions when all oil circulation systems are in operation. In general, the oil flow speed shall not exceed 1.0 m/sec within winding in the oil flow system of the transformers. The manufacturer shall ensure that there is no electrostatic charging tendency in the design.

The Technical Parameters of the Transformer shall be as below:

Sl. No.	Description	Unit	Technical Parameters
1.1	Rated Capacity		
	HV	MVA	To meet the performance requirement and ratings of STATCOM. The transformer shall be suitable for 100% reactive loading
	MV	MVA	
1.2	Voltage ratio (Line to Line)		400 / XX (*)
1.3	Single / Three Phase Design		Single phase
1.4	Applicable Standard		IEC 60076
1.5	Rated Frequency	Hz	50
1.6	Cooling and Percentage Rating at different coolings		ONAN/ONAF/(OFAF or ODAF): 60% / 80%/100% OR ONAN/ONAF1/ONAF2: 60% /80%/100% OR OFAF (with 5 x 25% unit cooler if required)
1.7	Impedance at 75 oC (in percentage)		
	HV–MV		To suit the design requirements.
1.8	Tolerance on Impedance (HV-MV)	%	As per IEC
1.9	Service		Outdoor

1.10	Duty		Continuous Reactive loading
1.11	Overload Capacity		IEC-60076-7
1.12	Temperature rise over 50 oC ambient Temp		
i)	Top oil measured by thermometer	0C	50
ii)	Average winding measured by resistance Method	0C	55
1.13	Windings		
i)	System Fault level		
	HV	kA	63
	MV	kA	To suit the design requirements.
ii)	Lightning Impulse withstand Voltage		
	HV	kVp	1300
	MV	kVp	*
	Neutral	kVp	170
iii)	Switching Impulse withstand Voltage		
	HV	kVp	1050
iv)	One Minute Power Frequency withstand Voltage		
	HV	kVrms	570
	MV	kVrms	*

	Neutral	kVrms	70
v)	Neutral Grounding		Solidly grounded
vi)	Insulation		
	HV		Graded
	MV		Uniform
vii)	Tan delta of winding	%	< 0.5
1.14	Vector Group (3 – ph) (unless specified differently elsewhere)		YNd*
1.15	Tap Changer		Not Applicable
1.16	Bushing		
i)	Rated voltage		
	HV	kV	420
	MV	kV	*
	Neutral	kV	36
ii)	Rated current (Min.)		
	HV	A	*
	MV	A	*
	Neutral	A	*
iii)	Lightning Impulse withstand Voltage		
	HV	kVp	1425
	MV	kVp	*
	Neutral	kVp	170

iv)	Switching Impulse withstand Voltage		
	HV	kVp	1050
v)	One Minute Power Frequency withstand		
	Voltage		
	HV	kVrms	695
	MV	kVrms	*
	Neutral	kVrms	77
vi)	Minimum total creepage distances		
	HV	mm/kV	31
	MV	mm/kV	31
	Neutral	mm/kV	31
vii)	Tan delta of bushings		
	HV	%	Refer Note 2
	MV	%	Refer Note 2
viii)	Max Partial discharge level at Um		
	HV	pC	10
	MV	pC	10
	Neutral		-
1.17	Max Partial discharge level at 1.58 * Ur /√3	pC	100

1.18	Max Noise level at rated voltage and at principal tap at no load and all cooling Active	dB	80
1.19	Maximum Permissible Losses of		
	Transformers		
i)	Max. No Load Loss at rated voltage and Frequency	kW	To suit the design requirements.
ii)	Max. Load Loss at maximum continuous current and at 75O C	kW	To suit the design requirements.
iii)	Max. Auxiliary Loss at rated voltage and Frequency	kW	To suit the design requirements.

Notes:

1. *No external or internal Transformers / Reactors are to be used to achieve the specified HV/MV impedances.*
2. *The criteria for Transformer losses shall be "Copper Loss (Load Loss) > Iron Loss (No Load Loss) > Cooler Loss (Auxiliary Loss)".*
3. *(*) marked parameters shall be decided based on STATCOM manufacturer's requirement.*

C.8.10 STATCOM Station MV Switchgear

The MV Switchgear shall be designed with the aim to achieve operation according to the overall performance requirements of the STATCOM Station.

C.8.10.1 MV Circuit Breaker

The MV Circuit Breaker shall comply with the relevant IEC standard and all other relevant Standards, and as specified in this specification. They shall satisfy the General Technical Requirements and shall be designed to operate in the environmental conditions specified in this specification.

The Circuit Breaker offered should be of SF6 type/Vacuum type only and of class C2, M2 as per IEC

i) The circuit breaker shall be complete with terminal connectors, operating mechanism, control cabinets, piping, interpole cable, cable accessories like glands, terminal blocks, marking ferrules, lugs, pressure gauges, density monitors (with graduated scale), galvanised support structure for CB and control cabinets, their foundation bolts and all other circuit breaker accessories required for carrying out all the functions the CB is required to perform.

ii) All necessary parts to provide a complete and operable circuit breaker installation such as main equipment, terminals, control parts, connectors and other devices whether specifically called for herein or not shall be provided.

iii) The support structure of the circuit breaker shall be hot dip galvanized. Exposed hardware items shall be hot dip galvanized or Electro-galvanized.

iv) MV Circuit Breaker shall be equipped with controlled switching with consequent optimization of switching behavior, when used in:
- Switching of Capacitor Bank
- Switching of shunt Reactor Bank

v) Reactor Switching Duty test shall be conducted on MV Circuit Breaker in line with latest edition of IEC 62271-110.

vi) Type Tested for Back-to-Back Capacitor Bank Switching as per latest edition of IEC 62271-100.

vii) Routine tests as per IEC: 62271-100 shall be performed on all circuit breakers.

viii) The medium voltage circuit breakers in any of the branches shall be designed to switch off metallic three phase short circuits only limited by the transformer impedance of the STATCOM System (Coupling transformer) with the initial short circuit current and DC component according to IEC 60909-0. Thereby the worst case time constant where the maximum short circuit peak and DC component occur shall be considered. The network shall be considered to deliver the maximum short circuit power of the substation.

C.8.10.2 MV Isolator and Earth Switch

The isolators and earth switches shall comply with the IEC and all other relevant Standards, and as specified in this specification. They shall satisfy the General Technical Requirements and shall be designed to operate in the environmental conditions specified in this specification.

i) The isolators and accessories shall conform in general to IEC-62271 series as per relevance (or IS:9921) except to the extent explicitly modified in specification.

ii) Earth switches shall be provided on isolators wherever called for.

iii) Switches shall be motor operated with local and remote operation features and local manual operation features. Remote operation of Earth Switch is not required.

iv) Disconnections and earth switches shall electrically and mechanically be interlocked. Castle Key interlocking facilities shall be provided to mechanically interlock the earth switch and Isolator to the doors of valve rooms.

C.8.10.3 Instrument Transformers for STATCOM Station

The instrument transformers shall comply with the relevant IEC Standards. They shall satisfy the general Technical Requirement specified in the specification and shall be designed to operate in the environmental conditions specified in this Specification. The instrument transformers provided for control, metering and protective relaying functions shall have voltage and current ratings, accuracy ratings and burden capabilities adequate to provide their designated functions within the overall accuracy requirement of the systems.

Voltage Transformers

Voltage transformers shall comply with the relevant IEC standards IEC 61869 (Part-1, Part-3 and Part-5).

Current Transformers

Current transformers shall comply with IEC 61869 (Part-1 and Part-2). Type tests and routine tests as per relevant IEC.

C.8.10.4 Surge Arrester

TSP shall install the surge arresters necessary for the protection of the equipment associated with the STATCOM Station in accordance with the requirements as per the insulation coordination study. The surge arresters shall give consistent protection to their associated equipment against overvoltage produced by lightning or switching surges, internal or external station faults, and other system disturbances.

The surge arresters shall be rated such that they are able to discharge a specified maximum energy due to the application of lightning, switching surges, temporary over voltages and faults as determined by insulation coordination studies, without coming into the temperature region where thermal runaway could result upon subsequent application of maximum transient and steady state voltage conditions.

The arrester housing shall be porcelain/composite type. The end fittings shall be made of non-magnetic and corrosion proof material.

Internal components shall be designed to eliminate internal corona and also to ensure minimal capacitive coupling with any conducting layer of pollutant on the outside of the porcelain housing. Particular attention shall be given to the high discharge currents which some of the arresters may experience in service due to discharge of stored energy of the AC filter and reactive compensating equipment, tripping of STATCOM etc.

C.8.11 STATCOM Station Auxiliary Power Supply

The auxiliary supply of STATCOM Station shall conform with the system requirements relating to reliability, availability, and redundancy, performing continuously to help ensure that the complete STATCOM Station operates as per the requirements. STATCOM station Auxiliary supply including all necessary switchgear (viz. AC/DC, lighting boards etc.) shall be completely separate from the main 765/400/220 kV substation auxiliary supply, all loads of STATCOM station shall be fed from this supply. The auxiliary supply provides power to the controllers, cooling system, station supplies, and various other essential and non-essential loads. With the exception of the cooling system, all other essential loads are also connected to the DC system of the STATCOM Station which is also to be provided separately from the DC system of the main 765/400/220 kV substation.

The auxiliary supply system shall be able to provide a stable supply for the STATCOM Station during system faults such as single-phase faults, phase-to-phase faults, and three-phase faults and LVRT (Low Voltage Ride Through) to allow continuous operation of the STATCOM Station during these transient events.

The auxiliary supply system of each STATCOM Station shall consist of two main incomers and one emergency incomer from DG set. The two main incomers shall be required to be paired to act redundantly to help ensure a certain degree of reliability and availability. One of the main incomers shall be supplied from 33 kV tertiary winding of 765/400/33 kV or 400/220/33 kV ICT at the main substation.

The other main incomer can be supplied from any one of the following three options:

- Supplied from Tertiary/Yoke winding of STATCOM coupling Transformer.
- Supplied from MV Bus Bar of STATCOM Station.
- Supplied from Power PT on HV side of coupling Transformer.

Wherever the Voltage variation on the incomer is very high, a solid state AVR (Automatic Voltage Regulator) shall be provided to control the auxiliary supply voltage.

All MV incomers shall be provided with suitable CB, disconnector, instrument Transformer etc along with necessary protection system.

C.8.12 Fire Protection System for STATCOM Station:

Necessary fire protection for STATCOM units, Coupling Transformer, MSC, MCR and Harmonic filter (if any) shall be required. The main features of these protections are as under.

Fire Detection and Alarm System:

Suitable fire detection system using smoke detectors and/or heat detectors shall be provided in STATCOM Station for all room and areas. These smoke fire detection systems shall be connected to a separate Fire annunciation system clearly identifying the zone.

Hydrant System:

The hydrant system shall be extended from firefighting system of the substation in the yard. Suitable number of hydrants shall be provided for protection of STATCOM Station equipment

in the yard namely Coupling Transformer, MSCs, MSRs and Harmonic Filter (if required) etc as applicable for the station. Further suitable number of hydrants shall also be provided for STATCOM Station building

HVW System:

HVW (High Velocity Water) Spray system shall be provided for coupling transformer. The tapping for HVW system shall be done from nearby transformer/Reactor or any other suitable point of the main substation fire-fighting line.

Fire protection system shall be provided in accordance with the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2023.

C.8.13 Air-conditioning and ventilation system for STATCOM station

The STATCOM Station shall be provided with Air conditioning system as per requirement.

1) AC System (Except Valve Hall):

Air condition system shall be provided for the following rooms in the STATCOM Building:

a. Control and Relay room
b. Battery room
c. Conference Room
d. Store cum workshop
e. Cooling system room
f. Lobby

Capacity and quantity of the AC units shall be decided based on heat load calculation and redundancy requirement.

2) Air-Conditioning System for Valve hall:

Air-Conditioning shall be provided for each Valve room for maintaining the following inside conditions round the year:

DBT - 35 °C (Maximum) Relative Humidity (RH) - 60% (Maximum)

The system shall be designed for an outside ambient temperature of 50 °C. Based on the above system design and parameters for valve room the AC system shall comprise "AHU and Air-cooled DX Condensing units" with one Main and one Standby unit for each room. The system shall be designed for 24 Hours, 365 Days of the year operation to maintain the inside temperatures of the Valve Hall for proper operation of the critical equipment. The air-cooled condensing unit shall be designed for continuous duty.

C.9 Engineering studies

The TSP shall carry out studies as brought out in this section with a model of the STATCOM in PSSE and PSCAD and documentation of the same shall be preserved and to be submitted to

TC

CEA/CTU, as per their requirement. The objective of these studies is to verify the steady state requirement of reactive power under normal and contingent operating conditions for peak and light loads conditions in the network.

The studies shall have to be carried out for

- Peak Load
- Light Load
- Contingency Conditions

The load flow and dynamic file available with CTU shall be provided to the TSP in PSSE version 34 format. If data is not available typical data shall be assumed by TSP.

The studies should demonstrate that the STATCOM system meets all system and equipment specified performance criteria as per the specification. Engineering studies should include, but not be limited to, the studies described in subsequent subsections.

C.9.1 System dynamic performance studies

Dynamic performance studies should verify that the STATCOM system controls the system's dynamic performance during system disturbances. Dynamic performance studies include the following:

a. Studies verifying that the STATCOM provides adequate dynamic control to meet the system and STATCOM system performance criteria for the system conditions.

b. Study of response time and of the STATCOM system's behavior and contribution to the system's recovery from faults.

c. Studies to verify the operation of any supplementary controls designed to damp power oscillations following system disturbances.

d. Studies to evaluate the interaction of the STATCOM controls with the other nearby control systems, including high-voltage direct current (HVDC) controls, generator controls, and controls of other flexible AC transmission systems (FACTS) devices

In addition to the above, relevant studies shall include the cases stated as mentioned in Annexure-I

C.9.2 Harmonic performance

The studies should evaluate resultant maximum harmonic levels at the STATCOM system point of common coupling (PCC), and determine maximum stresses on all STATCOM system components. The study report should include the following:

a. Evaluation of specified system and operating conditions (refer to Clause 5) under all possible STATCOM operating conditions.

b. Evaluation within maximum ranges of STATCOM system component tolerances (worst performance values may not occur at detuning extremes).

c. Evaluation with maximum system voltage unbalance (refers to item 8 and item 9 in Table 3 of Clause 5).

d. Evaluation of the worst case resonance condition between STATCOM system and overall system.

e. Evaluation of possible resonant over voltages.

f. Transformer saturation induced harmonics for component rating calculation only.

g. Evaluation of impact considering single phase auto reclose deadtime.

C.9.3 Electromagnetic transients, control performance, and overvoltage studies

Transient overvoltage studies should be performed with the actual control modeled to verify that the STATCOM system equipment is adequately protected against over voltages and over currents (including excessive valve recovery voltages) from power system transients resulting from switching, fault clearing events, and credible STATCOM system maloperations. Evaluation shall include the following:

a. Study of start-up, including transformer energization, shutdown, switching coordination, and other local area network switching events

b. Study of STATCOM system protection and protection coordination

c. Faults on the high-voltage (HV) and MV bus (single line-to-ground, phase-to-phase, and three-phase)

d. Faults across the VSC, capacitors, and other equipment if used.

e. Control interaction

C.9.4 Insulation coordination study

Overall insulation coordination should be verified by considering the results of 8.4 (dynamic over voltages, and fault and switching transients), including the impacts of lightning surges on the STATCOM equipment. This study should determine and verify insulation levels, clearances, and arrester placement and ratings.

C.9.5 Other Studies

a) Grounding Study

b) Protection coordination

c) PLC/radio interference

d) Magnetic field strength

e) Other studies as applicable

C.9.6 Software simulation models

The TSP shall provide the latest following PSCAD and PSSE simulation model(s) and parameters to CEA/CTU/GRID-INDIA along with detailed documentation for the purpose of future simulation to adequately represent and model the proposed STATCOM system in the respective software:

a. **Stability model.** TSP should provide a detailed STATCOM system dynamics model for use in (PSCAD and PSSE) power flow and stability simulation software The model detail should be appropriate and complete for positive-sequence power system simulation and analysis that is typically performed with power flow and transient stability programs. All appropriate control features for such analysis will be modeled, and necessary documentation on the theory and use of model should be provided. Further, a generic model, benchmarked to detailed STATCOM stability model, shall also be furnished for distribution.

b. **Transient model.** TSP should provide a detailed STATCOM translents model for use in PSCAD. The model detail should be appropriate and complete for the transient response calculation of the STATCOM system. All appropriate control features for such analysis will be modeled, and necessary documentation on the theory and use of model should be provided. Further, a generic model, benchmarked to detailed STATCOM transient model, shall also be furnished for distribution.

PSS/E files may be used for developing RTDS files/ models. For simulation of STATCOM in PSS/E file (load flow and dynamic) and PSCAD (Transient) model for STATCOM is required for study. TSP will share STATCOM models with CEA, CTU and Grid-India along with detailed documentation for above study purposes and simulations. For PSS/E, both Generic and User-defined models shall be shared by the TSP with the CEA, CTU and Grid-India. Generic model **(PSS/E)** response shall be benchmarked with user-defined model **(PSS/E and PSCAD)** to the extent possible by the TSP. Generic models can be shared by the CEA, CTU and Grid-India with the concerned stakeholders/external party(ies) e. g. STUs etc. on need basis. For User Defined model, confidentiality shall be maintained by the CEA, CTU and Grid-India. For PSCAD, User Defined model shall be provided by the TSP for which confidentiality shall be maintained by the CEA, CTU and Grid-India.

Both UDM (PSCAD and PSS/E) and Generic model (PSSE) shall be provided by OEMs to CEA/CTU/GRID-INDIA without any NDA (Non-Disclosure Agreement)

C.9.7 Factory tests of controls

The integrated nature of the performance of the STATCOM in an electrical grid requires the following tests:

a. The TSP should perform factory simulator system tests for integrated control and protection system to ensure the proper operation of the same. The control system should be connected to a digital simulator with adequate representation of the electrical network for various conditions. The STATCOM system controller needs to be representative of control functions, including basic controllers but inclusive of supplementary controls, firing controls, and protective functions integrated into the controllers. TSP shall submit the Factory Acceptance Test (FAT) reports of STATCOM controls to CTU/RLDC.

b. The simulator should provide an accurate network representation including network harmonic behavior, as well as synchronous condensers, power stations, generators (with AVRs), and pump storage schemes, existing HVDC, SVCs and STATCOMs, future SVCs and STATCOMs, FSC (fixed series capacitors), and shunt reactor/Capacitors/filters.

STATCOM system control function type tests on a simulator should include the following:

- Verification of each control function.
- Verification of control linearity.
- Verification of control redundancy.
- Verification of the monitoring system.
- Verification of the protection system with reference to integrated protective functions included in the Controllers and firing controllers.
- Verification of overall system performance for minor and major system disturbances.
- Verification of processor loading of all digital controllers.
- Verification of STATCOM system parallel operation with other controls in the system and control Stability.
- Verification of control equipment performance for auxiliary power supply voltage (AC and DC) and frequency variations (AC).
- Routine production tests of all control functions, and separately of all protection functions.

C.10.0 VISUAL MONITORING SYSTEM FOR WATCH AND WARD OF STATCOM STATION

Visual monitoring system (VMS) for effective watch and ward of STACOM station premises covering the areas of entire switchyard, STATCOM building, Coupling Transformer, Cooling Towers and main gate, shall be provided. The TSP shall design, supply, erect, test and commission the complete system including cameras, Digital video recorder system, mounting arrangement for cameras, cables, LAN Switches, UPS and any other items/accessories required to complete the system.

Features of VMS system shall be as those specified for main substation. The number of cameras and their locations shall be decided in such a way that any location covered in the area can be scanned. The cameras shall be located in such a way to monitor at least:

a) Coupling Transformer, Mechanically Switched Reactors (MSR) (if any) and Mechanically Switched Capacitors (MSC) (if any), AC filter banks (if any).

b) STATCOM Valve Hall, Cooling System, Electrical and Mechanical Auxiliary area.

c) Entrance to STATCOM Station.

d) All other Major Equipment (such as CB, CT, VT, SA etc.)

The cameras can be mounted on structures, buildings or any other suitable mounting arrangement.

C.11.0 Spares, Special Tools and Tackles

Considering STATCOM as high technology proprietary equipment of the OEM, the TSP shall ensure necessary spares are procured to maintain the necessary reliability and availability of

STATCOM station. Further all necessary special tools and tackles required for erection, testing, commissioning, and maintenance of equipment shall also be taken.

Annexure-I

Contingency Cases for STATCOM

A) N-1 Contingency

Contingency at 765 kV level

1. Three Phase Fault close to 765 kV bus of Ananthapuram-II PS followed by tripping of one circuit of Ananthapuram-II PS – Cuddapah 765 kV D/c line (fault persisted for 100 ms)
2. Single Phase to Ground Fault close to 765 kV bus of Ananthapuram-II PS followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Ananthapuram-II PS – Cuddapah 765 kV D/c line
3. Three Phase Fault close to 765 kV bus of Ananthapuram-II PS followed by tripping of one circuit of Ananthapuram-II PS – Davanagere 765 kV D/c line (fault persisted for 100 ms)
4. Single Phase to Ground Fault close to 765 kV bus of Ananthapuram-II PS followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Ananthapuram-II PS – Davanagere 765 kV D/c line
5. Three Phase Fault close to 765 kV bus of Cuddapah S/s followed by tripping of one circuit of Chilakaluripeta – Cuddapah 765 kV D/c line (fault persisted for 100 ms)
6. Single Phase to Ground Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Chilakaluripeta – Cuddapah 765 kV D/c line
7. Three Phase Fault close to 765 kV bus of Cuddapah S/s followed by tripping of one circuit of Kurnool New – Cuddapah 765 kV D/c line (fault persisted for 100 ms)
8. Single Phase to Ground Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Kurnool New – Cuddapah 765 kV D/c line
9. Three Phase Fault close to 765 kV bus of Cuddapah S/s followed by tripping of one circuit of Cuddapah – Thiruvalam 765 kV D/c line (fault persisted for 100 ms)
10. Single Phase to Ground Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Cuddapah – Thiruvalam 765 kV D/c line
11. Three Phase Fault close to 765 kV bus of Davanagere PS followed by tripping of one circuit of Davanagere – Madhugiri 765 kV D/c line (fault persisted for 100 ms)
12. Single Phase to Ground Fault close to 765 kV bus of Davanagere PS followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Davanagere – Madhugiri 765 kV D/c line
13. Three Phase Fault close to 765 kV bus of Davanagere PS followed by tripping of one circuit of Davanagere – Narendra New 765 kV D/c line (fault persisted for 100 ms)
14. Single Phase to Ground Fault close to 765 kV bus of Davanagere PS followed by single pole opening (100 ms) of the faulted phase and unsuccessful re-closure (dead time 1 second) followed

by 3-pole opening (100 ms) of the faulted line i.e. tripping one circuit of Davanagere – Narendra New 765 kV D/c line

Contingency at 400 kV level

15. Three Phase Fault close to 400 kV bus of Ananthapuram-II PS followed by tripping of one 765/400kV ICT at Ananthapuram-II PS (fault persisted for 100 ms)
16. Three Phase Fault close to 400 kV bus of Ananthapuram-II PS followed by tripping of one 400/220kV ICT at Ananthapuram-II PS (fault persisted for 100 ms)
17. Three Phase Fault close to 400 kV bus of Ananthapuram-II PS followed by tripping of 1 GW generation at Ananthapuram-II PS (fault persisted for 100 ms) – Generation outage case

B) N-1-1 Contingency

Contingency at 765 kV level

18. Case 1 & 2 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Ananthapuram-II PS followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Ananthapuram-II PS – Cuddapah 765 kV D/c line) and successful re-closure (dead time 1 second)
19. Case 3 & 4 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Ananthapuram-II PS followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Ananthapuram-II PS – Davanagere 765 kV D/c line) and successful re-closure (dead time 1 second)
20. Case 5 & 6 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Chilakaluripeta – Cuddapah 765 kV D/c line) and successful re-closure (dead time 1 second)
21. Case 7 & 8 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Kurnool New – Cuddapah 765 kV D/c line) and successful re-closure (dead time 1 second)
22. Case 9 & 10 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Cuddapah S/s followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Cuddapah – Thiruvalam 765 kV D/c line) and successful re-closure (dead time 1 second)
23. Case 11 & 12 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Davanagere PS followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Davanagere – Madhugiri 765 kV D/c line) and successful re-closure (dead time 1 second)
24. Case 13 & 14 (consider as separate cases) + Single Phase Fault close to 765 kV bus of Davanagere PS followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Davanagere – Narendra New 765 kV D/c line) and successful re-closure (dead time 1 second)

SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION

The communication requirement shall be in accordance to CEA (Technical Standards for Communication System in Power System Operations) Regulations, 2020, CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022, CERC (Communication System for inter-State transmission of electricity) Regulations, 2017, CEA (Cyber Security in Power Sector) Guidelines, 2021, CERC Guidelines on "Interface Requirements" 2024 and all above documents as amended from time to time.

The communication services viz. SCADA, AGC (wherever applicable), VoIP, AMR and PMU have been identified as critical services and therefore shall be provisioned with 2+2 redundancy i.e. 2 channels for Main Control Centre and 2 channels for Backup Control Centre. In order to meet this requirement, suitable redundancy at port and card level need to be ensured by the TSP to avoid any single point of failure which may lead to interruption in real-time grid operation.

PMU to PDC communication (wherever required) shall be through 2 channels to the PDC (main) as there is no backup PDC at present.

Accordingly, all the hardware for communication services of station as stated above shall support dual redundancy for data transmission of station to respective main and backup RLDCs.

The complete ISTS communication system commissioned by TSP under the RFP shall be the asset of ISTS and shall be available for usage of ISTS requirements as suggested by CTU from time to time.

In order to meet the requirement for grid management and operation of substations, Transmission Service Provider (TSP) shall provide the following:

D.1.0 Establishment of 765/400/220 kV Ananthapuram-II PS

I. TSP shall supply, install and commission 2 no. FODP (192F or higher) and 1 no. FODP (96F or higher) along with panel and approach Cable (48F each) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control Room for all the incoming lines envisaged under the present scope.

II. TSP shall supply, install and commission One or more STM-16 (FOTE) equipment alongwith panel/s supporting minimum Ten (10) directions with MSP (Multiplex Section Protection – 1+1). These directions shall exclude protected (1+1) local patching among equipment (if any). TSP shall provide the Communication Equipment with necessary interfaces to meet the voice and data communication requirement between Ananthapuram-II PS and Davanagere PS, Ananthapuram-II PS and Cuddapah S/s. out of 10 directions, TSP shall provide Six (6)directions in the FOTE for 6 no. of upcoming RE Generators/ other entity (at 220 kV Bays), however required optical interfaces shall be provided by these RE Generators/ Other entities at the time of connectivity with Ananthapuram-II PS. The suitable DC Power Supply and backup to be provided for communication equipment.

III. FODP and FOTE equipment with panels shall be provided in Control Room of Ananthapuram-II PS. FOTE and FODP Equipment can be accommodated in same panel to optimize space.

IV. TSP shall supply, install and commission Firewall in redundant mode (1+1) in line with the specification attached at **Annexure F.1.**

V. The maintenance of all the communication equipment and software thereof including FOTE, FODP, PMU, approach cable, DCPS alongwith Battery Bank and Firewall shall be the responsibility of TSP.

D.2.0 Ananthapuram-II – Davangere 765 kV D/C line

I. On Ananthapuram-II – Davangere 765 kV D/C line, TSP shall supply, install and commission One (1) no. OPGW cable containing 48 Fibres (48F) on one E/W peak and conventional earth wire on other E/W peak. Proposed OPGW Hardware, Joint Box and other accessories shall be as per 48 Fiber OPGW.

II. The TSP shall install this OPGW from gantry of Ananthapuram-II S/s up to the gantry of Davangere S/s with all associated hardware including Vibration Dampers, mid-way and gantry Joint Boxes (called **OPGW Hardware** hereafter) and finally terminate in Joint Boxes at end Substations. The transmission line length is **150 kms (approx.),** where repeater may not be required to meet the link budget requirement of Ananthapuram-II – Davangere 765 kV D/C link.

III. Maintenance of OPGW Cable and OPGW Hardware shall be responsibility of TSP.

D.3.0 Ananthapuram-II – Cuddapah 765 kV D/C line

I. On Ananthapuram-II – Cuddapah 765 kV D/C line, TSP shall supply, install and commission One (1) no. OPGW cable containing 48 Fibres (48F) on one Earth Wire peak and conventional earth wire on other Earth Wire peak. Proposed OPGW Hardware, Joint Box and other accessories shall be as per 48 Fiber OPGW.

II. The TSP shall install this OPGW from gantry of Ananthapuram-II PS up to the gantry of Cuddapah S/s with all associated hardware including Vibration Dampers, mid-way and gantry Joint Boxes (called **OPGW Hardware** hereafter) and finally terminate in Joint Boxes at end Substations. The transmission line length is **200 kms (approx.),** where repeater may not be required to meet the link budget requirement of Ananthapuram-II – Cuddapah 765 kV D/C link,

III. Maintenance of OPGW Cable and OPGW Hardware shall be responsibility of TSP.

D.4.0 FOTE requirement at Davangere PS

I. TSP shall supply, install and commission 1 no. FODP (144F or higher) along with panel and required Approach Cable (48F) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control room.

II. TSP shall supply, install and commission One STM-16 (FOTE) equipment alongwith panel/s supporting minimum Three (3) directions with MSP (Multiplex Section Protection – 1+1) with necessary interfaces to meet the voice and data communication requirement between Davangere PS and Ananthapuram-II S/s and local patching with Control Room FOTE. The suitable DC Power Supply and backup to be provided for communication equipment.

III. FOTE/FODP panel shall be installed in the new Bay Kiosk (Switchyard Panel Room (SPR)). The FOTE under present scope shall be integrated by TSP with the existing FOTE at control room of **Davangere PS** which shall be communicating with respective control center. TSP to provide necessary FODP sub rack / Splice trays/ Patch cords etc. and optical interfaces/equipment in the existing FOTE/FODP panels in control room for integration with the existing FOTE for onwards data transmission.

In case spare optical direction is not available in the existing FOTE at the control room, the TSP shall coordinate with station owner to reconfigure the directions in existing FOTE at control room. Alternatively, The TSP may integrate the FOTE under the present scope with existing FOTE in the nearby Kiosk connected to the control room FOTE (if available with spare direction). For this purpose, TSP shall provide necessary FODP sub rack / Splice trays/ Patch cords etc. and suitable optical interfaces/ equipment in the existing FOTE/FODP panels in another Kiosk (SPR).

IV. FOTE and FODP can be accommodated in same panel to optimize space.

V. The maintenance of all the communication equipment and software thereof including FOTE, FODP, approach cable, PMU, DCPS alongwith Battery Bank shall be the responsibility of TSP.

D.5.0 FOTE requirement at Cuddapah (PG) S/s

I. TSP shall supply, install and commission 1 no. FODP (144F or higher) alongwith panel and required Approach Cable (48F) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control room.

II. TSP shall supply, install and commission One STM-16 (FOTE) equipment alongwith panel/s supporting minimum Three (3) directions with MSP (Multiplex Section Protection – 1+1) with necessary interfaces to meet the voice and data communication requirement between Cuddapah S/s and Ananthapuram-II S/s and local patching with Control Room FOTE. The suitable DC Power Supply and backup to be provided for communication equipment.

III. FOTE/FODP panel shall be installed in the new Bay Kiosk (Switchyard Panel Room (SPR)). The FOTE under present scope shall be integrated by TSP with the existing FOTE at control

room of **Cuddapah S/s** which shall be communicating with respective control center. TSP to provide necessary FODP sub rack / Splice trays/ Patch cords etc. and optical interfaces/equipment in the existing FOTE/FODP panels in control room for integration with the existing FOTE for onwards data transmission.

In case spare optical direction is not available in the existing FOTE at the control room, the TSP shall coordinate with station owner to reconfigure the directions in existing FOTE at control room. Alternatively, The TSP may integrate the FOTE under the present scope with existing FOTE in the nearby Kiosk connected to the control room FOTE (if available with spare direction). For this purpose, TSP shall provide necessary FODP sub rack / Splice trays/ Patch cords etc. and suitable optical interfaces/ equipment in the existing FOTE/FODP panels in another Kiosk (SPR).

IV. FOTE and FODP can be accommodated in same panel to optimize space.

V. The maintenance of all the communication equipment and software thereof including FOTE, FODP, approach cable, PMU, DCPS alongwith Battery Bank shall be the responsibility of TSP.

D.6.0 Specific Requirement for Phasor Measurement Units (PMUs)

TSP shall supply, install and commission required no. of Phasor Measurement Units (PMUs) at all the locations under the scope this RFP as per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 (alongwith all amendments if any) and all the applicable Regulations, Standards, Guidelines issued time to time. The signal list shall be as per the Annexure-I Part-B of **CERC Guidelines on "Interface Requirements" 2024**. PMUs also to be provided at **STATCOMs** locations. These PMUs shall be provided with GPS clock and LAN switch and shall connect with LAN switch of control room of respective substations/ generating stations with Fibre Optic cable. These PMUs shall be connected with the FOTE at Substation/ generating stations for onwards data transmission to the PDC (Phasor Data Concentrator) located at respective RLDC. Configuration work in existing PDC at RLDC for new PMU integration shall be done by respective RLDC, however all the necessary support in this regard shall be ensured by TSP. The maintenance of all the PMUs and associated equipment shall be the responsibility of TSP.

Note: Existing Station owner/s to provide necessary support to integrate different equipment and applications of new extended bays with the existing substation e.g. Communication (through FOTE), Voice etc. for smooth operation and monitoring of new added grid elements.

Proposed Communication for ***"Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW)"***

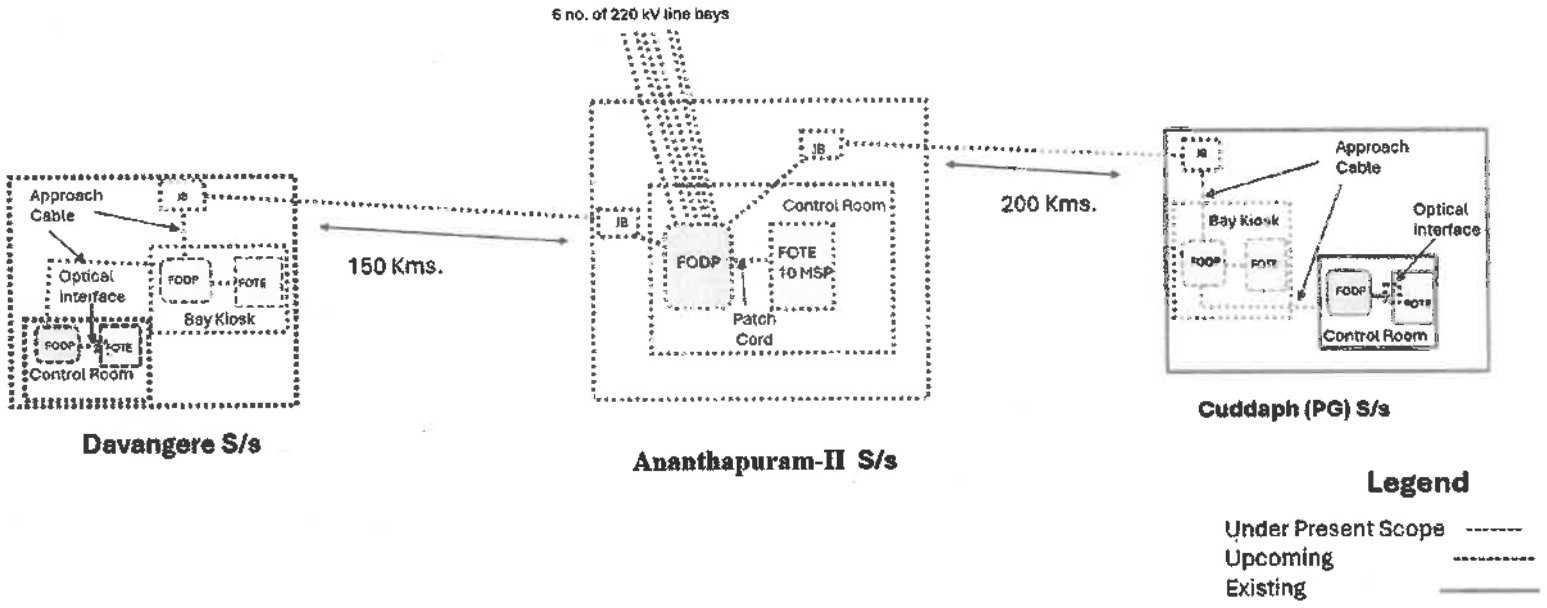


Figure F.1

Annexure-F.1

Next Generation Firewall (NGFW)

TSP shall provide 2 NGFW one in Main and another in Standby mode having electrical ethernet interfaces/ports and placed between FOTE and SAS gateway/s at the substation. All ethernet based applications shall be terminated in the firewall ports directly (e.g. PMU, AMR, VOIP, SAS/SCADA etc.). Each port of firewall shall work as a separate zone. Firewall shall be hardware based with features of Block/Allow/drop and IPSec VPN (network encryption).

The number of ports/interfaces in each firewall (i.e. Main and Standby) shall be minimum 16 Nos. TSP shall provide either single firewall or multiple firewalls to meet this interfaces requirement, each for main as well as standby firewall. Minimum throughput of firewall shall be 300 Mbps.

The Firewall shall be managed/ configured as standalone at present and shall also have compatibility to manage/configure through Centralized Management Console (CMC) remotely in future.

Firewall shall be tested and certified for ISO15408 Common Criteria for least EAL4+. Further, the OEM must certify that it conforms to Secure Product Development Life Cycle requirements as per IEC62443-4-1. The firewall shall generate reports for NERC-CIP Compliance.

The specifications for the firewalls are given at **Annexure-F.2** and schematic diagram showing firewall placement given at **Figure F.2.**

Annexure F.2

Specifications of Next Generation Firewall (NGFW)

1. NGFW shall have following features including but not limited to:
   Encryption through IPSec VPN (Virtual Private Network), Deep Packet Inspection (DPI), Denial of service (DoS) and Distributed Denial of Service (DDoS) prevention, Port Block/ Allow, rules/ policies for block/allow, IP (Internet Protocol) and Media Access Control (MAC) spoofing protection, threat detection, Intrusion Prevention System (IPS), Anti-Virus, Anti-Spyware, Man In The Middle (MITM) attack prevention.
2. The proposed firewall shall be able to handle (alert, block or allow) unknown /unidentified applications e.g. unknown TCP and UDP packets. It shall have the provision to define application control list based on application group and/or list.
3. Firewall shall have feature and also have capability to update the definition/ Signatures of Anti-Virus online as well as offline. Firewall shall also be compatible to update the definitions/signatures through CMC. There shall be a defined process for security patching and firmware up-gradation. There shall be a feature to field validate firmware checksum. The same shall also be validated before using the OEM provided file/binary in the process of firmware up-gradation and security patching
4. Firewall shall have Management Console port to configure remotely.
5. Firewall shall be EMI/EMC compliant in Substation environment as per IEC 61850-3.
6. Firewall shall be rack mounted in existing standard equipment cabinets.
7. Firewall shall have support of SCADA applications (IEC-60870-5-104), ICCP, PMU (IEEE C37.118), Sub-Station Automation System (IEC 61850), Ethernet and other substation environment protocols.
8. Client based Encryption/ VPN must support different Operating System platforms e.g. Windows, Linux and Mac.
9. The solution must have content and comprehensive file detection policies, blocking the files as function of their types, protocols and directions.
10. Firewall shall have logging facility as per standard logs/events format. Firewall shall have features to export the generated/stored logs/events in csv (Comma Separated Value) and also any other standard formats for offline usage, analysis and compliance. Firewall shall have suitable memory architecture and solution to store and be enable to export all logs/events for a period of last 90 days at any given time.

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11. Firewall shall have features and be compatible with local as well as central authentication system (RADIUS, LDAP, or TACACS+) for user account and access right management. It shall also have Role Based User management feature.
12. Firewall shall have the capability to configure sufficient number of VLANs.
13. Firewall shall have the capability to support sufficient number of sessions.
14. Firewall shall have provision to configure multiple IP Sec VPNs, at least 100 Nos., (one-to-many or many-to-one). Shall support redundant operation with a similar router after creation of all the IP Sec VPN. IPSec VPN shall support encryption protocols as AES128, AES256 and hashing algorithms as MD5 and SHA1. IPSec VPN throughput shall support at least 300 Mbps
15. Firewall shall be capable of SNMP v3 for monitoring from Network Management system. It shall also have SNMPv3 encrypted authentication and access security
16. Firewall shall support in Active/Passive or Active-Active mode with High Availability features like load balancing, failover for firewall and IPsec VPN without losing the session connectivity.
17. Firewall should have integrated traffic shaping (bandwidth, allocation, prioritisation, etc.) functionality
18. Shall support simultaneous operation with both IPv4 and IPv6 traffic
19. Firewall shall be compatible with SNTP/NTP or any other standards for clock synchronization
20. Firewall shall have the features of port as well as MAC based security
21. Firewall shall support exporting of logs to a centralized log management system (e.g. syslog) for security event and information management.
22. Firewall time shall be kept synchronised to official Indian Timekeeping agency, time.nplindia.org.
23. Firewall product shall be provided with all applicable updates at least until 36 months since the applicable date of product shipping to the concerned utility.

Firewall Placement Diagram

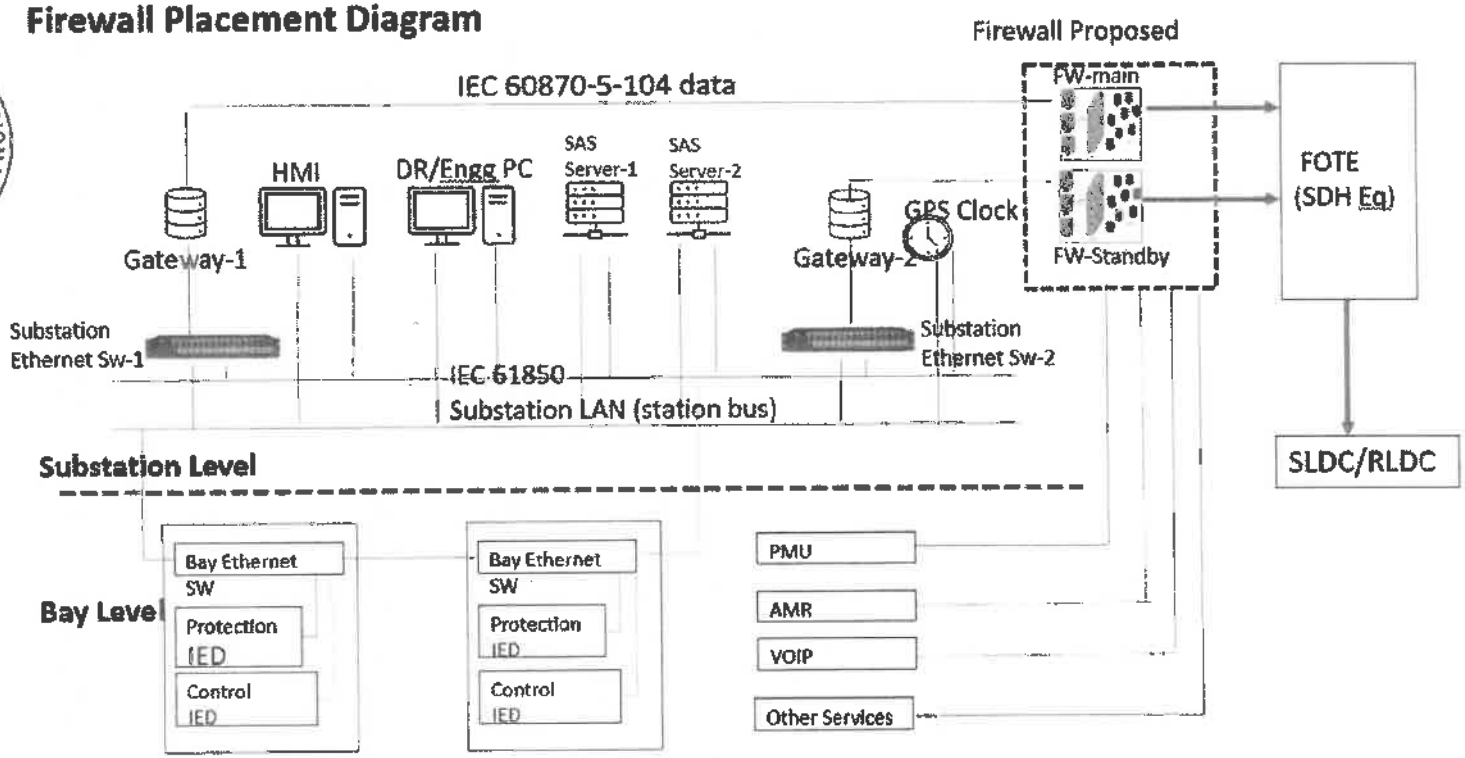

Figure F.2

D.7.0 PLCC and PABX:

Power line carrier communication (PLCC) equipment complete for speech, tele-protection commands and data channels shall be provided on each transmission line. The PLCC equipment shall in brief include the following: -

(i) Coupling device, Coupling filters, line traps, carrier terminals, protection couplers, HF cables, PABX (if applicable) and maintenance and testing instruments.

(ii) At new substation, a telephone exchange (PABX) of 24 lines shall be provided at as means of effective communication among various buildings of the substation, remote end substations and with control centres (RLDC/SLDC) etc.

(iii) Coupling devices shall be suitable for phase-to-phase coupling for 400kV Transmission lines. The pass band of coupling devices shall have sufficient margin for adding communication channel in future if required. Necessary protection devices for safety of personnel and low voltage part against power frequency voltages and transient over voltage shall also be provided.

(iv) The line traps shall be broad band tuned suitable for blocking the complete range of carrier frequencies. Line Trap shall have necessary protective devices such as lightning arresters for the protection of tuning device. Decoupling network consisting of line traps and coupling capacitors may also be required at certain substation in case of extreme frequency congestion.

(v) The carrier terminals shall be of single side-band (SSB) amplitude modulation (AM) type and shall have 4 kHz band width. PLCC Carrier terminals and Protection couplers shall be considered for both ends of the line.

(vi) PLCC equipment for all the transmission lines covered under the scheme shall be provided by TSP. PLCC to be provided for following lines under present scope:

Sl. No	Line name	PLCC configuration
1	Ananthapuram-II – Davangere 765 kV D/C line	1 set Analog PLCC + 1 set Digital Protection Coupler for each circuit at both ends.
2	Ananthapuram-II – Cuddapah 765 kV D/C line	1 set Analog PLCC + 1 set Digital Protection Coupler for each circuit at both ends.

Further, CVT and Wave trap for all 765kVand220kV line bays under present scope shall be provided by TSP.

(vii) All other associated equipment like cabling, coupling device and HF cable shall also be provided by the TSP.

(viii) Two (2) sets of 48 V battery banks for PLCC and communication equipment shall be provided at each new Substation with at least 10-hour battery backup and extended backup, if required.

Annexure – E

SPECIFIC TECHNICAL REQUIREMENTS FOR INTEGRATION OF COMMUNICATION EQUIPMENT WITH REGIONAL LEVEL NMS / REGIONAL UNMS:

The new communication equipment/ system for all the substations under the present scope shall be compatible for integration with existing regional level NMS system/ Centralized Supervision and Monitoring System (CSMS) i.e. Regional UNMS. The local configuration of the new communication equipment at the station end shall be the responsibility of TSP as per **Annexure E.1**. The configuration work in the existing centralized NMS/ CSMS at Control center end, for integration of new Communication equipment/ system shall be done by Regional ULDC Team/ NMT, however all the necessary support in this regard shall be ensured by TSP.

Annexure E.1

Requirement for integration of Communication Equipment with Regional UNMS:

1. TSP shall ensure that NMS/EMS/NE supplied by them is NBI compliant and all FCAPS functionality is supported in the NBI such as NE Inventory, Hardware Inventory – Shelf/Slot/Card/SFP/Port, Topology, Protections, Alarms, Performance- real time and periodic, Performance KPI parameters (E-1, STM, Ethernet) , Remote Configuration, Cross Connects, Trails and Circuits, Services Provisioning (NE), E-1 , STM, Ethernet , TX and RS Trace, loop back and details are published in the NBI guide for the configuration parameters.

2. TSP shall be obliged to provide/share all necessary documentations such as NBI Guide/MIB/IDL/WSDL/API files/ etc. for onward integration of their NMS/EMS/NE with regional UNMS.

3. The following support shall be provided by TSP for integration of their supplied equipment with regional UNMS:

   - Enabling and activating NBI license in their EMS/NMS and providing NBI login access along with User credentials
   - Assist in verifying NBI Connectivity with UNMS vendor for the successful communication and retrieval of data.
   - Assist in troubleshooting (if required) for NBI connectivity along with UNMS vendor for the communication and retrieval of data.

4. For standalone NE which is not integrated with any EMS/NMS, TSP shall provide modality of complete FCAPS data acquisition as above through industry standard programmatic methods and provide the CLI command manual.

Schedule: 2

Scheduled COD

[Note: As referred to in the definition of "Element", "Scheduled COD", and in Articles 3.1.3 (c), 4.1 (b) and 4.3 (a) of this Agreement]

S. No.	Name of the Transmission Element	Scheduled COD as per Gazette Notification	% of Quoted Transmission Charges recoverable on Scheduled COD of the Element of the Project	Element(s) which are pre-required for declaring the commercial operation (COD) of the respective Element
1.	Establishment of 4x1500 MVA, 765/400 and 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level	24 Months (31.03.2027)	100%	Element at Sl. No. 2, 3 and 4
2.	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			Element at Sl. No. 1, 3 and 4
3.	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			Element at Sl. No. 1, 2 and 4
4.	± 300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR			Element at Sl. No. 1, 2 and 3

Schedule: 3

Safety Rules and Procedures

[Note: As referred to in Articles 5.6 of this Agreement]

1. **Site Regulations and Safety:**

   The TSP shall establish Site regulations within sixty (60) days from fulfilment of conditions subsequent, as per Prudent Utility Practices setting out the rules to be observed till expiry of the Agreement at the Site and shall comply therewith.

   Such Site regulations shall include, but shall not be limited to, rules in respect of security, safety of the Project, gate control, sanitation, medical care, and fire prevention, public health, environment protection, security of public life, etc.

   Copies of such Site regulations shall be provided to the Nodal Agency and the CEA for the purpose of monitoring of the Project.

2. **Emergency Work:**

   In cases of any emergency, the TSP shall carry out all necessary remedial work as may be necessary.

   If the work done or caused to be done by any entity, other than the TSP, the TSP shall, reimburse the actual costs incurred, to the other Party carrying out such remedial works.

3. **Site Clearance:**

   In the course of execution of the Agreement, the TSP shall keep the Site reasonably free from all unnecessary obstruction, storage, remove any surplus materials, clear away any wreckage, rubbish and temporary works from the Site, and remove any equipment no longer required for execution of the Agreement. After completion of all Elements of the Project, the TSP shall clear away and remove all wreckage, rubbish and debris of any kind from the Site, and shall leave the Site clean and safe.

4. **Watching and Lighting:**

   The TSP shall provide and maintain at its own expense all lighting, fencing, and watching when and where necessary for the proper construction, operation, maintenance / repair of any of the Elements of the Project, or for the safety of the owners and occupiers of adjacent property and for the safety of the public, during such maintenance / repair.

Schedule: 4

Computation of Transmission Charges

1.1 General

The Monthly Transmission Charges to be paid to the TSP for providing Transmission Service for any Contract Year during the term of the Agreement shall be computed in accordance with this Schedule and paid as per Sharing Regulations.

Illustration regarding payment of Transmission Charges under various scenarios (considering definitions of Contract Year, Expiry Date & Monthly Transmission Charges above) is as below: -

Illustration-1: In case the Project Elements achieve COD as per Schedule

Quoted Transmission Charges: **Rs. 140 Million**

Completion Schedule:

Element No.	Completion Schedule in Months	Scheduled CoD of the Element	Actual CoD of the Element	% Charges recoverable on Scheduled CoD of the Element
Element 1	28	1-Feb-2018	1-Feb-2018	25%
Element 2	38	1-Dec-2018	1-Dec-2018	75%

Tariff Payable as follows:

Transmission Charges for Element 1			Transmission Charges for Element 2		
1-Feb-18 to 31-Mar-18	140 X 25% X ((28+31)/365)	5.65		--	0.00
1-Apr-18 to 30-Nov-18	140 X 25% X (244/365)	23.39		--	0.00
1-Dec-18 to 31-Mar-19	140 X 100% X (121/365)				46.41
2	140 X 100% X 1				140
3	140 X 100% X 1				140
4	140 X 100% X 1				140
5	140 X 100% X 1				140
.....					
.....					
36 (1-Apr to 30-Nov)	140 X 100% X (244/365)				93.59

Illustration-2: In case of extension of Scheduled COD as per Article 4.4.1 & 4.4.2 of this Agreement

Quoted Transmission Charges: **Rs. 140 Million**

Completion Schedule:

Element No.	Completion Schedule in Months	Scheduled CoD of the Element	Actual CoD of the Element	% Charges recoverable on Scheduled CoD of the Element
Element 1	20	1-Feb-2018	1-Jul-2018	25%
Element 2	28	1-Oct-2018	1-Dec-2018	75%

Tariff Payable as follows:

Transmission Charges for Element 1			**Transmission Charges for Element 2**		
1-Feb-18 to 31-Mar-18	--	0.00		--	0.00
1-Apr-18 to 30-Jun-18	--	0.00		--	0.00
1-Jul-18 to 30-Nov-18	140 X 25% X (153/365)	14.67		--	0.00
1-Dec-18 to 31-Mar-19	140 X 100% X (121/365)				46.41
2	140 X 100% X 1				140
3	140 X 100% X 1				140
4	140 X 100% X 1				140
5	140 X 100% X 1				140
.....					
.....					
36 (1-Apr to 30-Nov)	140 X 100% X (244/365)				93.59

Illustration-3: In case of delay in achieving COD of Project & all individual Elements (COD of the Project achieved in Contract Year 1)

Quoted Transmission Charges: **Rs. 140 Million**

Completion Schedule:

Element No.	Completion Schedule in Months	Scheduled CoD of the Element	Actual CoD of the Element	% Charges recoverable on Scheduled CoD of the Element
Element 1	20	1-Feb-2018	1-Dec-2018	25%
Element 2	28	1-Oct-2018	1-Dec-2018	75%

Tariff Payable as follows:

Transmission Charges for Element 1			**Transmission Charges for Element 2**		
1-Feb-18 to 31-Mar-18	--	0.00		--	0.00
1-Apr-18 to 30-Sept-18	--	0.00		--	0.00
1-Oct-18 to 30-Nov-18	--	0.00	1-Oct-18 to 30-Nov-18	--	0.00
1-Dec-18 to 31-Mar-19	140 X 100% X (121/365)				46.41
2	140 X 100% X 1				140
3	140 X 100% X 1				140
4	140 X 100% X 1				140
5	140 X 100% X 1				140
.....					
.....					
36 (1-Apr to 30-Nov)	140 X 100% X (244/365)				93.59

Illustration-4: In case of delay in achieving COD of Project & all individual Elements (COD of the Project achieved in Contract Year other than Contact Year 1)

Quoted Transmission Charges: **Rs. 140 Million**

Completion Schedule:

Element No.	Completion Schedule in Months	Scheduled CoD of the Element	Actual CoD of the Element	% Charges recoverable on Scheduled CoD of the Element
Element 1	38	1-Oct-2019	1-May-2020	25%
Element 2	38	1-Oct-2019	1-May-2020	75%

Tariff Payment to be paid as:

Transmission Charges for Element 1			**Transmission Charges for Element 2**		
1-Oct-19 to 31-Mar-20	--	0.00	1-Oct-19 to 31-Mar-20	--	0.00
1-Apr-20 to 30-Apr-20	-	0.00	1-Apr-20 to 30-Apr-20	-	0.00
1-May-20 to 31-Mar-21	140 X 100% X (335/365)				128.49
2	140 X 100% X 1				140
3	140 X 100% X 1				140
4	140 X 100% X 1				140
5	140 X 100% X 1				140
.....					
.....					
36 (1-Apr to 30-Apr)	140 X 100% X (30/ 365)				11.51

Illustration5: In case of delay in achieving COD of Element but Project COD achieved on time

Quoted Transmission Charges: **Rs. 140 Million**

Completion Schedule:

Element No.	Completion Schedule in Months	Scheduled CoD of the Element	Actual CoD of the Element	% Charges recoverable on Scheduled CoD of the Element
Element 1	20	1-Feb-2018	1-Jul-2018	25%
Element 2	30	1-Dec-2018	1-Dec-2018	75%

Tariff Payable as follows:

Transmission Charges for Element 1			Transmission Charges for Element 2		
1-Feb-18 to 31-Mar-18	--	0.00		--	0.00
1-Apr-18 to 30-Jun-18	--	0.00		--	0.00
1-Jul-18 to 30-Nov-18	140 X 25% X (153/365)	14.67		--	0.00
1-Dec-18 to 31-Mar-19	140 X 100% X (121/365)				46.41
2	140 X 100% X 1				140
3	140 X 100% X 1				140
4	140 X 100% X 1				140
5	140 X 100% X 1				140
.....					
.....					
36 (1-Apr to 30-Nov)	140 X 100% X (244/365)				93.59

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Illustration-6: In case of early commissioning of Project

Quoted Transmission Charges: **Rs. 140 Million**

Completion Schedule:

Element No.	Completion Schedule in Months	Scheduled CoD of the Element	Actual CoD of the Element	% Charges recoverable on Scheduled CoD of the Element
Element 1	38	1-Oct-2019	1-Jul-2019	25%
Element 2	38	1-Oct-2019	1-Jul-2019	75%

Tariff Payment to be paid as:

	Transmission Charges for Element 1	**Transmission Charges for Element 2**
1-July-19 to 31-Mar-20	140 X 100% X (274/365)	105.09
2	140 X 100% X 1	140
3	140 X 100% X 1	140
4	140 X 100% X 1	140
5	140 X 100% X 1	140
.....		
.....		
36 (1-Apr to 30-Jun)	140 X 100% X (91/365)	34.91

Illustration-7: In case of early commissioning of an element

Quoted Transmission Charges: **Rs. 140 Million**
Completion Schedule:

Element No.	Completion Schedule in Months	Scheduled CoD of the Element	Actual CoD of the Element	% Charges recoverable on Scheduled CoD of the Element
Element 1	38	1-Oct-2019	1-Apr-2019	25%
Element 2	38	1-Jul-2019	1-Jul-2019	75%

Tariff Payment to be paid as:

Transmission Charges for Element 1			**Transmission Charges for Element 2**		
1-Apr-2019 to 30-Jun-19	140 X 25% X (91/365)	8.72	1-Apr-2019 to 30-Jun-19	--	0.00
1-July-19 to 31-Mar-20	140 X 100% X (274/ 365)				105.09
2	140 X 100% X 1				140
3	140 X 100% X 1				140
4	140 X 100% X 1				140
5	140 X 100% X 1				140
.....					
.....					
36 (1-Apr-30-Jun)	140 X 100% X (91/365)				34.91

The Transmission Charges shall be payable on monthly basis as computed above.

1.2 Computation of Monthly Transmission Charges

The Monthly Transmission Charges for any month m in a Contract Year n shall be calculated as below:

For AC System:

a. If Actual Transmission System Availability for the month m of contract year n is greater than or equal to 98% and less than or equal to 98.5%;

Monthly Transmission Charges MTC(m) = Tmn *1

a. If Actual Transmission System Availability for the month m of contract year n exceeds 98.5% and less than or equal to 99.75%;

Monthly Transmission Charges MTC(m) = Tmn * (AA/ 98.5%)

c. If Actual Transmission System Availability for the month m of contract year n is greater than 99.75%;

Monthly Transmission Charges MTC(m) = Tmn * (99.75% / 98.5%)

d. If Actual Transmission System Availability for the month m of contract year n is less than 98%and greater than or equal to 95.00%;

Monthly Transmission Charges MTC(m) = Tmn * (AA/ 98%)

e. If Actual Transmission System Availability for the month m of contract year falls below 95%;

Monthly Transmission Charges MTC(m) = Tmn * (AA/ 98%) - 0.02 * (Tmn * (AA/ 95%)

For DC System:

a. If Actual Transmission System Availability for the month m of contract year n is greater than or equal to 95% and less than or equal to 96%;

Monthly Transmission Charges MTC(m) = Tmn *1

b. If Actual Transmission System Availability for the month m of contract year n exceeds 96% and less than or equal to 99.75%;

Monthly Transmission Charges MTC(m) = Tmn * (AA/ 96%)

c. If Actual Transmission System Availability for the month m of contract year n is greater than 99.75%;

Monthly Transmission Charges MTC(m) = Tmn * (99.75% / 96%)

d. If Actual Transmission System Availability for the month m of contract year n is less than 95% and greater than or equal to 92.00%;

Monthly Transmission Charges MTC(m) = Tmn * (AA/ 95%)

e. If Actual Transmission System Availability for the month m of contract year falls below 92%;

Monthly Transmission Charges MTC(m) = Tmn * (AA/ 95%) - 0.02 * (Tmn * (AA/ 92%)

where:

- AA is the actual Availability, as certified by RPC, as per procedure provided in Schedule 6.
- m is the month in Contract Year 'n'
- Tmn= Transmission Charges for the month 'm' in Contract Year 'n' = (=Transmission Charge/ no. of days in the Year n)* no. of days in month m

Provided, no Transmission Charges shall be paid during the period for which the RLDC has not allowed the operation of the Element/Project due to the failure of the TSP to operate it as per the provisions of the Grid Code.

1.3 RLDC Fee & Charges

The payment of RLDC fee & charges, in accordance with relevant regulations of CERC, shall be the responsibility of the TSP.

Schedule: 5

Quoted Transmission Charges

[Quoted Transmission Charges from Annexure - 21 of the RFP of the Selected Bidder to be inserted here]

[To be incorporated from the Bid of the Selected Bidder submitted during the e-reverse auction after its selection]

Quoted Annual Transmission Charges: Rs. 4486.42 Million

Proportionate Transmission Charges payable for each Element of the Project:

S. No.	Name of the Transmission Element	Scheduled COD as per Gazette Notification	% of Quoted Transmission Charges recoverable on Scheduled COD of the Element of the Project	Element(s) which are pre-required for declaring the commercial operation (COD) of the respective Element
1.	Establishment of 4x1500 MVA, 765/400 and 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station near Kurnool, Andhra Pradesh along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-II PS with provision of two (2) sections of 4500 MVA each at 400 kV level	24 Months (31.03.2027)	100%	Element at Sl. No. 2, 3 and 4
2.	Ananthapuram-II – Davangere 765 kV D/C line with 240 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			Element at Sl. No. 1, 3 and 4
3.	Ananthapuram-II – Cuddapah 765 kV D/C line with 330 MVAr SLR (convertible) at Ananthapuram-II end on both circuits			Element at Sl. No. 1, 2 and 4

4.	± 300 MVAr STATCOM at Ananthapuram-II PS along with 2x125 MVAr MSR			Element at Sl. No. 1, 2 and 3

Schedule: 6

Appendix –IV to Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024

Procedure for Calculation of Transmission System Availability Factor for a Month

1. Transmission system availability factor for nth calendar month ("TAFPn") shall be calculated by the respective transmission licensee, verified by the concerned Regional Load Dispatch Centre (RLDC) and certified by the Member-Secretary, Regional Power Committee of the region concerned, separately for each AC and HVDC transmission system and grouped according to sharing of transmission charges. In the case of the AC system, transmission System Availability shall be calculated separately for each Regional Transmission System and inter-regional transmission system. In the case of the HVDC system, transmission System Availability shall be calculated on a consolidated basis for all inter-state HVDC systems.

2. Transmission system availability factor for nth calendar month ("TAFPn") shall be calculated by considering the following:

   i) **AC transmission lines**: Each circuit of AC transmission line shall be considered as one element;

   ii) **Inter-Connecting Transformers (ICTs):** Each ICT bank (three single- phase transformers together) shall form one element;

   iii) **Static VAR Compensator (SVC):** SVC, along with SVC transformer, shall form one element;

   iv) **Bus Reactors or Switchable line reactors:** Each Bus Reactors or Switchable line reactors shall be considered as one element;

   v) **HVDC Bi-pole links:** Each pole of the HVDC link, along with associated equipment at both ends, shall be considered as one element;

   vi) **HVDC back-to-back station:** Each block of the HVDC back-to-back station shall be considered as one element. If the associated AC line (necessary for the transfer of inter-regional power through the HVDC back-to-back station) is not available, the HVDC back-to-back station block shall also be considered unavailable;

   vii) **Static Synchronous Compensation ("STATCOM"):** Each STATCOM shall be considered as a separate element.

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3. The Availability of the AC and HVDC portion of the Transmission system shall be calculated by considering each category of transmission elements as under:

TAFPn (in %) for AC system:

$$= \frac{(o \times AVo)+(p \times AVp) + (q \times AVq) + (r \times AVr)+(u \times AVu)}{(o + p + q + r+u)} \times 100$$

Where,

o	=	Total number of AC lines.
AVo	=	Availability of o number of AC lines
p	=	Total number of bus reactors/switchable line reactors
AVp	=	Availability of p number of bus reactors/switchable line reactors
q1	=	Total number of ICTs
AVq	=	Availability of q number of ICTs
r	=	Total number of SVCs
AVr	=	Availability of r number of SVCs
u	=	Total number of STATCOM
AVu	=	Availability of u number of STATCOM

TAFMn (in %) for HVDC System:

$$= \frac{\sum_{x=1}^{s} Cxbp\,(act) \times AVxbp + \sum_{y=1}^{t} Cy\,(act)btb \times AVybtb}{\sum_{x=1}^{s} Cxbp + \sum_{y=1}^{t} Cy\,btb} \times 100$$

Where

Cxbp(act)	=	Total actual operated capacity of xth HVDC pole
Cxbp	=	Total rated capacity of xth HVDC pole
AVxbp	=	Availability of xth HVDC pole
Cybtb(act)	=	Total actual operated capacity of yth HVDC back-to-back station block
Cybtb	=	Total rated capacity of yth HVDC back-to-back station block
AVybtb	=	Availability of yth HVDC back-to-back station block
s	=	Total no of HVDC poles
t	=	Total no of HVDC Back to Back blocks

4. The availability for each category of transmission elements shall be calculated based on the weightage factor, total hours under consideration and non-available hours for each element of that category. The formulae for calculation of the Availability of each category of the transmission elements are as per **Appendix-V**. The weightage factor for each category of transmission elements shall be considered as under:

   (a) For each circuit of the AC line – The number of sub-conductors in the line multiplied by ckt-km;

   (b) For each HVDC pole- The rated MW capacity x ckt-km;

   (c) For each ICT bank – The rated MVA capacity;

   (d) For SVC- The rated MVAR capacity (inductive and capacitive);

   (e) For Bus Reactor/switchable line reactors – The rated MVAR capacity;

   (f) For HVDC back-to-back stations connecting two Regional grids- Rated MW capacity of each block; and

   (g) For STATCOM – Total rated MVAR Capacity.

5. The transmission elements under outage due to the following reasons shall be deemed to be available:

   i. Shut down availed for maintenance of another transmission scheme or construction of new element or renovation/upgradation/additional capitalization in an existing system approved by the Commission. If the other transmission scheme belongs to the transmission licensee, the Member Secretary, RPC may restrict the deemed availability period to that considered reasonable by him for the work involved. In case of a dispute regarding deemed availability, the matter may be referred to the Chairperson, CEA, within 30 days.

   ii. Switching off of a transmission line to restrict over-voltage and manual tripping of switched reactors as per the directions of the concerned RLDC.

   iii. Shut down of a transmission line due to the Project(s) of NHAI, Railways and Border Road Organization, including for shifting or modification of such transmission line or any other infrastructure project approved by Ministry of Power. Member Secretary, RPC may restrict the deemed availability period to that considered reasonable by him for the work involved; Provided that apart from the deemed availability, any other costs involved in the process of such shutdown of transmission line shall not be borne by the DICs.

   Provided that such deemed availability shall be considered only for the period for which DICs are not affected by the shutdown of such transmission line.

6. For the following contingencies, the outage period of transmission elements, as certified by the Member Secretary, RPC, shall be excluded from the total time of the element under the period of consideration for the following contingencies:

   i) Outage of elements due to force majeure events beyond the control of the transmission licensee. However, whether the same outage is due to force majeure (not design failure) will be verified by the Member Secretary, RPC. A reasonable restoration time for the element shall be considered by the Member Secretary, RPC, and any additional time taken by the transmission licensee for restoration of the element beyond the reasonable time shall be treated as outage time attributable to the transmission licensee. Member Secretary, RPC may consult the transmission licensee or any expert for estimation of reasonable restoration time. Circuits restored through ERS (Emergency Restoration System) shall be considered as available;

   ii) Outage caused by grid incident/disturbance not attributable to the transmission licensee, e.g. faults in a substation or bays owned by another agency causing an outage of the transmission licensee's elements, and tripping of lines, ICTs, HVDC, etc., due to grid disturbance. However, if the element is not restored on receipt of direction from RLDC while normalizing the system following grid incident/disturbance within reasonable time, the element will be considered not available for the period of outage after issuance of RLDC's direction for restoration;

   iii) The outage period which can be excluded for the purpose of sub-clause (i) and (ii) of this clause shall be declared as under:

      a. Maximum up to one month by the Member Secretary, RPC;

      b. Beyond one month and up to three months after the decision at RPC;

      c. Beyond three months by the Commission for which the transmission license shall approach the Commission along with reasons and steps taken to mitigate the outage and restoration timeline.

7. Time frame for certification of transmission system availability: (1) The following schedule shall be followed for certification of availability by the Member Secretary of the concerned RPC:

- Submission of outage data along with documentary proof (if any) and TAFPn calculation by Transmission Licensees to RLDC/ constituents
  – By the 5th of the following month;
- Review of the outage data by RLDC / constituents and forward the same to respective

RPC – by 20th of the month;

- Issue of availability certificate by respective RPC – by the 3rd of the next month.

Appendix-V

FORMULAE FOR CALCULATION OF AVAILABILITY OF EACH CATEGORY OF TRANSMISSION ELEMENTS

For AC transmission system

AVo(Availability of o no. of AC lines) = $\frac{\sum_{i=1}^{o} Wi(Ti - TNAi)/Ti}{\sum_{i=1}^{o} Wi}$

AVq(Availability of q no. of ICTs) = $\frac{\sum_{k=1}^{q} Wk(Tk - TNAk)/Tk}{\sum_{k=1}^{q} Wk}$

AVr(Availability of r no. of SVCs) = $\frac{\sum_{l=1}^{r=1} Wl(Tl - TNAl)/Tl}{\sum_{l=1}^{r} Wl}$

AVp(Availability of p no. of Switched Bus reactors) = $\frac{\sum_{m=1}^{p} Wm(Tm - TNAm)/Tm}{\sum_{m=1}^{p} Wm}$

AVu(Availability of u no. of STATCOMs) = $\frac{\sum_{n=1}^{u} Wn(Tn - TNAn)/Tn}{\sum_{n=1}^{u} Wn}$

AV_{xbp}(Availability of an individual HVDC pole) = $\frac{(Tx - TN)}{Tx}$

AV_{ybb} (Availability of an individual HVDC Back-to-back Blocks) = $\frac{(Ty - TNAy)}{Ty}$

For the HVDC transmission system

For the new HVDC commissioned but not completed twelve months;

For first 12 months: [(AV_{xbp} or AV_{ybtb})x95%/85%], subject to a ceiling of 95%.

Where,

o	=	Total number of AC lines;
AVo	=	Availability of o number of AC lines;
p	=	Total number of bus reactors/switchable line reactors;
AVp	=	Availability of p number of bus reactors/switchable line reactors;
q	=	Total number of ICTs;
AVq	=	Availability of q number of ICTs;
r	=	Total number of SVCs;
AVr	=	Availability of r number of SVCs;.
U	=	Total number of STATCOM;
AVu	=	Availability of u number of STATCOMs;
Wi	=	Weightage factor for *i*th transmission line;
Wk	=	Weightage factor for *k*th ICT;
Wl	=	Weightage factors for inductive & capacitive operation of *l*th SVC;
Wm	=	Weightage factor for mth bus reactor;
Wn	=	Weightage factor for nth STATCOM.
Ti, , Tk, Tl, .		The total hours of ith AC line, k^{th} ICT, l^{th} SVC. m^{th} Switched Bus Reactor
Tm, Tn, Tx, Ty		& n^{th} STATCOM, x^{th} HVDC pole, y^{th} HVDC back-to-back blocks during the period under consideration (excluding time period for outages not attributed to transmission licensee for the reasons given in Para 5 of the procedure)
T_{NAI} ,T_{NAk} T_{NAI}, T_{NAm},		The non-availability hours (excluding the time period for outages not attributable to transmission licensee taken as deemed availability as T_{NAn}, T_{NAx}, T_{NAy} per Para 5 of the procedure) for i^{th} AC line, k^{th} ICT, l^{th} SVC , m^{th} Switched Bus Reactor, n^{th} STATCOM. x^{th} HVDC pole and y^{th}HVDC back-to-back block.

Schedule: 7

Entire Bid (both financial bid and technical bid) of the Selected Bidder to be attached here

Bid dated 31.01.2025 and 14.02.2025 shall be an integral part of this agreement.

Schedule: 8

Contract Performance Guarantee

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution. Foreign entities submitting Bids are required to follow the applicable law in their country.)

In consideration of the ANANTAPUR II REZ TRANSMISSION LIMITED , Urjanidhi, First Floor, Barakhamba Lane- 1, Connaught Place, New Delhi, Central Delhi- 110001, Delhi agreeing to undertake the obligations under the Transmission Service Agreement dated .....and the other RFP Project Documents and the Nodal Agency and the PFC Consulting Limited, agreeing to execute the *RFP Project Documents* with the Selected Bidder, regarding setting up the Project, the ..... [Insert name and address of the bank issuing the guarantee and address of the head office] (hereinafter referred to as "Guarantor Bank") hereby agrees unequivocally, irrevocably and unconditionally to pay to ..... (being the Nodal Agency) _at .....[Insert the Place from the address of the Nodal Agency indicated in the TSA] forthwith on demand in writing from the Nodal Agency or any Officer authorized by it in this behalf, any amount up to and not exceeding Rupees ..... Crores (Rs. .....) only [Insert the amount of the bank guarantee] on behalf of ANANTAPUR II REZ TRANSMISSION LIMITED.

This guarantee shall be valid and binding on the Guarantor Bank up to and including .....and shall not be terminable by notice or any change in the constitution of the Bank or the term of the Transmission Service Agreement or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective agreement.

Our liability under this Guarantee is restricted to Rs. ..... Crores (Rs. .....) only. Our Guarantee shall remain in force until ..... [Insert the date of validity of the Guarantee as per Article 3.1.2 of this Agreement]. The Nodal Agency, shall be entitled to invoke this Guarantee up to three hundred sixty five (365) days of the last date of the validity of this Guarantee.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand from ..... (in its roles as the Nodal Agency),

made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to Nodal Agency.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by ..... [Insert name of the Selected Bidder], ... [Insert name of the TSP] and / or any other person. The Guarantor Bank shall not require Nodal Agency to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against Nodal Agency in respect of any payment made hereunder.

THIS BANK GUARANTEE shall be interpreted in accordance with the laws of India.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

THIS BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring, liquidation, winding up, dissolution or any other change in the constitution of the Guarantor Bank.

THIS BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly Nodal Agency shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against **ANANTAPUR II REZ TRANSMISSION LIMITED** or the Selected Bidder, as the case may be, to make any claim against or any demand on **ANANTAPUR II REZ TRANSMISSION LIMITED** or the Selected Bidder, as the case may be, or to give any notice to **ANANTAPUR II REZ TRANSMISSION LIMITED** or the Selected Bidder, as the case may be, or to enforce any security held by the Nodal Agency or to exercise, levy or enforce any distress, diligence or other process against **ANANTAPUR II REZ TRANSMISSION LIMITED** or the Selected Bidder, as the case may be.

The Guarantor Bank acknowledges that this BANK GUARANTEE is not personal to Nodal Agency and may be assigned, in whole or in part, (whether absolutely or by way of security) by Nodal Agency to any entity to whom the Nodal Agency is entitled to assign its rights and obligations under the Transmission Service Agreement.

The Guarantor Bank hereby agrees and acknowledges that Nodal Agency shall have a right to invoke this Bank Guarantee either in part or in full, as it may deem fit.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rs. ..... Crores (Rs. .....) only and it shall remain in force until .....[Date to be inserted on the basis of Article 3.1.2of the Transmission Service Agreement], with an additional claim period of three hundred sixty five (365) days thereafter. This BANK GUARANTEE shall be extended from time to time for such period, as may be desired by ANANTAPUR II REZ TRANSMISSION

LIMITED. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if Nodal Agency serves upon us a written claim or demand.

In witness where of:

Signature .....

Name: .....

Power of attorney No.: .....

For:

..... [Insert Name of the Bank]

Banker's Seal and Full Address, including mailing address of the Head Office

Schedule: 9

Methodology for determining the Relief Under Force Majeure Event & Change in Law during Construction Period

The relief in the form of revision in tariff due to Force Majeure Event leading to extension of Scheduled COD for a period beyond one hundred eighty (180) days and/ or Change in Law during the construction period shall be as under:

$\Delta T = [(P \times d)] \div [1-(1+ d)^{(-n)}]$

Where,

ΔT = Change in Transmission Charges for each year

P = Sum of cumulative increase or decrease in the cost of the Project due to Change in Law and interest cost during construction corresponding to the period exceeding one hundred eighty (180) due to Force Majeure Event leading to extension of Scheduled COD for a period beyond one hundred eighty (180) days

n = number of years over which the Transmission Charges has to be paid

d = Discount rate as notified by the CERC, applicable on the Bid Deadline

The increase in Transmission Charges as stated above shall be applicable only if the value of increase in Transmission Charges as calculated above exceeds 0.30% (zero point three percent) of the quoted Transmission Charges of the TSP.

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

ANANTAPUR II REZ TRANSMISSION LTD. NEW DELHI

VAKALATNAMA

ADVOCATES' WELFARE FUND STAMP ₹25 0973432 BAR COUNCIL OF DELHI DELHI TWENTYFIVE RUPEES

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BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION, NEW DELHI

PETITION NO. OF 2025

IN THE MATTER OF:

Anantapur || REZ Transmission Limited ...**PETITIONER**

VERSUS

Central Transmission Utility
Of India Limited & Ors. ...**RESPONDENTS**

I, T. Amarendranath Reddy, Authorised Officer of the Petitioner Company in the above Petition do hereby appoint and retain **MATRUGUPTA MISHRA, SWAGATIKA SAHOO, NIPUN DAVE, SONAKSHI AND AKANKSHA V. INGOLE, Advocates** of **M/s Ritam Legal**, Advocate/s to appear, plead and act for me/us in the above appeal/ petition and to conduct and prosecute all proceedings that may be taken in respect thereof and applications for return of documents, enter into compromise and to draw any moneys payable to me/us in the said proceeding and also to appear in all applications for review and for leave to the Supreme Court of India in all applications for review of judgement.

Anantapur II REZ Transmission Limited

Place: New Delhi Signature of the Party

Date: 07.01.2025

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Executed in my presence. "Accepted"

[MATRUGUPTA MISHRA] [SWAGATIKA SAHOO]

D/113-C/2006

M/s. Ritam Legal,
Advocates and Advisory
M-15, 1st floor,
South Extension Part II
New Delhi – 110049
Phone: 011 – 43552390-91
E-mail: desk@ritamlegal.com

Signature with date

(Name and Designation)

D/4662/2020
NIPUN DAVE
9717277898

BK/1782/2018
SONAKSHI
9608490543

D/4127/2020
AKANKSHA V. INGOLE
9829352097

Swagatika Sahoo
O-1222/2007
(9650858049)

ANANTAPUR II REZ TRANSMISSION LIMITED,
Registered Office : YC Co Working Space, 3rd Floor, Plot No.94, Dwarka
Sec.13, Opp. Metro, Near Raddison Blu, South West Delhi, New Delhi- 110075

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CERTIFIED TRUE COPY OF THE RESOLUTION PASSED BY BOARD OF DIRECTORS OF ANANTAPUR II REZ TRANSMISSION LIMITED IN ITS MEETING HELD ON MONDAY, MARCH 31, 2025

Authority for making petitions to Central Electricity Regulatory Commission ("CERC") and to deal on behalf of the Company

"RESOLVED THAT the directors of the Company and Mr. T. Amarendranath Reddy, **("Authorized Representative")** be and are hereby severally authorized to:

a) Make/file an application / petition/ appeals to CERC/Tribunals/Courts for grant of transmission licence and adoption of tariff, approval for creation of security or any other petition(s)/application(s) under Electricity Act, 2003 and to execute all necessary applications, documents, undertakings in connection therewith and personally appear before CERC or any other related statutory authority as may be required from time to time on behalf of the Company;
b) file petitions before CERC from time to time on behalf of the Company;
c) appoint any consultant and lawyers for representing before CERC, APTEL, CEA, MOP or any other regulatory authority;
d) deal with Nodal Agency/ Central Transmission Utility of India Limited ('CTUIL')/Central Electricity Authority or any other statutory agency for the purpose of Transmission Licence Tariff Adoption, for authorization under Section 164 of the Electricity Act, 2003 etc. including signing and submission of undertaking on behalf of the Company for the purpose of compliance pertaining to TSA or any other law;
e) register and operate online account of the Company to be created on CERC Portal, NSWS Portal or Portal of any other statutory authority for e-filing of petitions/applications; and
f) do all such acts, deeds, matters and things necessary to give effect to this resolution for Establishment of Transmission System for Integration of Anantapur-II REZ - Phase-I (for 4.5 GW) (hereinafter referred to as "Project") awarded to the Company by PFC Consulting Limited, the Bid Process Coordinator, appointed by the Ministry of Power.

RESOLVED FURTHER THAT a certified true copy of this resolution be issued, as may be required, under the signatures of any one of the Directors of the Company."

For Anantapur II REZ Transmission Limited

SHRI PRAKASH SINGH

Shri Prakash Singh
Director
DIN: 10929893

Date: April 01, 2025
Place: Gurugram

FORM-I

Application Form for Grant of Transmission licence

1. **Particulars of the Applicant**
   - i) Name of the Applicant: Anantapur II REZ Transmission Limited.
   - ii) Status Individual/ partnership firm/ Private Limited Company/ Public Limited Company: Public Limited Company
   - iii) Address : Cooperate Office - DLF Cyber Park, Tower B, 9th Floor, Udyog Vihar Phase- 1, Sector 20, Gurugram - 122008
   - iv) Name, Designation & Address of the Contact Person (2 persons):
     Mr. Tatimakula Amarendranath Reddy (Director - Regulatory)
     DLF Cyber Park, Tower B, 9th Floor, Udyog Vihar Phase- 1, Sector 20, Gurugram - 122008
     Ms. Anshu Sharma (Chief Manager – Regulatory Affairs)
     DLF Cyber Park, Tower B, 9th Floor, Udyog Vihar Phase- 1, Sector 20, Gurugram - 122008
   - v) Contact Tel. No. (2 nos.): - 9310490976; 9873692022
   - vi) Fax No. :
   - vii) Email ID(s) : tan.reddy@sterlite.com
     regulatoryinfra@sterlitepower.com
   - viii) Place of Incorporation / Registration: Delhi
   - ix) Year of Incorporation/Registration: 2025
   - x) Following documents are to be enclosed:
     (a) Certificate of registration : Annexed with the Petition
     (b) Original Power of Attorney of the signatory to commit the Applicant or its promoter : Annexed with Form I.
2. **Particulars of the Project for which licence / Amendment in licence (list of existing elements and proposed addition /deletion element in case) is being sought:**
   (a) Transmission Lines:

Anantapur II REZ Transmission Limited

S. No.	Name (end-points location)	Voltage Class (kV)	Length (Km)	Type (S/C or D/C)	Remarks
1.	Ananthapuram-II – Davangere 765 kV D/C line	765 kV	150 Km	D/C	
2.	Ananthapuram-II – Cuddapah 765 kV D/C line	765 kV	200 Km	D/C	

(b) Sub-stations:

S. No.	Name (location)	Voltage Level(s) (kV)	Transformer (Nos. and MVA capacity)	Reactive / capacitative compensation (device with MVAR Capacity)	No. of Bays	Remarks
1.	Kurnool, Andhra Pradesh Establishment of 4x1500 MVA, 765/400 & 6x500 MVA, 400/220 kV Ananthapuram-II Pooling Station	765/400 400/220 kV	765/400 kV, 1500 MVA, ICTs – 4 Nos. (13x500 MVA incl. 1 spare unit)	765 kV, 330 MVAr Bus Reactor – 2 Nos.	765 kV ICT bays – 4 Nos. 400 kV ICT bays – 4 Nos. 400/220 kV, 500 MVA, ICTs – 6 Nos. 400 kV ICT bays – 6 Nos. 220 kV ICT bays – 6 Nos. 765 kV line bays – 4 Nos. 765 kV Bus Reactor bays – 2 Nos.	

Ananthapur II REZ Transmission Limited

					220 kV line bays – 6 Nos. 220 kV Bus Coupler (BC) Bay – 2 Nos. 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos	
2.	Ananthapuram +300 MVAr STATCOM at Ananthapuram-II PS			2x125 MVAr MSR. 2 Nos. (7x110 MVAr including 1 switchable spare unit for both bus reactor and line reactor) 2 Nos. (7x80 MVAr including 1 switchable spare unit)	400 kV bay – 1 No	

(a) Remarks: Status whether the element is existing or proposed to be added or deleted

(b) Scheduled COD : 24 months (31.03.2027)

(c) Agreements with Identified Long-term transmission customers or CTU for the Project, as applicable: CTUIL

3. Quoted transmission charges in case of project selected through the guidelines of competitive bidding and estimated completion cost of the project in other cases:

Ananthapur II REZ Transmission Limited

(*The Quoted transmission charges or the estimated cost, as the case may be, should be indicated in INR, along with the base month and year in case of the estimated cost*):
INR 4486.42 Million Per Annum

4. **In case applicant has been selected in accordance with the competitive bidding guidelines, enclose:**
   (a) Approval of Central Government as per Electricity (Transmission System Planning, Development and Recovery of Inter-state Transmission Charges) Rules, 2021.
   (b) Evaluation report (if made public) by the Bid Process Coordinator.
5. **List of documents enclosed:** As mentioned in the Index

Dated: 07.04.2025
Place: New Delhi

Ananteur II REZ Transmission Limited

(Signature of Applicant or the person Authorised)

RS: 1,00,000/-
Date of Payment made: 02-04-2025
NEFT Transaction No: ICICN52025040300626181
Bank Name: Bank of India / CBRCU