Ref: PG_ JKRTL/TL/ **Dated: 16.10.2026**

To,

The Secretary,

Central Electricity Regulatory Commission,

7th Floor, Tower B, World Trade Centre,

Nauroji Nagar, New Delhi-110029

Sub.: **Petition under Section 14 & 15 of the Electricity Act, 2003 read with Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 with respect to Transmission License to Jam Khambhaliya REZ Transmission Limited (a 100% wholly owned subsidiary of Power Grid Corporation of India Limited)**

Sir,

Three copies (1 original + 2 copies) of the petition for the above subject matter have been enclosed and e-filing has been done on CERC website. As per the public notice issued on 28.08.2010 by the Hon'ble Commission, the amount of Rs.1,00,000/- (Rupees One Lakh only) for filing the petition is being paid through RTGS and in accordance with the Regulations 12(2), Payment of Fees Regulations 2012. Form-1 duly filled in against the aforementioned petition is also enclosed herewith.

Electronic Copies of the application are being forwarded to the CTUIL (Nodal Agency) and to the Bid Process Coordinator and DICs & beneficiaries identified by CTUIL as party to the Petition based on the list of the beneficiaries furnished by CTUIL. The complete petition along with Annexures is posted on the website: **www.powergrid.in/subsidiaries**.

Thanking You,

Yours faithfully,

Anand Kumar Saraph

Digitally signed by Anand Kumar Saraph
Date: 2026.10.16 19:28:17 +05'30'

(Anand Kumar Saraph)

Project In-charge

Jam Khambhaliya REZ Transmission Limited

Email : regulatory@powergrid.in

Enclosures: As above.

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO. :……..…….

IN THE MATTER OF:-

Petition under Section 14 & 15 of the Electricity Act, 2003 read with Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 with respect to Transmission License to Jam Khambhaliya REZ Transmission Limited (a 100% wholly owned subsidiary of Power Grid Corporation of India Limited)

Jam Khambhaliya REZ Transmission Limited
(A 100% wholly owned subsidiary of Power Grid Corporation of India Limited)
Registered office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016
Address for correspondence: C/o ED (Commercial & RC), Power Grid Corporation of India Limited, Floor No. 02, Tower-01, IRCON International Tower, Plot No. 16, Institutional Area, Sector-32, Gurgaon-122003 …..**PETITIONER**

VERSUS

Central Transmission Utility of India Limited,
Floor No. 02, Tower-01, IRCON International Tower,
Plot No. 16, Institutional Area, Sector-32,
Gurgaon-122003
& Ors. ....**RESPONDENT(S)**

Anand Kumar Saraph
Digitally signed by Anand Kumar Saraph
Date: 2026.10.16 19:28:38 +05'30'

(Anand Kumar Saraph)
Project In-charge,
Jam Khambhaliya REZ Transmission Limited

Place: Ahmedabad
Date: 16.10.2026

BEFORE THE CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

PETITION NO. :……..…….

IN THE MATTER OF

Petition under Section 14 & 15 of the Electricity Act, 2003 read with Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 with respect to Transmission License to Jam Khambhaliya REZ Transmission Limited (a 100% wholly owned subsidiary of Power Grid Corporation of India Limited)

Jam Khambhaliya REZ Transmission Limited
(A 100% wholly owned subsidiary of Power Grid Corporation of India Limited)
Registered office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016
Address for correspondence: C/o ED (Commercial & RC), Power Grid Corporation of India Limited, Floor No. 02, Tower-01, IRCON International Tower, Plot No. 16, Institutional Area, Sector-32, Gurgaon-122003 ….**PETITIONER**

VERSUS

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& Ors. .....**RESPONDENT(S)**

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Anand Kumar Saraph

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Date: 2026.10.16 19:29:02 +05'30'

(Anand Kumar Saraph)
Project In-charge,
Jam Khambhaliya REZ Transmission Limited

Place: Ahmedabad

Date: 16.10.2026

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO. :……..…….

IN THE MATTER OF

Petition under Section 14 & 15 of the Electricity Act, 2003 read with Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 with respect to Transmission License to Jam Khambhaliya REZ Transmission Limited (a 100% wholly owned subsidiary of Power Grid Corporation of India Limited)

MEMO OF AUTHORISATION

Jam Khambhaliya REZ Transmission Limited **….. PETITIONER**

I, Anand Kumar Saraph, the petitioner abovenamed do hereby nominate, appoint and constitute, to act, plead and appear on my/our behalf in the aforesaid matter.

1. Anand Kumar Saraph, Project In-charge
2. A Jagannath Rao, Chief General Manager
3. Ashish Agrawal, Sr Dy General Manager
4. Prashant Kumar, Dy General Manager
5. Abhijit Daimari, Dy General Manager

IN WITNESS WHEREOF I/We have set and subscribed my/our hands to this writing on this 16th day of October 2026.

FILED BY

Anand Kumar Saraph
Digitally signed by Anand Kumar Saraph
Date: 2026.10.16 19:29:21 +05'30'

(Anand Kumar Saraph)
Project In-charge,
Jam Khambhaliya REZ Transmission Limited

Place: Ahmedabad

Date: 16.10.2026

BEFORE THE CENTRAL ELECTRICITY REGULATORY COMMISSION,

NEW DELHI

PETITION NO. :……..…….

IN THE MATTER OF

Petition under Section 14 & 15 of the Electricity Act, 2003 read with Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 with respect to Transmission License to Jam Khambhaliya REZ Transmission Limited (a 100% wholly owned subsidiary of Power Grid Corporation of India Limited)

Jam Khambhaliya REZ Transmission Limited

…..**PETITIONER**

VERSUS

Central Transmission Utility of India Limited,
& Ors. ....**RESPONDENT(S)**

MEMO OF PARTIES

Jam Khambhaliya REZ Transmission Limited
(A 100% wholly owned subsidiary of Power Grid Corporation of India Limited)
Registered office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi 110 016
Address for correspondence: C/o ED (Commercial & RC), Power Grid Corporation of India Limited, Floor No. 02, Tower-01, IRCON International Tower, Plot No. 16, Institutional Area, Sector-32, Gurgaon-122003 ….**PETITIONER**

VERSUS

1. **Central Transmission Utility of India Limited**,
   Floor No. 02, Tower-01, IRCON International Tower,
   Plot No. 16, Institutional Area, Sector-32,
   Gurgaon-122003

2. **PFC Consulting Limited**
   D-Block, REC Corporate Headquarter,
   Plot No. I-4, Sector-29, Gurugram (Haryana)-122001

3. **Madhya Pradesh Power Management Company Ltd.**
   14, Shakti Bhawan, Rampur, Jabalpur - 482008
   Email: anurag.naik@mppmcl.com&comml.deptt@mppmcl.com

4. **Maharashtra State Electricity Distribution Co. Ltd.**
   Prakashgad, Plot No G-9, A K Marg, Bandra (East), Mumbai-400 051
   Email: ceppmsedcl@gmail.com

5. **Gujarat Urja Vikas Nigam Ltd**.
   Sardar Patel Vidyut Bhawan, Race Course Road, Vadodara - 390 007
   Email: decsp.guvnl@gebmail.com

6. **Electricity Department of Goa**
   Vidyut Bhawan, Govt. of Goa, Panaji, Goa - 403 001
   Email: cee-elec.goa@nic.in

7. **DNHDD Power Distribution Corporation Limited**
   Vidyut Bhawan, 66kv Road, Near Secretariat, Amli, Silvassa - 396 230
   Email: bhavikshah@torrentpower.com

8. **Chhattisgarh State Power Distribution Company Limited**
   P.O. Sunder Nagar, Dangania, Raipur, Chhattisgarh-492 013
   Email: cecomcseb@rediffmail.com

9. **Heavy Water Board**
   O Floor, Vikram Sarabhai Bhavan, Trombay,
   Anushaktinagar, Mumbai - 400094 , Maharashtra
   Email: dksingh@mum.hwb.gov.in

10. **Bhabha Atomic Research Centre**
    Anushakti Nagar, Mumbai, Maharashtra-400085
    Email: electricitybill@barctara.gov.in

11. **GMR Warora Energy Limited**
    Plot B-1,GMR Warora Energy Ltd, Mohabala MIDC Growth Centre,
    Post – Warora, Dist – Chandrapur, Maharashtra-442907
    Email: pramod.khandelwal@gmrgroup.in

12. **ACB India Limited**
    7th Floor, Corporate Tower, Ambience Mall,
    NH-8, Gurgaon-122 001(Haryana)
    Email: acbpower@acbindia.com

13. **Torrent Power Limited**
    Naranpura Zonal Office, Sola Road,
    Ahmedabad-380013
    Email: satyanarayansoni@torrentpower.com

14. **Thermal Powertech Corporation India**
    6-3-1090, Clock C, Level 2, TSR Towers,
    Rajbhavan Road, Somajiguda , Hyderabad-500082, Telangana
    Email: oa_commercial.seil@sembcorp.com

15. **HVDC Bhadrawati, PGCIL**
    PGCIL RHQ, WR-I, Sampriti Nagar,
    Off National Highway No. 8,
    Taluka : Kamrej,PO: Uppalwadi,
    Nagpur-440026 Maharashtra
    Email: wr1commercial@powergrid.co.in

16. **HVDC Vindhyachal, PGCIL**
    PGCIL RHQ, WR-I, Sampriti Nagar,
    Off National Highway No. 8,
    Taluka : Kamrej,PO: Uppalwadi,
    Nagpur-440026 Maharashtra
    Email: wr1commercial@powergrid.co.in

17. **HVDC Champa PGCIL**
    PGCIL RHQ, WR-I, Sampriti Nagar,
    Off National Highway No. 8,
    Taluka : Kamrej,PO: Uppalwadi,
    Nagpur-440026 Maharashtra
    Email: wr1commercial@powergrid.co.in

18. **West Central Railway Head Office**
    General Manager's Office,Electrical Branch,
    Jabalpur– 482 001
    Email: dyceetrdwcr@gmail.com

19. **Western Railway**
    PCEE Office, 5th Floor, Churchgate New station building,
    Churchgate, Mumbai-400020, Maharashtra
    Email:dyceetrdwrhq@gmail.com

20. **DB Power Limited- Untied**
    3rd Floor, Naman Corporate Link,
    Opp. Dena Bank, C-31, G Block , Bandra Kurla Complex,
    Bandra (East) , Mumbai, Maharashtra – 400051
    Email: sales@dbpower.in

21. **Chhattisgarh State Power Trading Co. Ltd.**
    2nd floor Vidyut Sewa Bhawan
    Raipur, Chhattisgarh - 492010
    Email: ce.techcell@gmail.com

22. **TRN Energy Private Ltd-Untied**
    7th Floor, Ambience Office Block
    Gurugram
    Email:acbpower@acbindia.com

23. **Adani Power (Mundra) Limited**
    Adani Corporate House, Shantigram,
    Near Vaishnavdevi Circle, S G Road,
    Ahmedabad - 382421
    Email: hitesh.modi@adani.com

24. **Raigarh HVDC Station**
    RPT HVDC Office, Hebbal,
    Bangalore – 560094
    Email: pkmahalik@powergridindia.com

25. **Arcelor Mittal Nippon Steel India Ltd.**
    27, AMNS House, 2TH KM Surat
    Hazira road, Hazira-394270, Gujarat
    Email: naresh.yadav@amns.in

26. **Central Railway**
    Electrical Branch (HQ), 2nd Fl., Parcel Office Bldg.,
    Mumbai, Maharashtra - 400001
    Email: cesecrly@gmail.com

27. **MPSEZ Utilities Ltd.**
3rd Floor, Adani Corporate House,
Ahmedabad- 382421
Email: rajesh.sirigirisetty@adani.com

28. **MFA RENEWABLES PRIVATE LIMITED,**
2A, Lord Sinha Road, First Floor, Middleton Row,
Kolkata, West Bengal-700071, Email: adrit.palchoudhury@rpsg.in

29. **OPWIND ENERGY PRIVATE LIMITED,**
Kuber Avenue, Shop No. 207, Panch Bungalow Road,
Jamnagar, Gujarat-361001, Email: DILIP@OPERAENERGY.IN

30. **KADODIYA WIND ENERGY PRIVATE LIMITED,**
301, ABS Tower, Old Padra Road, Alkapuri,
Vadodara, Gujarat-390007, Email: kadodiya.wind@inoxwind.com

31. **SATPURA RENEWABLE PRIVATE LIMITED,**
2nd Floor, Mira Corporate Suites, Plot No. 1 & 2,
Old Ishwar Nagar, New Friends Colony,
New Delhi-110065, Email: NISHANT_THAKKAR@WELSPUN.COM

32. **IRIS RENEWABLES ALPHA TWO PRIVATE LIMITED,**
Level 4, First International Financial Centre, Plot C-54 & C-55,
G Block, Bandra Kurla Complex, Bandra East, Mumbai-400051, Email: shma@cisc.dk

33. **JUNIPER GREEN ENERGY LIMITED**
(formerly known as Juniper Green Energy Private Limited),
Plot No. 18, First Floor, Institutional Area, Sector-32,
Gurugram, Haryana-122001, Email: pavan.gupta@junipergreenenergy.com

34. **TORRENT SAURYA URJA 2 PRIVATE LIMITED,**
SUGEN Mega Power Project, Akhakhol, Surat, Gujarat-394155,
Email: jaydipchudasama@torrentpower.com

35. **DEVPUR RENEWABLES PRIVATE LIMITED,**
1st Floor, Eastern Wing, Thapar House,
124 Janpath, New Delhi-110001, Email: anjana.sharma@edf-re.in

36. **ADITYA BIRLA RENEWABLES LIMITED,**
8th Floor, Parsvnath Capital Towers,
Bhai Vir Singh Marg, New Delhi-110001, Email: vaibhav.kapoor@adityabirla.com

37. **SUFFICIO ENERGY PRIVATE LIMITED,**
Unit No. 1, Ground Floor, Boston House, Suren Road,
Off Andheri-Kurla Road, Andheri East,
Mumbai, Maharashtra-400093, Email: nandita.jain@hindujarenewables.com

38. **TAPI RENEWABLE PRIVATE LIMITED,**
2nd Floor, Mira Corporate Suites, Plot No. 1 & 2,
Old Ishwar Nagar, New Friends Colony,
New Delhi-110065, Email: NISHANT_THAKKAR@WELSPUN.COM

39. **ENFINITY GLOBAL CLEAN ENERGY PRIVATE LIMITED,**
4th Floor, Nexity T30, Plot No. 9, 10, 10A, 10B & 8B2,
Sy. No. 83/1, Hyderabad Knowledge City Layout,
Raidurgam, Gachibowli, Seri Lingampally,
Rangareddy, Telangana-500032, Email: s_sachin@enfinityglobal.com

40. **EG PAVAN SURYA POWER PRIVATE LIMITED,**
4th Floor, Nexity T30, Plot No. 9, 10, 10A, 10B & 8B2,
Sy. No. 83/1, Hyderabad Knowledge City Layout,
Raidurgam, Gachibowli, Seri Lingampally,
Rangareddy, Telangana-500032, Email: s_sachin@enfinityglobal.com

41. **WAAREE FOREVER ENERGIES PRIVATE LIMITED,**
504, Western Edge-I, Off Western Express Highway,
Borivali (East), Mumbai-400066, Email: pujandoshi@waareertl.com

42. **EG SOLAIRE POWER PRIVATE LIMITED,**
4th Floor, Nexity T30, Plot No. 9, 10, 10A, 10B & 8B2,
Sy. No. 83/1, Hyderabad Knowledge City Layout,
Raidurgam, Gachibowli, Seri Lingampally,
Rangareddy, Telangana-500032, Email: s_sachin@enfinityglobal.com

43. **TATA POWER RENEWABLE ENERGY LIMITED,**
Corporate Centre B, The Tata Power Company Limited,

34 Sant Tukaram Road, Carnac Bunder,
Mumbai-400009, Email: tprelconnectivity@tatapower.com

44. **WYN RENEWABLES PROJECT 5 PRIVATE LIMITED,**
1st Floor, Eastern Wing, Thapar House, 124 Janpath,
New Delhi-110001, Email: saurabh.kumarsingh@edf-re.in

45. **MIYANI POWER INFRA LLP,**
KP House, Near Sindhubhavan Road,
Bodakdev, Ahmedabad, Gujarat, Email: sohil.dabhoya@kpgroup.co

46. **INDIANOIL NTPC GREEN ENERGY PRIVATE LIMITED,**
Engineering Office Complex, Plot A-8A, Sector-24,
Noida, Uttar Pradesh-201301, Email: madhusmritidevchoudhry@ntpc.co.in

47. **K.P. ENERGY LIMITED, KP House,**
Near Sindhubhavan Road, Bodakdev,
Ahmedabad, Gujarat, Email: affan.patel@kpgroup.co

48. **GUJARAT ENERGY TRANSMISSION CORPORATION LTD. (GETCO)**
SARDAR PATEL VIDHYUT BHAVAN ,
RACE COURSE, GETCO, VADODARA,
Gujarat, India 390007, Email: acerc.getco@gebmail.com

49. **JAMNAGAR TRANSMISSION LIMITED**
C 105, Anand Niketan, New Delhi,
DELHI – 110021, Email: prashant.kumar1@adani.com

….RESPONDENTS

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Anand Kumar Saraph
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Date: 2026.10.16 19:30:11 +05'30'

(Anand Kumar Saraph)
Project In-charge
Jam Khambhaliya REZ Transmission Limited

Place: Ahmedabad

Date: 16.10.2026

BEFORE THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO.:…….

IN THE MATTER OF

Petition under Section 14 & 15 of the Electricity Act, 2003 read with Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 with respect to Transmission License to Jam Khambhaliya REZ Transmission Limited (a 100% wholly owned subsidiary of Power Grid Corporation of India Limited)

Jam Khambhaliya REZ Transmission Limited
(A 100% wholly owned subsidiary of Power Grid Corporation of India Limited)
Registered office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi 110 016
Address for correspondence: C/o ED (Commercial & RC), Power Grid Corporation of India Limited, Floor No. 02, Tower-01, IRCON International Tower, Plot No. 16, Institutional Area, Sector-32, Gurgaon-122003 …..**PETITIONER**

VERSUS

Central Transmission Utility of India Limited,
Floor No. 02, Tower-01, IRCON International Tower,
Plot No. 16, Institutional Area, Sector-32,
Gurgaon-122003
& Ors. ....**RESPONDENT(S)**

PETITION

I. BACKGROUND

1. Brief background of the Petitioner

The Petitioner, i.e., Jam Khambhaliya REZ Transmission Limited ("**JKRTL**"/"**Petitioner**") is a company incorporated on 21.05.2026 under the Companies Act, 2013 as a Special Purpose Vehicle (SPV) under the TBCB framework for implementation of Inter-State transmission system scheme - "**Transmission system for Integration of Power from RE Projects in Jam**

Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)" ("**the Project**") under Tariff Based Competitive Bidding under Section 63 of the Act on a Build, Own, Operate and Transfer ("**BOOT**") basis. The SPV was incorporated by PFC Consulting Limited and, upon completion of the Tariff Based Competitive Bidding process, its entire shareholding was transferred on 12.10.2026 to Power Grid Corporation of India Limited (POWERGRID), the Successful Bidder. JKRTL is presently a wholly owned subsidiary of POWERGRID.

2. **Brief background of the Respondent(s)**

a) Respondent No. 1, Central Transmission Utility of India Limited ("CTUIL"), is a Government Company and has been notified by the Ministry of Power, Government of India, vide Gazette Notification dated 09.03.2021 as the Central Transmission Utility ("CTU") under Section 38 of the Electricity Act, 2003. CTUIL is responsible for discharging all functions of the CTU, including undertaking transmission of electricity through the inter-State transmission system, and planning and coordination relating to such system, as specified under the Act. CTUIL is also the Nodal Agency as per the RfP and TSA of the instant project.

b) Respondent No. 2, PFC Consulting Limited (PFCCL), was incorporated on 12.07.2007 as a wholly owned subsidiary of Power Finance Corporation Limited (PFC), a Maharatna Central Public Sector Enterprise under the Ministry of Power, Government of India. PFCCL was appointed by the Government of India vide Gazette notification no. [CG-DL-E-19022026-270309] dated 12.02.2026 as the BPC for selection of the TSP for the Project through the TBCB process.

c) Respondent Nos. 3 to 47 are the DICs, beneficiaries of Western Region and generating station granted connectivity at proposed transmission projects, which are the beneficiaries of the Project.

d) Respondents 48 to 49 are the owner of the interconnecting substations viz. Saurasthra (GETCO) and Jamnagar (JMTL).

3. **Proof of service**

It is submitted that a copy of the complete petition along with annexures has been served electronically upon the Respondents and proof of such service is enclosed as **Annexure-15**. For any Respondent not registered on the Commission's e-filing portal, service shall additionally be effected in accordance with the applicable CERC (Conduct of Business) Regulations, 2023 requirements.

4. **Status of the Petitioner**

The Petitioner is a company incorporated under the Companies Act, 2013 and is a 100% wholly owned subsidiary of POWERGRID.

5. **Important events/ clearances relevant to the assets under consideration**

The important events/clearances relevant to the assets under consideration in the petition are tabulated below:-

Date	Event / Milestone
19.01.2026	37th NCT meeting: Scheme was approved
12.02.2026	MoP notified PFCCL as Bid Process Coordinator
12.03.2026	Request for Proposal (RfP) issued by PFCCL
21.05.2026	JKRTL incorporated as project SPV
28.07.2026	Bid submitted by POWERGRID
18.08.2026	Electronic reverse auction conducted
21.08.2026	POWERGRID selected as Successful Bidder by Bid Evaluation Committee (BEC) and Letter of Intent (LoI) issued
24.08.2026	Ministry of Power has granted the section 68 approval to the Petitioner
14.09.2026	Ministry of Power officially approved the sale and transfer of the project to successful bidder
09.10.2026	Extension of LoI issued by BPC
12.10.2026	Share Purchase Agreement (SPA) and Transmission Service Agreement (TSA) executed, and SPV transferred to POWERGRID

6. **Proof of Eligibility and jurisdiction**

a. The Petitioner was incorporated by PFCCL as the SPV for the purpose of implementation of the Project under Tariff Based Competitive Bidding (TBCB) and POWERGRID emerged as the successful bidder to acquire 100% equity shareholding of the Petitioner pursuant to the competitive bidding process for the Project under section 63 of the Electricity Act.

b. The Petitioner submits that it is fully entitled, both in law and on facts, to be granted a transmission licence under Sections 14 and 15 of the Act. The Petitioner is the SPV incorporated exclusively for implementation of the Project and has been selected as the TSP pursuant to a TBCB process conducted under Section 63 of the Act.

c. Section 14 & 15 of the Act contemplates that a transmission licence shall be granted to any person who is duly authorised to establish, operate and maintain a transmission system. In the present case, the Petitioner derives its authority directly from the outcome of a statutorily governed competitive bidding process, conducted under Section 63 of the Act.

d. Further, Section 79(1)(e) of the Act vests this Hon'ble Commission with exclusive jurisdiction to grant licences for Inter-State transmission systems. In addition, this Hon'ble Commission exercises jurisdiction over the present Petition under the CERC (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 (Transmission Licence Regulations), which govern the manner, form and procedure for grant of transmission licences. The Project, being part of Inter-State transmission network, squarely falls within the territorial and subject matter jurisdiction of this Hon'ble Commission.

e. Accordingly, the present Petition is fully maintainable before this Hon'ble Commission under the Act read with the Transmission Licence Regulations.

II. DETAILED PETITION

7. The present petition is being filed by Jam Khambhaliya REZ Transmission Limited under Section 14 & 15 of the Electricity Act, 2003 read with Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 seeking grant of a Transmission Licence to the petitioner for implementation of Inter-State transmission system scheme - "**Transmission system for**

Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)" under Tariff Based Competitive Bidding as per Section 63 of the Act on BOOT basis.

8. The details regarding the Project for which the present transmission licence is sought and Scheduled Commercial Operation Date ("**SCOD**") are set out as below:

Sl. No.	Name of the Transmission Element	Scheduled COD	Percentage 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 4x1500 MVA, 765/400 kV and 10x500 MVA, 400/220kV Substation near Kalyanpur (GIS) with 2x330 MVAr, 765 kV bus reactor and 2x125 MVAr, 420 kV bus reactor • 765/400 kV, 1500 MVA ICT - 4 Nos. (13x500 MVA single phase units including one spare ICT Unit) (3 on Sec-I and 1 on Sec-II) • 400/220 kV, 500 MVA ICT-10 Nos. (5 on Sec-I and 5 on Sec-II) • 765 kV ICT bays - 4 Nos. • 400 kV ICT bays - 14 Nos. • 220 kV ICT bays - 10 Nos. • 765 kV Line bays - 4 Nos. (2 on Sec-I and 2 on Sec-II) • 765 kV Sectionalisation bay: 1-set • 400 kV Sectionalisation bay: 1-set • 220 kV Sectionalisation bay: 1 set	31.03.2030	74.90%	All Elements are required to be commissioned simultaneously as their utilization is dependent on commissioning of each other. Further, "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I" in Jamnagar area, which is recently under implementation by Jamnagar Transmission Limited (a subsidiary of Adani), is pre-

Sl. No.	Name of the Transmission Element	Scheduled COD	Percentage 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
	• 1x330 MVAr, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactors) (1 on Sec-I and 1 on Sec-II) • 765 kV Bus reactor bay - 2 Nos. • 125 MVAr, 420 kV bus reactor- 2 Nos. (1 on Sec-I and 1 on Sec-II) • 400 kV bus reactor bay- 2 Nos. • 220 kV BC Bay-2 Nos. • 400 kV line bay -1 No. (for interconnection of RE Project at Sec-I) • 220 kV line bays - 12 Nos. (for interconnection of RE Projects, 6 on Sec-I and 6 on Sec-II) **Future provision (space for):** • 765/400 kV, 1500 MVA ICT along with bays- 2 Nos. (on Sec-II) • 765 kV line bays along with switchable line reactors - 8 Nos. **(4** Nos. on Sec-I and 4 Nos. on Sec-II) • 765 kV, 330 MVAr Bus Reactor along with bay: 2 Nos. (1 on Sec-I and 1 on Sec-II)			required for utilization of this scheme.

Sl. No.	Name of the Transmission Element	Scheduled COD	Percentage 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
	• 400 kV line bays along with switchable line reactors-12 Nos. (4 Nos. on Sec-I and 8 Nos. on Sec-II) • 420 kV, 125 MVAr Bus Reactor along with bays: 2 Nos. (1 on Sec-I and 1 on Sec-II) • 220 kV line bays: 3 Nos. on Sec-I and 3 Nos. on Section-II • Establishment of 6000 MW, ± 800 kV Kalyanpur (GIS} (HVDC} [LCC] terminal station (4x1500 MW) along with associated interconnections with 400 kV HVAC Switchyard and all associated equipment (incl. filters)/bus extension, etc. (2x1500 MW Poles on each 400 kV bus section) • ±400 MVAr STATCOM with 400 kV bay - 2 Nos. (1 on Sec-I and 1 on Sec-II)			
2.	Kalyanpur (GIS) - Jamnagar (GIS) 765 kV D/C line			
3.	2 Nos. 765 kV line bays at Jamnagar (GIS) S/s - • 765 kV line bays- 2 Nos. (GIS)			
4.	Kalyanpur (GIS) - Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/c line			

Sl. No.	Name of the Transmission Element	Scheduled COD	Percentage 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
5.	330 MVAr Switchable line reactors on each circuit at Saurashtra (Sompipaliya) (GETCO) (GIS) end of Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/C line (with NGR bypass arrangement) • 330 MVAr, 765 kV switchable line reactor- 2 Nos. (7x110 MVAR single Phase Reactors including one spare unit for line reactors)) • 765 kV Switchable Line Reactor Bay - 2 Nos. (GIS)			
6.	2 Nos. 765 kV line bays at Saurashtra (Sompipaliya) (GETCO) (GIS) S/s • 765 kV line bays - 2 Nos. (GIS) (2 nos. complete diameters (Main-Tie- Main) to be considered			
7.	Installation of Synchronous Condenser (+300/-200 MVAr) (Minimum) and Short circuit contribution at PCC of 1200 MVA (Minimum) at Kalyanpur (GIS) - 2 Nos. Value of Inertia (Minimum) shall be 3000 MW-s • Synchronous Condenser along with associated 400 kV bay-2 Nos. (one on each Sec-I and II)		22.00%	

Sl. No.	Name of the Transmission Element	Scheduled COD	Percentage 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
8.	Creation of 220 kV switchyard along with Installation of 3x500 MVA, 400/220 kV ICTs at Jamnagar (GIS) S/s • Creation of 220 kV Bus Section-I • 220 kV BC Bay-1 No. • 400/220 kV, 500 MVA ICT - 3 Nos. (on 400 kV and 220 kV Sec-I) • 400 kV ICT bays - 1 No. (2 *Nos. ICTs to be terminated in 2 nos. GIS bays being implemented as part of Diameter completion at Jamnagar S/s under "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I in Jamnagar area" scheme)* • 220 kV ICT bays - 3 Nos.		3.10%	Elements at SI. No. 8 and 9 are required to be commissioned simultaneously as their utilization is dependent on commissioning of each other. Further, Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I" in Jamnagar area, which is presently under implementation by Jamnagar Transmission Limited (a subsidiary of Adani), is pre-required for utilization of this scheme.
9.	4 Nos. 220 kV line bays for RE interconnection at Jamnagar (GIS) S/s • 220 kV line bays - 4 Nos.			

Notes:

i. TSP of Jamnagar S/s shall provide space for above scope of work at SI. 3, 8 and 9 on free of cost basis

ii. GETCO shall provide space for above scope of work at Sl. 5 & 6 on free of cost basis

Sl. No.	Name of the Transmission Element	Scheduled COD	Percentage 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
iii.	*Bay(s) required for completion of diameter {GIS} in one-and-half breaker scheme shall also be executed by the TSP.*			
iv.	*Above Syncons (at Sl. 7) shall be considered as 'transmission asset' similar to STATCOM and SVC for its tariff mechanism.*			

9. The transmission scheme was deliberated and approved in the 37th National Committee on Transmission (NCT) meeting dated 19.01.2026 and minutes issued on 30.01.2026 for execution under the Tariff Based Competitive Bidding ("**TBCB**") framework.

   All the relevant extracts of aforesaid 37th National Committee on Transmission (NCT) meeting dated 19.01.2026 are enclosed and marked as **Annexure-1.**

10. Pursuant to the approval of the Project by the 37th National Committee on Transmission, Ministry of Power, Government of India, vide Gazette notification no. CG-DL-E-19022026-270309 dated 12.02.2026 has notified PFC Consulting Limited ("**PFCCL**" / "**Respondent No. 2**") as the Bid Process Coordinator ("**BPC**") for the purpose of selection of Bidder as Transmission Service Provider (TSP) to establish the instant project through Tariff Based Competitive Bidding process on Build, Own, Operate and Transfer basis. Copy of the gazette notification is enclosed and marked as **Annexure-2.**

11. In furtherance, PFCCL, in its capacity as the duly appointed BPC, issued the Request for Proposal dated 12.03.2026 ("**RfP**") inviting bids for development of the Project through the TBCB process in accordance with the TBCB Guidelines and the Guidelines for Encouraging Competition in Development of Transmission Projects issued by the Ministry of Power under Section 63 of the Act, as amended from time to time.

    Copy of relevant extract of RfP dated 12.03.2026 along with the Global Invitation and advertisements is annexed herewith and marked as **Annexure-3 (Colly).**

12. On 20.03.2026, PFCCL, in its capacity as the duly appointed BPC, formally informed this Hon'ble Commission of the initiation of the TBCB process for selection of the TSP for the Project, by issuance of a Global Invitation in national and international newspapers in terms of Clause 4.2 of the TBCB Guidelines. A copy of the said letter is annexed herewith and marked as **Annexure-4**.

13. On the same date i.e. 20.03.2026, PFCCL also formally informed Ministry of Power, that the TBCB process for the Project had been initiated by issuance of the Global Invitation and RfP and requested Ministry of Power to publish the RfP notice and RfP documents on its website. A copy of the said letter is annexed herewith and marked as **Annexure-5**.

14. In terms of the RfP, the Project was to be implemented through a Special Purpose Vehicle ("**SPV**") structure. Accordingly, the Petitioner "**Jam Khambhaliya REZ Transmission Limited**" having its registered office at New Delhi was incorporated on 21.05.2026 by PFCCL as the SPV under the Companies Act 2013 for the purpose of implementation of the Project, and bidders were required to acquire 100% of the equity shareholding of the Petitioner, together with all its assets and liabilities, and to undertake the development, financing, construction, operation and maintenance of the Project. Subsequently, Ministry of Power has granted the section 68 approval to the petitioner on 24.08.2026.

    A copy of the Certificate of Incorporation and section 68 approval of Jam Khambhaliya REZ Transmission Limited is annexed herewith and marked as **Annexure-6.**

15. PFCCL issued the Request for Proposal dated 12.03.2026 for the instant scheme. POWERGRID submitted its bids (Technical & Financial) on 28.07.2026. Post opening of bids, e-Reverse Auction for the project was conducted on 18.08.2026 in accordance with the RfP and the TBCB Guidelines.

16. After completion of the e-Reverse Auction and verification of the bid documents submitted by POWERGRID, the Bid Evaluation Committee ("**BEC**") constituted under the TBCB Bidding framework evaluated the bids in accordance with the "Tariff Based Competitive Bidding Guidelines for Transmission Service" and the "Guidelines for Encouraging Competition in Development of Transmission Projects" issued by the MoP under Section 63 of the Electricity Act, 2003.

17. Thereafter, on 20.08.2026, the Bid Evaluation Committee issued its Certificate confirming the following:-

(i) the entire bidding process for the Project had been conducted in compliance with the applicable TBCB Guidelines,

(ii) POWERGRID, having quoted the lowest Annual Transmission Charges of Rs.8,229.12 million per annum pursuant to the e-Reverse Auction, had emerged as the Successful Bidder, and

(iii) the quoted tariff discovered through e-reverse bidding process was acceptable.

A copy of the Bid Evaluation Committee Certificate dated 20.08.2026 is annexed herewith and marked as **Annexure-7**.

18. On 28.08.2026, in furtherance of the RfP and in accordance with Clause 1.6.2.1(5) thereof, PFCCL issued a letter to POWERGRID communicating the Acquisition Price of Rs.19,22,27,359/- (Rupees Nineteen Crore Twenty Two Lakh Twenty Seven Thousand Three Hundred and Fifty Nine Only) payable by the Selected Bidder for acquisition of 100% equity shareholding of the Petitioner, together with all its assets and liabilities.

A copy of the letter dated 28.08.2026 issued by PFCCL to POWERGRID is annexed herewith and marked as **Annexure-8.**

19. Pursuant to the bidding process conducted by PFCCL in accordance with the RfP, including the e-reverse auction held on 18.08.2026, Power Grid Corporation of India Limited ("**POWERGRID**") emerged as the Successful Bidder for the Project, having quoted the lowest Annual Transmission Charges, and was accordingly issued a Letter of Intent dated 21.08.2026 ("**LoI**") by PFCCL.

Subsequently, vide letter dated 09.10.2026, BPC provided extension for completion of various activities under clause 2.15.2 of the RfP document till 12.10.2026.

A copy of the LoI dated 21.08.2026 and revised LoI dated 09.10.2026 issued by PFCCL to POWERGRID is annexed herewith and marked as **Annexure-9**.

20. On 14.09.2026, Ministry of Power officially approved the sale and transfer of the project to successful bidder.

A copy of the approval of MoP dated 14.09.2026, POWERGRID is annexed herewith and marked as **Annexure-10**.

21. In accordance with the RfP and the LoI, the Petitioner was transferred to the Successful Bidder i.e. POWERGRID on 12.10.2026 and PFCCL, POWERGRID & the Petitioner executed the Share Purchase Agreement ("**SPA**"). In addition, the Transmission Service Agreement ("**TSA**") was signed between the Petitioner and CTUIL, pursuant to which 100% of the equity shareholding of the Petitioner stood transferred to POWERGRID, and the Petitioner became the duly appointed Transmission Service Provider ("**TSP**") for the Project.

    Copies of the SPA and TSA dated 12.10.2026 are annexed herewith and marked as **Annexure-11** and **Annexure-12** respectively.

22. A summary of the final timelines involved in the bidding process is given below for reference:

Date	Event / Milestone
19.01.2026	37th NCT meeting: Scheme was approved
12.02.2026	MoP notified PFCCL as Bid Process Coordinator
12.03.2026	Request for Proposal (RfP) issued by PFCCL
21.05.2026	JKRTL incorporated as project SPV
28.07.2026	Bid submitted by POWERGRID
18.08.2026	Electronic reverse auction conducted
21.08.2026	POWERGRID selected as Successful Bidder by Bid Evaluation Committee (BEC) and Letter of Intent (LoI) issued
24.08.2026	Ministry of Power has granted the section 68 approval to the Petitioner
14.09.2026	Ministry of Power officially approved the sale and transfer of the project to successful bidder
09.10.2026	Extension of LoI issued by BPC
12.10.2026	Share Purchase Agreement (SPA) and Transmission Service Agreement (TSA) executed, and SPV transferred to POWERGRID

23. Further, Clause 2.15.4 of the RfP required that, upon completion of the acquisition of the Petitioner by the Successful Bidder, the Petitioner, as the duly appointed TSP, is required to

apply to the Appropriate Commission for grant of a Transmission Licence within five (5) working days.

24. The present Petition is therefore being filed strictly in compliance with the above contractual and statutory requirement.

Re. Compliance with CERC Transmission Licence Regulations, 2024

25. Regulation 5 of the Central Electricity Regulatory Commission (Procedure, Terms and Conditions for grant of Transmission Licence and other related matters) Regulations, 2024 requires that a petition for grant of transmission licence be made in Form-I and be accompanied by the prescribed affidavit and documents. The present Petition has been filed strictly in the said format.

    A true copy of the duly completed Form-I, together with all enclosures thereto, is annexed herewith and marked as **Annexure-13**.

26. The Petitioner shall publish a notice of its petition for grant of licence in Form-II of the Transmission Licence Regulations in atleast two leading daily digital newspapers, one in English language and another in the Indian language of the State or Union Territory, where an element of the project or concerned transmission line is situated or proposed to be situated, within 03 working days of filing the petition, inviting comments from the general public in compliance with Regulations 5(5) of the said Regulations.

27. In accordance with Section 5(3) of the License Regulations, a copy of the present Petition is being simultaneously served upon CTUIL, being the nodal agency, for its comments and recommendations. A copy of the present petition is also being served upon PFCCL, the Bid Process Coordinator, to enable it to place on record its confirmation in respect of the Tariff Based Competitive Bidding process undertaken for the Project.

28. The Petition along with annexures and enclosures has been hosted on the website of the Applicant i.e. www.powergrid.in/subsidiaries to facilitate access to the Petition by any person through the internet.

29. The Applicant/Petitioner shall publish the requisite Notices in the newspapers as per the Transmission Licence Regulations and after publication of the same, the Applicant/Petitioner shall place a copy of the said publications before this Hon'ble Commission.

30. In view of the above, it is humbly submitted that the Applicant/Petitioner fulfils the eligibility criteria for grant of transmission licence as stipulated in Section 14 and 15 of the Act and the Transmission License Regulations and therefore, this Hon'ble Commission may kindly grant the transmission license, as prayed for.

31. The present Petition is filed bona fide and in the interest of justice.

III. LIMITATION

32. The Petitioner declares that the present petition is within the applicable period of limitation.

IV. PRAYER

33. The Applicant/Petitioner hereby humbly prays the Hon'ble Commission to:

(a) Grant a Transmission Licence under Sections 14 and 15 of the Electricity Act, 2003 read with read with Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 in favour of the Petitioner, Jam Khambhaliya REZ Transmission Limited, to Build, Own, Operate and Transfer of the "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)", being the Inter-State transmission scheme; and

(b) Direct issuance of the Transmission Licence in the prescribed Form-III of the Central Electricity Regulatory Commission (Procedure, Terms and Conditions for grant of Transmission Licence and other related matters) Regulations, 2024, subject to the general and specific conditions contained therein; and/or

(c) Condone any minor, inadvertent or procedural defects or omissions, if any, in the present Petition and permit the Applicant to place on record such additional documents, information or clarifications as this Hon'ble Commission may require from time to time in the interest of justice; and

(d) Pass such other order / orders, as may be deemed fit and proper in the facts and circumstances of the case.

V. LIST OF ENCLOSURES

34. As per Index.

VI. PROOF OF PAYMENT OF FEES FOR FILING OF THE PETITION

35. Details provided in **Form-I** attached to this petition.

Anand Kumar Saraph
Digitally signed by Anand Kumar Saraph
Date: 2026.10.16 19:30:44 +05'30'

PETITIONER

DATE: 16.10.2026

PLACE: Ahmedabad

DECLARATION

The Petitioner above named hereby solemnly declare(s) that nothing material has been concealed or suppressed and further declare(s) that the enclosures and typed set of material papers relied upon and filed herewith are true copies of the original(s)/fair representation of the originals/true translation thereof.

Verified at Ahmedabad on this 16th day of Octomber, 2026.

Anand Kumar Saraph
Digitally signed by Anand Kumar Saraph
Date: 2026.10.16 19:31:05 +05'30'

PETITIONER

IN-GJ88980425583919Y

INDIA NON JUDICIAL
Government of Gujarat

सत्यमेव जयते

Rs. 50

Certificate of Stamp Duty

Certificate No.	:	**IN-GJ88980425583919Y**
Certificate Issued Date	:	16-Oct-2026 03:50 PM
Account Reference	:	IMPACC (FI)/ gjelimp10/ SANAND/ GJ-AH
Unique Doc. Reference	:	SUBIN-GJGJELIMP1064362744996832Y
Purchased by	:	JAM KHAMBHALIYA REZ TRANSMISSION LIMITED
Description of Document	:	Article 4 Affidavit
Description	:	FOR AFFIDAVIT
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	JAM KHAMBHALIYA REZ TRANSMISSION LIMITED
Second Party	:	Not Applicable
Stamp Duty Paid By	:	JAM KHAMBHALIYA REZ TRANSMISSION LIMITED
Stamp Duty Amount(Rs.)	:	50 (Fifty only)

NOTARY * GOVT. OF GUJARAT (INDIA) D. B. BARAD TA. SANAND DIST. AHMEDABAD

SERIAL No. 1006 /2026
PAGE No. 147
RECEIPT No. 5

ELPL ELPL ELPL ELPL ELPL SANAND

D. B. BARAD
NOTARY
GOVT. OF GUJARAT (INDIA)

16 OCT 2026

FH 0024664871

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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.





NOTICE

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- Any alteration to this certificate renders it invalid and would constitute a criminal offence.
- Kindly contact Stock Holding Branch / Centre in case of discrepancy.
- **For information related to e-Stamping you may write to us on our email id estamp.ahmedabad@stockholding.com or visit our Branch/Centre.**

સૂચના

- આ ઈ-સ્ટેમ્પ પ્રમાણપત્રની વિગતો www.shcilestamp.com દ્વારા અથવા સ્ટોક હોલ્ડિંગની "ઈસ્ટેમ્પિંગ" મોબાઈલ એપ્લિકેશન અથવા સ્ટોક હોલ્ડિંગની શાખા / કેન્દ્ર (જેની વિગતો www.stockholding.com પર ઉપલબ્ધ છે) પર જઈ ને ચકાસી શકાય છે.
- આ પ્રમાણપત્રમાં કરેલ કોઈપણ ફેરફાર અમાન્ય છે અને તે ફોજદારી ગુનો બને છે.
- આ ઈ-સ્ટેમ્પ પ્રમાણપત્રમાં કોઈપણ વિસંગતતા જણાય તો સ્ટોક હોલ્ડિંગની શાખા / કેન્દ્ર પર સંપર્ક કરવો.
- ઈ-સ્ટેમ્પિંગ સંબધિત જાણકારી માટે અમને estamp.ahmedabad@stockholding.com પર ઈ-મેઈલ કરવો અથવા અમારી શાખા / કેન્દ્ર ની મુલાકાત લેવી.

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

PETITION NO.:.....

IN THE MATTER OF

Petition under Section 14 & 15 of the Electricity Act, 2003 read with Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 with respect to Transmission License to Jam Khambhaliya REZ Transmission Limited (a 100% wholly owned subsidiary of Power Grid Corporation of India Limited)

Jam Khambhaliya REZ Transmission Limited .....**PETITIONER**

VERSUS

Central Transmission Utility of India Limited, & Ors. ....**RESPONDENT(S)**

AFFIDAVIT

I, Shri Anand Kumar Saraph, son of Shri Hari Shankar Soni, aged 55 years, Project In-Charge, presently residing at A-1402, Indraprastha Shivanta, S P Ring Road, Near D Mart, Ambli, Ahmedabad, Gujarat - 380058 do hereby solemnly affirm and state as follows:

1. That the deponent is the Authorised Signatory of the Petitioner Company in the above matter, and is well conversant with the facts and the circumstances of the case and therefore competent to swear this affidavit.

2. That the accompanying Petition under Section 14 & 15 of the Electricity Act, 2003, has been filed by my authorised representative under my instruction and the contents of the same are true and correct to the best of my knowledge and belief.

3. That the contents of Para Nos. 1 to 35 of the facts as mentioned in the Petition are true and correct based on my personal knowledge, belief and records maintained in the office and the contents of Para Nos. 1 to 35 of the Petition are believed to be true on the basis of the legal advice received.

4. That the annexures annexed to the Petition are correct and true copies of the respective originals.

5. That the Deponent has not filed any other Petition or Appeal before any other forum or court of law with respect to the subject matter of the dispute

SOLEMNLY AFFIRMED BEFORE ME

Anand Kumar Saraph Digitally signed by Anand Kumar Saraph Date: 2026.10.16 19:31:35 +05'30'

Anand Kumar Saraph
Project Incharge
Jam Khambaliya REZ Transmission Ltd.
DEPONENT

VERIFICATION:

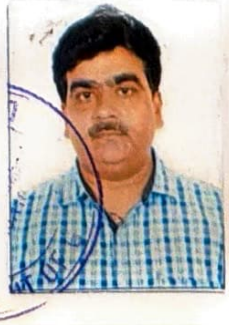
D. B. BARAD NOTARY GOVT. OF GUJARAT

16 OCT 2026

Verified at Ahmedabad on this 16th day of October, 2026 that the contents of my above noted affidavit are true and correct to my knowledge and no part of it is false and nothing material has been concealed therefrom

NOTARY D.B. BARAD Ta.Sanand Dist.Ahmedabad Reg.No.1109/10 GOVERNMENT OF GUJARAT (INDIA)

NOTARY D. B. BARAD TA. SANAND DIST. AHMEDABAD REG.NO. 1109/2010 GOVT. OF GUJARAT (INDIA)



Anand Kumar Saraph
DEPONENT
Jam Khambaliya REZ Transmission Ltd.

भारत सरकार
Government of India

आधार

भारतीय विशिष्ट पहचान प्राधिकरण
Unique Identification Authority of India

नामांकन क्रम/ Enrolment No.: 0000/00272/54028

To
आनँद कुमार सरफ
Anand Kumar Saraph
Flat No. A-1402, 14th Floor, Indraprastha Shivanta,
S P Ring Road,,
Opp. Iscon Platinum, Near Bopal Circle,
Ambli,
VTC: Daskroi,
PO: Bopal,
District: Ahmedabad,
State: Gujarat,
PIN Code: 380058
Mobile: 9501102099

Signature Not Verified
Digitally signed by Unique Identification Authority of India
Date: 2026.01.29 21:36:46 IST

आपका आधार क्रमांक / Your Aadhaar No. :
7202 3930 5982
VID : 9190 7561 9458 1549

मेरा आधार, मेरी पहचान

Government of India

AADHAAR

सूचना / INFORMATION

- आधार पहचान का प्रमाण है, नागरिकता या जन्मतिथि का नहीं। जन्मतिथि आधार नंबर धारक द्वारा प्रस्तुत सूचना और विनियमों में विनिर्दिष्ट जन्मतिथि के प्रमाण के दस्तावेज पर आधारित है।
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भारत सरकार
Government of India

आधार

Aadhaar no. issued: 28/06/2013



आनँद कुमार सरफ
Anand Kumar Saraph
जन्म तिथि/DOB: 21/04/1971
पुरुष/ MALE

आधार पहचान का प्रमाण है, नागरिकता या जन्मतिथि का नहीं ।
इसका उपयोग सत्यापन (ऑनलाइन प्रमाणीकरण, या क्यूआर कोड/ ऑफलाइन एक्सएमएल की स्कैनिंग) के साथ किया जाना चाहिए ।
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भारतीय विशिष्ट पहचान प्राधिकरण
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AADHAAR

Details as on: 23/04/2026

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Anand Kumar Saraph
Project Incharge
Jam Khambaliya REZ Transmission Ltd.

Annexure-I



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 सैंतीसवी बैठक का कार्यवृत्त ।

Subject: Minutes of the 37th Meeting of the National Committee on Transmission (NCT)-reg.

महोदया (Madam) / महोदय (Sir),

The 37th meeting of the National Committee on Transmission (NCT) was held on 19th January, 2026 at New Delhi. The minutes of the meeting are enclosed herewith.

भवदीय / Yours faithfully

(बी.एस.बैरवा / B.S. Bairwa)
मुख्य अभियन्ता एवं सदस्य सचिव,(एन.सी.टी.)/
Chief Engineer & Member Secretary (NCT)

सेवा भवन, आर. के. पुरम-I, नई दिल्ली-110066 टेलीफैक्स: 011-26732325 ईमेल: cea-pspa2@gov.in वेबसाइट: www.cea.nic.in
Sewa Bhawan, R.K Puram-I, New Delhi-110066 Telefax: 011-26732325 email: cea-pspa2@gov.in Website: www.cea.nic.in

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.	Additional Secretary (Trans), Ministry of Power Shram Shakti Bhawan, New Delhi-110001.
5.	Sh, Abhay Bakre, Mission Director, MNRE Atal Akshay Urja Bhawan Opposite CGO Complex gate No. 2, Lodhi Road, New Delhi – 110003	6.	Chief Operating Officer, CTUIL, Floors Nos. 5-10, Tower 1, Plot Nos. 16, IRCON International Tower, Institutional Area, Sector 32, Gurugram, Haryana - 122001.
7.	Sh. Rajnath Ram, Adviser (Energy), NITI Aayog, Parliament Street, New Delhi – 110 001.	8.	CMD, Grid Controller of India, B-9 (1st Floor), Qutub Institutional Area, Katwaria Sarai, New Delhi – 110016
9.	Sh. Abhay Choudhary Expert Member	10.	Managing Director, Jammu Power Distribution Corporation Limited (JPDCL) Gladni Narwal, Jammu, Jammu & Kashmir, India - 180006
11.	Sh. S.R Narasimhan Expert Member	12.	Shri. Shivdas.S, Director (Transmission & System Operation) Vydyuthi Bhavanam, Pattom, Thiruvananthapuram, Kerala-695004
13.	Sh. Sabyasachi Roy, Director (Operations), WBSETCL	14.	Chairperson, North Eastern Region Power Committee Hon'ble Minister of Power, Govt. of Assam, Guwahati – 781 006
15.	Chairperson, Western Region Power Committee 2nd Floor, Vidyut Seva Bhavan, P.O. Sunder Nagar, Danganiya, Raipur: 492 013		

Special Invitee

i) Chief Engineer (PCD), CEA
ii) CEO, RECPDCL
iii) CEO, PFCCL

Table of Minutes

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2.7.5. Further, in the subject scheme 4x1500 MVA, 765/400kV & 5x500 MVA, 400/220kV ICTs are identified at Krishnagiri PS considering 50% injection at 200kV level and 50% injection at 400kV level as standard practice. However, presently CTUIL has received connectivity applications of about 2900 MW at 220kV level. Accordingly, augmentation of 400/220kV ICTs are required at Krishnagiri PS. Therefore, it is proposed to consider augmentation of additional 5x500 MVA, 400/220kV ICTs (6^{th} -10^{th}) at Krishnagiri PS.

2.7.6. GRID-INDIA stated that as there is significant change in line lengths w.r.t. earlier approved scheme, the power flow pattern is expected to change. Also, with the previous line lengths, the angular separation between 765 Kurnool-V and Sagar buses was exceeding 25 deg under N-1 contingency. With the increase in line length from 240 to 345 km, the angular separation under N-1 may increase further.Therefore, the scheme may be reviewed holistically in view of significant change in line lengths.

2.7.7. After detailed deliberations, it was decided that the modifications in the subject scheme, "Transmission System for integration of Krishnagiri REZ Phase-I", may be reviewed again and taken up in next meeting of NCT.

3. New Transmission Schemes

3.1. Transmission system for Evacuation of Power from RE Projects for cumulative capacity of 25.5GW in Gujarat

3.1.1. Representative of CTUIL stated that transmission system for evacuation of power from RE Projects for cumulative capacity of 25.5GW in Gujarat was taken up for deliberations in the 31^{st} NCT meeting held on 14.07.2025 in the Jam Khambhaliya REZ - Phase II (5500MW), Jamnagar REZ - Phase I (1000MW), Lakadia REZ - Phase II (7500MW), Khavda REZ- Phase VI (5500MW) and Khavda REZ- Phase VII (6000MW) pockets. In that meeting, it was decided that as majority of the transmission schemes pertain to quantum beyond the potential already declared by MNRE/SECI, the schemes will be taken up for approval, only after assessment and declaration of such additional potential by MNRE.

3.1.2. Subsequently, MNRE vide letter dated 28.08.2025, declared additional potential to the tune of 69.6GW in the state of Gujarat. The potential was subsequently revised by GETCO / Govt of Gujarat to about 43GW (for planning under ISTS), vide letter dated 17.11.2025, which was shared by MNRE vide letter dated 08.12.2025 (comprising 20.2GW in Kutch area (namely Bhuj, Lakadia & Khavda); 7GW in Jamnagar, Porbandar and Dwarka areas and balance 15.74GW in Amreli, Junagarh, Rajkot, Bhavnagar areas). With the declaration of this additional potential in Gujarat, sufficient potential now exists against the above planned transmission system for 25.5GW.

3.1.3. Accordingly, the schemes were again taken up for deliberations in the 36^{th} NCT meeting held on 30.12.2025, wherein it was observed that the transmission system in Gujarat was planned considering 9.25 GW of Green Hydrogen/Green Ammonia load out of the total anticipated 35.19 GW capacity projected by MNRE by 2031, however, till date only one application of 0.575 GW from M/s L&T at Kandla Substation has been received, and

therefore MNRE needs to indicate tentative timelines for integration of about 9–10 GW of Green Hydrogen/Green Ammonia capacity in the Kandla and Mundra areas.

3.1.4. Subsequently, a meeting was held under the chairmanship of Member(PS), CEA on 05.01.2026 with GETCO and RE developers, wherein RE developers stated that they wish to continue with ISTS connectivity, due to various reasons, such as requirement of power sale to other states, waiver of transmission charges, regulatory issues, no clarity of In-STS development in the area, etc. Further, GETCO stated that they are developing the first 765kV line under Intra-state i.e., Rajkot (Saurashtra)(GETCO) – Vataman 765kV D/c line and are contemplating various challenges in implementation. Hence, they suggested to implement Kalyanpur (ISTS) – Rajkot (Saurashtra)(GETCO) 765kV D/c line under ISTS. CEA requested GETCO to prepone the commissioning of Rajkot (Saurashtra)(GETCO) S/s along with Rajkot (Saurashtra)(GETCO) – Vataman 765kV D/c line, to an early date (in 2028-29 time-frame) instead of 2029-30 timeframe, which they have last communicated to CTU, as it is impacting ISTS scheme at Kalyanpur. GETCO stated that they shall revert back on exact implementation time schedule of the above works to CEA/CTU.

3.1.5. In view of the above developments, the Transmission system for Jam Khambhaliya, Jamnagar and Lakadia area was reviewed, without considering Transmission System for Khavda Area- Phase VI (5.5GW) & Phase VII (6GW) and 9.25GW Green Hydrogen/Green Ammonia loads in Mundra & Kandla area and about 1.9GW load in Jamnagar area (for which application(s) are yet to be received). While reviewing the transmission system with above considerations, few Transmission constraints like non-compliance of reliability criteria were observed. The issue of overloading of 765/400kV ICTs at Lakadia-II (with 400kV Bus Sectionaliser open) was observed as HVDC system from Lakadia-II to Alephata (under Khavda Ph-VII) was turned off, which led to entire 7.5GW RE power from Lakadia-II 400kV level to flow to 765kV level via the available ICTs.

3.1.6. CTU proposed that in order to manage the high loading on the Vataman–Navsari (New) corridor, instead of earlier proposed Navsari (New)–Nasik 765 kV D/c line an alternate corridor from South Olpad–Nasik 765 kV D/c line (New) has been proposed. Further,to enhance short-circuit strength and MVAr support at Lakadia-II Substation two Synchronous condensers in place of the earlier proposed STATCOMs has been proposed. It was also informed that at Lakadia-II, 220 kV sectionaliser shall be kept normally open, while 400 kV and 765 kV sectionalisers be kept under normally closed condition to ensure N-1 compliance of 765/400kV, 6x1500MVA ICTS until proposed HVDC Lakadia-II to Alephata System is implemented, after which bus operation may be reviewed by the Grid Operator. With the present proposal, it was noted that Navsari (New)– Boisar-II 765 kV D/c line has emerged as the limiting constraint with N-1 loading of about 3650 MW, which shall be taken up for resolution while planning future transmission schemes of Khavda Area- Phase VI (5.5GW) & Phase VII (6GW) schemes.

3.1.7. Representative of CTUIL stated that it is planned to evacuate power from Jam Khambhaliya REZ Phase-II (5.5 GW) and Jamnagar REZ Phase-I (1 GW) through Rajkot

(Saurashtra)(GETCO) Substation, which has a scheduled completion of March 2030. Accordingly, the associated transmission system should be aligned with the commissioning timeline of Rajkot (Saurashtra)(GETCO) Substation, i.e., March 2030. Further, Lakadia-II (7.5GW) transmission scheme requires LILO of Halvad – Kandla 765kV D/c line which is presently under bidding process. M/s L&T has applied for 0.575 GW Green Hydrogen/Green Ammonia load at Kandla S/s with schedule of April 2029. Hence, it is expected that the above scheme shall be implemented by April 2029 only. In view of the same, the Lakadia-II S/s can only be implemented on or after April 2029 and a schedule of 36 months may be considered for the same. However, same may be reviewed before award based on bidding status of Kandla Green Hydrogen transmission Scheme.

3.1.8. Additional Secretary, MoP stated that Gujarat may be requested to expedite and commission the Rajkot (Saurashtra)(GETCO) S/s along with Rajkot (Saurashtra)(GETCO) -Vataman 765kV D/c line by March 2029.

3.1.9. GRID-INDIA stated that there are significant changes in the current scheme w.r.t. the earlier proposed scheme and may be discussed again with the stakeholders before final approval. GRID-INDIA also mentioned that SCR at Lakadia-II is observed to be less than 5, even after considering synchronous condensers.

3.1.10. After detailed deliberations, the following transmission schemes were recommended by NCT for implementation through TBCB mode:

Sl. No.	Name of the scheme and tentative implementation timeframe	Estimated Cost (₹ Crore)	Remarks
I.	Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW) **Implementation timeframe: 31.03.2030** ***(To be reviewed prior to award, based on the best-effort schedule received from GETCO for Rajkot (Saurashtra) substation and Rajkot (Saurashtra)(GETCO) - Vataman 765kV D/c)***	7688	under TBCB through PFCCL
II.	Transmission system for Integration of Power from RE Projects in Lakadia REZ in Gujarat-Phase II (7500MW) **Implementation timeframe: 36 Months** ***(To be reviewed prior to award, based on the bidding status of the Transmission System for supply of power to Green***	7506	under TBCB through RECPDCL

	Hydrogen/Ammonia manufacturing potential in Kandla area of Gujarat (Phase-I: 3 GW))		
III.	Common Transmission System for evacuation of power from Lakadia (Phase-II: 7.5GW), Jam Khambhaliya (Phase-II: 5.5GW) and Jamnagar (Phase-I: 1GW) **Implementation timeframe: 36 Months** ***(To be reviewed prior to award, based on the bidding status of the Transmission System for supply of power to Green Hydrogen/Ammonia manufacturing potential in Kandla area of Gujarat (Phase-I: 3 GW))***	Part A: 2252	under TBCB through: PFCCL
IV		Part B: 3839	under TBCB through: RECPDCL
V		Part C: 2763	under TBCB through: PFCCL
Total Cost		**24048**	

3.1.11. Detailed scope is as below:

I. Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)

Sl. No.	Scope of the Transmission Scheme	Capacity /km	Estimated cost (₹ Cr.)
1.	Establishment 4x1500 MVA, 765/400 kV & 10x500MVA, 400/220kV Substation near Kalyanpur (GIS) with 2x330 MVAR, 765 kV bus reactor and 2x125 MVAR, 420 kV bus reactor **Future provision (space for):** ➢ 765/400 kV, 1500MVA ICT along with bays- 2 Nos. (on Sec-II) ➢ 765 kV line bays along with	• 765/400 kV, 1500 MVA ICT – 4 Nos. (13x500 MVA single phase units including one spare ICT Unit) (3 on Sec-I & 1 on Sec-II) • 400/220kV, 500MVA ICT – 10 Nos. (5 on Sec-I & 5 on Sec-II) • 765 kV ICT bays – 4 Nos. • 400 kV ICT bays – 14 Nos. • 220kV ICT bays – 10 Nos. • 765 kV Line bays – 4 Nos. (2 on Sec-I & 2 on	7688 (Sl. 1 to 7: 7431 & Sl. 8-9: 257)

Sl. No.	Scope of the Transmission Scheme	Capacity /km	Estimated cost (₹ Cr.)
	switchable line reactors – 8 Nos. (4 Nos. on Sec-I & 4 Nos. on Sec-II) ➢ 765 kV, 330MVAr Bus Reactor along with bay: 2 Nos. (1 on Sec-I & 1 on Sec-II) ➢ 400 kV line bays along with switchable line reactors– 12 Nos. *(4 Nos. on Sec-I & 8 Nos. on Sec-II)* ➢ 420 kV, 125MVAr Bus Reactor along with bays: 2 Nos. (1 on Sec-I & 1 on Sec-II) ➢ 220 kV line bays: 3 No. on Sec-I & 3 Nos. on Section-II ➢ Establishment of 6000 MW, ± 800 kV Kalyanpur (GIS) (HVDC) [LCC] terminal station (4x1500 MW) along with associated interconnections with 400 kV HVAC Switchyard & all associated equipment (incl. filters)/bus extension, etc. (2x1500MW Poles on each 400kV bus section) ➢ ±400MVAr STATCOM with 400kV bay – 2 No. (1 on Sec-I & 1 on Sec-II)	Sec-II) • 765 kV Sectionaliser bay: 1 -set • 400 kV Sectionalization bay: 1- set • 220 kV Sectionalization bay: 1 set • 1x330 MVAr, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactors) (1 on Sec-I & 1 on Sec-II) • 765 kV Bus reactor bay – 2 Nos. • 125 MVAr, 420 kV reactor- 2 Nos. (1 on Sec-I & 1 on Sec-II) • 400 kV Reactor bay- 2 Nos. • 220kV BC Bay-2 No. • 400 kV line bay – 1 No. (for interconnection of RE Project at Sec-I) • 220kV line bays – 12 Nos. (for interconnection of RE Projects, 6 on Sec-I & 6 on Sec-II)	
2.	Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/c line	95 km	

Sl. No.	Scope of the Transmission Scheme	Capacity /km	Estimated cost (₹ Cr.)
3.	2 Nos. 765 kV line bays at Jamnagar (GIS) S/s	765 kV line bays – 2 Nos. (GIS)	
4.	Kalyanpur (GIS) – Saurashtra (near Rajkot) (GETCO) 765 kV D/c line	225km.	
5.	330MVAr Switchable line reactors on each circuit at Kalyanpur (GIS) end of Kalyanpur (GIS) – Saurashtra (near Rajkot) (GETCO) 765 kV D/c line (with NGR bypass arrangement)	• 330 MVAr, 765 kV switchable line reactor- 2 Nos. • Switching equipment for 765 kV line reactor- 2 Nos.	
6.	2 Nos. 765 kV line bays at Saurashtra (near Rajkot) (GETCO) S/s	• 765 kV line bays – 2 Nos.	
7.	Installation of Synchronous Condenser (+300/-200MVAr) (Minimum) & Short circuit contribution at PCC of 1200MVA (Minimum) at Jam Kalyanpur (GIS)– 2 Nos. Value of Inertia (MW-s) shall be defined in RfP document.	• Synchronous Condenser along with associated 400kV Bay-2 Nos. (one on each Sec-I & II)	
8.	Creation of 220kV switchyard along with Installation of 3x500MVA, 400/220kV ICTs at Jamnagar (GIS) S/s	• Creation of 220kV Bus Section-I • 220kV BC Bay – 1 No. • 400/220 kV, 500 MVA ICT – 3 Nos. (on 400kV & 220kV Sec-I) • 400 kV ICT bays – 1 No. (*2 Nos. ICTs to be terminated in 2 nos. GIS bays being implemented as part of Diameter completion at Jamnagar S/s under "Network Expansion scheme in Gujarat for drawl of*	

Sl. No.	Scope of the Transmission Scheme	Capacity /km	Estimated cost (₹ Cr.)
		about 3.6 GW load under Phase-I in Jamnagar area" scheme) • 220kV ICT bays – 3 Nos.	
9.	4 nos. 220kV line bays for RE interconnection	220kV line bays – 4 Nos.	

Note:

- *TSP of Jamnagar S/s shall provide space for above scope of work at Sl. 3, 8 & 9 on free of cost basis*
- *GETCO shall provide space for above scope of work at Sl. 6 on free of cost basis*
- *Bay(s) required for completion of diameter (GIS) in one-and-half breaker scheme shall also be executed by the TSP.*
- *Above Syncons (at Sl. 7) shall be considered as 'transmission asset' similar to STATCOM & SVC for its tariff mechanism.*

II. Transmission system for Integration of Power from RE Projects in Lakadia REZ in Gujarat-Phase II (7500MW)

Sl. No.	Scope of the Transmission Scheme	Capacity /km	Estimated cost (₹ Cr.)
1.	**Establishment of 765/400 kV, 6x1500MVA & 10x500MVA, 400/220kV Lakadia-II (Near Chitrod)** with 2x330 MVAR 765kV bus reactor and 2x125 MVAR 400kV bus reactor. *[765kV, 400kV & 220kV levels to be established in two sections with Sectionaliser arrangement.* ***The 220kV Sectionaliser shall be kept normally open and may be closed under contingency condition. The 400kV and 765kV Sectionaliser shall be kept normally closed****.* ***The bus operation may be reviewed after proposed HVDC implementation as per requirement of Grid***	• 765/400 kV, 1500 MVA ICT – 6 Nos. (19x500 MVA single phase units including one spare ICT Unit) • 400/220 kV ICTs - 10 Nos. (5 on Sec-I & 5 on Sec-II) • 765 kV ICT bays – 6 Nos. • 400 kV ICT bays – 16 Nos. • 220kV ICT bays – 10 Nos. • 1x330 MVAr, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactor) (1 on Sec-I & 1 on Sec-II)	7506

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असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

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विद्युत मंत्रालय

अधिसूचना

नई दिल्ली, 11 फरवरी, 2026

का.आ. 725(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 शक्तियों का प्रयोग करते हुए केंद्र सरकार ने 37वीं राष्ट्रीय पारेषण समिति की बैठक की सिफारिशों पर, संबंधित बोली प्रक्रिया समन्वयक-(बीपीसी) के विवरण सहित टीबीसीबी मोड के अंतर्गत निम्नलिखित पारेषण स्कीमों को एतदद्वारा अधिसूचित करती है: -

1. भड़ला-III, रामगढ़ पीएस और कानपुर में संवर्धन। (पीजी)

संभावित कार्यान्वयन समय सीमा :दिनांक 20.01.2029

बीपीसी :आरईसी पावर डेवलपमेंट एंड कंसल्टेंसी लिमिटेड

कार्यक्षेत्र:

क्र सं.	पारेषण स्कीम का कार्यक्षेत्र	घटक विवरण
1.	765/400/220 केवी भड़ला-III पीएस में 400/220 केवी, 5x500 एमवीए (छठे से 10वें) आईसीटी का	• 500 एमवीए, 400/220 केवी आईसीटी - 5 • (220 केवी सेक्शन-2 (छठे से 9वें) में 4 आईसीटी

Scope:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1	Establishment of 3x1500 MVA, 765/400 kV and 7x500 MVA, 400/220kV Ananthapuram-III Pooling Station near Urvakonda / Beluguppa / Kalyandurg areas in Anantapur district along with 2x330 MVAr (765 kV) bus reactors at Ananthapuram-III PS with provision of two (2) sections of 4500 MVA each at 400kV level Future Space Provisions: • 765/400kV, 1500 MVA, ICTs – 3 Nos. • 765kV ICT bays – 3 Nos. • 400kV ICT bays – 3 Nos. • 400/220kV, 500 MVA, ICTs – 7 Nos. • 400kV ICT bays – 7 Nos. • 220kV ICT bays – 7 Nos. • 765kV line bays – 12 Nos. (with provision for SLR) • 400kV line bays – 11 Nos. (with provision for SLR) • 220kV line bays – 15 Nos. • 220kV Bus Sectionalizer : 2 sets • 220 kV Bus Coupler (BC) Bay – 2 nos. • 220 kV Transfer Bus Coupler (TBC) Bay – 2 nos. • 400kV Bus Sectionalizer : 1 set	• 765/400kV, 1500 MVA, ICTs – 3 Nos. (10x500 MVA incl. 1 spare unit) • 765kV ICT bays – 3 Nos. • 400kV ICT bays – 3 Nos. • 765kV line bays – 2 Nos. (at Ananthapuram-III PS for termination of Ananthapuram-III – Krishnagiri 765kV D/c line) • 765 kV, 330 MVAr Bus Reactor – 2 Nos. (7x110 MVAr inc. 1 switchable spare unit for both bus reactor and line reactor) • 765 kV Bus Reactor bays – 2 Nos. • 400/220kV, 500 MVA, ICTs – 7 Nos. • 400kV ICT bays – 7 Nos. • 220kV ICT bays – 7 Nos. • 220kV line bays – 10 Nos. • 220kV Bus Sectionalizer: 1 set • 220 kV Bus Coupler (BC) Bay – 2 Nos. 220 kV Transfer Bus Coupler (TBC) Bay – 2 Nos.
2	± 300 MVAr STATCOM at Ananthapuram-III PS	• 400kV bay – 1 no. • ± 300 MVAr STATCOM – 1 set
3	Ananthapuram-III – Krishnagiri 765 kV D/c line with 240 MVAr SLR (convertible) at Ananthapuram-III end on both circuits	~ 140 km • 765 kV line bays – 2 Nos. (at Krishnagiri) • 765 kV, 240 MVAr SLR at Ananthapuram-III PS – 2 Nos. (7x80 MVAr inc. 1 switchable spare unit) Switching Equipment for 765 kV SLR at Ananthapuram-III PS – 2 Nos.

3. Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)

Tentative implementation timeframe: 31.03.2030

BPC: Power Finance Corporation Limited (PFC)

Scope:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	Establishment 4x1500 MVA, 765/400 kV & 10x500MVA, 400/220kV Substation near Kalyanpur (GIS) with 2x330 MVAR, 765 kV bus reactor and 2x125 MVAR, 420 kV bus reactor **Future provision (space for):** ➢ 765/400 kV, 1500MVA ICT along with bays- 2 Nos. (on Sec-II) ➢ 765 kV line bays along with switchable line reactors – 8 Nos. (4 Nos. on Sec-I & 4 Nos. on Sec-II) ➢ 765 kV, 330MVAr Bus Reactor	• 765/400 kV, 1500 MVA ICT – 4 Nos. (13x500 MVA single phase units including one spare ICT Unit) (3 on Sec-I & 1 on Sec-II) • 400/220kV, 500MVA ICT – 10 Nos. (5 on Sec-I & 5 on Sec-II) • 765 kV ICT bays – 4 Nos. • 400 kV ICT bays – 14 Nos. • 220kV ICT bays – 10 Nos. • 765 kV Line bays – 4 Nos. (2 on Sec-I & 2 on

	along with bay: 2 Nos. (1 on Sec-I & 1 on Sec-II) ➢ 400 kV line bays along with switchable line reactors– 12 Nos. *(4 Nos. on Sec-I & 8 Nos. on Sec-II)* ➢ 420 kV, 125MVAr Bus Reactor along with bays: 2 Nos. (1 on Sec-I & 1 on Sec-II) ➢ 220 kV line bays: 3 No. on Sec-I & 3 Nos. on Section-II ➢ Establishment of 6000 MW, ± 800 kV Kalyanpur (GIS) (HVDC) [LCC] terminal station (4x1500 MW) along with associated interconnections with 400 kV HVAC Switchyard & all associated equipment (incl. filters)/bus extension, etc. (2x1500MW Poles on each 400kV bus section) ➢ ±400MVAr STATCOM with 400kV bay – 2 No. (1 on Sec-I & 1 on Sec-II)	Sec-II) • 765 kV Sectionaliser bay: 1 -set • 400 kV Sectionalization bay: 1- set • 220 kV Sectionalization bay: 1 set • 1x330 MVAr, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactors) (1 on Sec-I & 1 on Sec-II) • 765 kV Bus reactor bay – 2 Nos. • 125 MVAr, 420 kV reactor- 2 Nos. (1 on Sec-I & 1 on Sec-II) • 400 kV Reactor bay- 2 Nos. • 220kV BC Bay-2 No. • 400 kV line bay – 1 No. (for interconnection of RE Project at Sec-I) • 220kV line bays – 12 Nos. (for interconnection of RE Projects, 6 on Sec-I & 6 on Sec-II)
2.	Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/c line	95 km
3.	2 Nos. 765 kV line bays at Jamnagar (GIS) S/s	765 kV line bays – 2 Nos. (GIS)
4.	Kalyanpur (GIS) – Saurashtra (near Rajkot) (GETCO) 765 kV D/c line	225km.
5.	330MVAr Switchable line reactors on each circuit at Kalyanpur (GIS) end of Kalyanpur (GIS) – Saurashtra (near Rajkot) (GETCO) 765 kV D/c line (with NGR bypass arrangement)	• 330 MVAr, 765 kV switchable line reactor- 2 Nos. • Switching equipment for 765 kV line reactor- 2 Nos.
6.	2 Nos. 765 kV line bays at Saurashtra (near Rajkot) (GETCO) S/s	• 765 kV line bays – 2 Nos.
7.	Installation of Synchronous Condenser (+300/-200MVAr) (Minimum) & Short circuit contribution at PCC of 1200MVA (Minimum) at Kalyanpur (GIS)– 2 Nos. Value of Inertia (MW-s) shall be defined in RfP document.	• Synchronous Condenser along with associated 400kV Bay-2 Nos. (one on each Sec-I & II)
8.	Creation of 220kV switchyard along with Installation of 3x500MVA, 400/220kV ICTs at Jamnagar (GIS) S/s	• Creation of 220kV Bus Section-I • 220kV BC Bay – 1 No. • 400/220 kV, 500 MVA ICT – 3 Nos. (on 400kV & 220kV Sec-I) • 400 kV ICT bays – 1 No. (*2 Nos. ICTs to be terminated in 2 nos. GIS bays being implemented as part of Diameter completion at Jamnagar S/s under "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I in Jamnagar area" scheme)* • 220kV ICT bays – 3 Nos.
9.	4 nos. 220kV line bays for RE interconnection	220kV line bays – 4 Nos.

Note:

➢ *TSP of Jamnagar S/s shall provide space for above scope of work at Sl. 3, 8 & 9 on free of cost*

basis

- *GETCO shall provide space for above scope of work at Sl. 6 on free of cost basis*
- *Bay(s) required for completion of diameter (GIS) in one-and-half breaker scheme shall also be executed by the TSP.*
- *Above Syncons (at Sl. 7) shall be considered as 'transmission asset' similar to STATCOM & SVC for its tariff mechanism.*

4. . Transmission system for Integration of Power from RE Projects in Lakadia REZ in Gujarat-Phase II (7500MW)

Tentative implementation timeframe: 36 Months

BPC: REC Power Development and Consultancy Limited

Scope:

Sl. No.	Scope of the Transmission Scheme	Capacity /km
1.	**Establishment of 765/400 kV, 6x1500MVA & 10x500MVA, 400/220kV Lakadia-II (Near Chitrod)** with 2x330 MVAR 765kV bus reactor and 2x125 MVAR 400kV bus reactor. *[765kV, 400kV & 220kV levels to be established in two sections with Sectionaliser arrangement.* ***The 220kV Sectionaliser shall be kept normally open and may be closed under contingency condition. The 400kV and 765kV Sectionaliser shall be kept normally closed. The bus operation may be reviewed after proposed HVDC implementation as per requirement of Grid operator.*** *(3x1500MVA 765/400kV ICTs, 5x500MVA 400/220kV ICTs, 1x330MVA 765kV BR & 1x125MVAr 420kV BR shall be on Sec-I & 3x1500MVA 765/400kV ICTs, 5x500MVA 400/220kV ICTs, 1x330MVA 765kV BR & 1x125MVAr 420kV BR shall be on Sec-II)]* **Future provision (space for):** ➢ 765 kV line bays along with switchable line reactors – 6 Nos. (2 Nos. on Sec-I & 4 Nos. on Sec-II) ➢ 765 kV Bus Reactor along with bay: 2 Nos. (1 on Sec-I & 1 on Sec-II) ➢ 400 kV line bays along with switchable line reactors– 7 Nos. *(3 on Sec-I & 4 on Sec-II) + 4 Nos. 400kV bays (2 nos. on each section) for HVDC Interconnection* ➢ 420 kV, 125MVAr Bus Reactor along with bays: 2 Nos. (1 on Sec-I & 1 on Sec-II) ➢ 220 kV line bays: 2 No. on Sec-I & 1 Nos. on Section-II ➢ Establishment of 6000 MW, ± 800 kV Lakadia-II (HVDC) [LCC] terminal station (4x1500 MW) along with associated interconnections with 400 kV HVAC Switchyard & all associated equipment (incl. filters)/bus extension, etc. (2x1500MW poles on each 400kV section)	• 765/400 kV, 1500 MVA ICT – 6 Nos. (19x500 MVA single phase units including one spare ICT Unit) • 400/220 kV ICTs - 10 Nos. (5 on Sec-I & 5 on Sec-II) • 765 kV ICT bays – 6 Nos. • 400 kV ICT bays – 16 Nos. • 220kV ICT bays – 10 Nos. • 1x330 MVAr, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactor) (1 on Sec-I & 1 on Sec-II) • 765 kV Bus reactor bay – 2 Nos. • 765kV line bays: 8 nos. (4 Nos. on Sec-I (2 for Halvad D/c & 2 for Ahmedabad D/c) and 4 Nos. on Sec-II (2 for Kandla D/c and 2 for Vataman)) • 765 kV Sectionaliser bay: 1 -set • 400 kV Sectionaliser bay: 1- set • 220 kV Sectionaliser bay: 1- set • 220kV BC– 2 No. • 220kV TBC – 2 No. • 125 MVAr, 420 kV reactor- 2 Nos. (1 on Sec-I & 1 on Sec-II) • 400 kV Reactor bay- 2 Nos. • 400 kV line bays - 3 Nos. (2 nos. on Section-I & 1 No. on Sec-II for interconnection of RE Projects) • 220 kV line bays - 15 Nos. (7 nos. on Sec-I & 8 nos. on Sec-II for interconnection of RE Projects)

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 POWER FROM RE PROJECTS IN JAM KHAMBHALIYA REZ IN GUJARAT - PHASE II (5500MW) AND JAMNAGAR PHASE-I (1000 MW)

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

March 12, 2026

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 Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)" is issued by PFC Consulting Limited.

This RFP document is issued to -

M/s. _____

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

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-19022026-270309 dated 12.02.2026 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 Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"** 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 Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"** (hereinafter referred to as 'Project') on build, own, operate & transfer basis and to provide transmission service:

S. No	Name of Transmission Element	Scheduled COD in months from Effective Date
1.	Establishment 4x1500 MVA, 765/400 kV and 10x500 MVA, 400/220kV Substation near Kalyanpur (GIS) with 2x330 MVAr, 765 kV bus reactor and 2x125 MVAr, 420 kV bus reactor • 765/400 kV, 1500 MVA ICT – 4 Nos. (13x500 MVA single phase units including one spare ICT Unit) (3 on Sec-I and 1 on Sec-II) • 400/220 kV, 500 MVA ICT – 10 Nos. (5 on Sec-I and 5 on Sec-II) • 765 kV ICT bays – 4 Nos. • 400 kV ICT bays – 14 Nos. • 220 kV ICT bays – 10 Nos. • 765 kV Line bays – 4 Nos. (2 on Sec-I and 2 on Sec-II) • 765 kV Sectionalisation bay: 1 -set • 400 kV Sectionalisation bay: 1- set • 220 kV Sectionalisation bay: 1 set • 1x330 MVAr, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactors) (1 on Sec-I and 1 on Sec-II) • 765 kV Bus reactor bay – 2 Nos. • 125 MVAr, 420 kV bus reactor- 2 Nos. (1 on Sec-I and 1 on Sec-II) • 400 kV bus reactor bay- 2 Nos. • 220 kV BC Bay-2 Nos. • 400 kV line bay – 1 No. (for interconnection of RE Project at Sec-I)	31.03.2030

S. No	Name of Transmission Element	Scheduled COD in months from Effective Date
	• 220 kV line bays – 12 Nos. (for interconnection of RE Projects, 6 on Sec-I and 6 on Sec-II) **Future provision (space for):** • 765/400 kV, 1500 MVA ICT along with bays- 2 Nos. (on Sec-II) • 765 kV line bays along with switchable line reactors – 8 Nos. (4 Nos. on Sec-I and 4 Nos. on Sec-II) • 765 kV, 330 MVAr Bus Reactor along with bay: 2 Nos. (1 on Sec-I and 1 on Sec-II) • 400 kV line bays along with switchable line reactors– 12 Nos. (4 Nos. on Sec-I and 8 Nos. on Sec-II) • 420 kV, 125 MVAr Bus Reactor along with bays: 2 Nos. (1 on Sec-I and 1 on Sec-II) • 220 kV line bays: 3 Nos. on Sec-I and 3 Nos. on Section-II • Establishment of 6000 MW, ± 800 kV Kalyanpur (GIS) (HVDC) [LCC] terminal station (4x1500 MW) along with associated interconnections with 400 kV HVAC Switchyard and all associated equipment (incl. filters)/bus extension, etc. (2x1500 MW Poles on each 400 kV bus section) • ±400 MVAr STATCOM with 400 kV bay – 2 Nos. (1 on Sec-I and 1 on Sec-II)	
2.	Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/C line	
3.	2 Nos. 765 kV line bays at Jamnagar (GIS) S/s • 765 kV line bays- 2 Nos. (GIS)	
4.	Kalyanpur (GIS) – Saurashtra (near Rajkot) (GETCO) 765 kV D/C line	
5.	330 MVAr Switchable line reactors on each circuit at Kalyanpur (GIS) end of Kalyanpur (GIS) – Saurashtra (near Rajkot) (GETCO) 765 kV D/C line (with NGR bypass arrangement) • 330 MVAr, 765 kV switchable line reactor- 2 Nos. • Switching equipment for 765 kV line reactor- 2 Nos.	
6.	2 Nos. 765 kV line bays at Saurashtra (near Rajkot) (GETCO) S/s • 765 kV line bays – 2 Nos.	
7.	Installation of Synchronous Condenser (+300/-200 MVAr) (Minimum) and Short circuit contribution at PCC of 1200 MVA (Minimum) at Kalyanpur (GIS)– 2 Nos. Value of Inertia (Minimum) shall be 3000 MW-s • Synchronous Condenser along with associated 400 kV bay-2 Nos. (one on each Sec-I and II)	
8.	Creation of 220 kV switchyard along with Installation of 3x500 MVA, 400/220 kV ICTs at Jamnagar (GIS) S/s • Creation of 220 kV Bus Section-I • 220 kV BC Bay – 1 No. • 400/220 kV, 500 MVA ICT – 3 Nos. (on 400 kV and 220 kV Sec-I) • 400 kV ICT bays – 1 No. (*2 Nos. ICTs to be terminated in 2 nos. GIS bays being implemented as part of Diameter completion at Jamnagar S/s under "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I in Jamnagar area" scheme)* • 220 kV ICT bays – 3 Nos.	
9.	4 Nos. 220 kV line bays for RE interconnection at Jamnagar (GIS) S/s • 220 kV line bays – 4 Nos.	

S. No	Name of Transmission Element	Scheduled COD in months from Effective Date

Notes:

i. TSP of Jamnagar S/s shall provide space for above scope of work at Sl. 3, 8 and 9 on free of cost basis

ii. GETCO shall provide space for above scope of work at Sl. 6 on free of cost basis

iii. Bay(s) required for completion of diameter (GIS) in one-and-half breaker scheme shall also be executed by the TSP.

iv. *Above Syncons (at Sl. 7) shall be considered as 'transmission asset' similar to STATCOM and SVC for its tariff mechanism.*

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 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 (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 (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 23443912, 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**:**

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

latest by one working day prior to bid submission date. 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 **March 12, 2026 to May 14, 2026, 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 May 15, 2026**. 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. + 91-11-23443912
Fax + 91-11-23443990
Email: pfccl.itp@pfcindia.com

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.

Tel. + 91 11 23443912
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 (UNDER INCORPORATION)** from PFC Consulting Limited, who shall sell to the Selected Bidder, the equity shareholding of **SPV (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 (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 (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 (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.

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 (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.

पीएफसी कन्सल्टिंग लिमिटेड

(पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी)

पंजीकृत कार्यालय: प्रथम तल, कोर्पोरेट 1 कार्यालय, न्यू एनर्जी, नई दिल्ली-110001, भारत फैक्स नं. 011-23443990

वैश्विक आमंत्रण (केवल ई-निविदा के माध्यम से)

अंतर-राज्यीय पारेषण परियोजनाओं के लिए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर ट्रांसमिशन सेवा प्रदाता के चयन हेतु

पीएफसी कन्सल्टिंग लिमिटेड, पावर फाइनेंस कॉरपोरेशन लिमिटेड (भारत सरकार का एक उपक्रम) के पूर्ण स्वामित्व वाली सहायक कम्पनी "प्रस्ताव हेतु अनुरोध" (आरएफपी) के एकल चरण दो लिफाफा प्रक्रिया का पालन करते हुए निर्माण, स्वामित्व, प्रचालन और स्थानांतरण (बूट) आधार पर पारेषण परियोजनाओं की स्थापना के लिए प्रस्ताव आमंत्रित करता है।

इच्छुक निविदादाता वेबसाइट https://www.mstcecommerce.com एवं https://www.pfcclindia.com पर उपलब्ध आरएफपी अधिसूचना और आरएफपी दस्तावेजों का अवलोकन कर सकते हैं।

निविदादाता अ-प्रतिदेय शुल्क रु. 5,00,000/- या यूएसडी 7,000 प्लस लागू जीएसटी /18 प्रतिशत का भुगतान करके आरएफपी दस्तावेज 12.03.2026 से निम्नलिखित परियोजना के लिए निविदा जमा तिथि से एक कार्यदिवस पूर्व तक 10:30 बजे (आईएसटी) से 16:00 बजे (आईएसटी) के बीच सभी कार्यदिवसों में 9वां तल, विंग-ए, स्टेट्समैन हाउस, कनॉट प्लेस, नई दिल्ली-110001, फोन: 91.11.23443996; फैक्स: 91.11.23443990; ई-मेल: pfcl.itp@pfcindia.com से प्राप्त कर सकते हैं। आरएफपी दस्तावेज https://www.mstcecommerce.com एवं https://www.pfcclindia.com से भी डाउनलोड किए जा सकते हैं, यद्यपि ऐसे मामले में इच्छुक पार्टियां आरएफपी के उत्तर जमा करते समय अलग से अ-प्रतिदेय शुल्क रु. 5,00,000/- या यूएसडी 7,000 प्लस लागू जीएसटी /18 प्रतिशत जमा कर सकते हैं। सर्वेक्षण रिपोर्ट एवं आरएफपी दस्तावेजों पर स्पष्टीकरण केवल उन निविदादाताओं को जारी किया जाएगा जो निविदा जमा तिथि से न्यूनतम एक कार्यदिवस पूर्व तक किसी भी कार्यदिवस में अपेक्षित शुल्क का भुगतान करके आरएफपी दस्तावेज खरीद/प्राप्त कर चुके हैं। निविदादाता किसी भी स्पष्टीकरण/संशोधन/समय विस्तार आदि, यदि कोई हो, के बारे में नवीनतम जानकारी हेतु वेबसाइट नियमित रूप से देखते रहें। इस संबंध में महत्वपूर्ण समय-सारणी निम्नानुसार है:

क्र. सं.	ट्रांसमिशन योजना का नाम	स्पष्टीकरण प्राप्त करने की अंतिम तिथि (दिन/माह/वर्ष)	आरएफपी के उत्तर जमा करने की अंतिम तिथि (दिन/माह/वर्ष)	आरएफपी के उत्तर खोलने की तिथि
1.	गुजरात में जाम खंभालिया आईई परियोजना से विद्युत के एकीकरण के लिए पारेषण प्रणाली-चरण-II (5500 मेगावाट) और जामनगर चरण-I (1000 मेगावाट)।	01/04/2026	15/05/2026 को 15:00 बजे (आईएसटी) तक	15/05/2026 को 15:30 बजे (आईएसटी) तक
2.	लकाडिया (चरण-2: 7.5 गीगावाट), जाम खंभालिया (चरण-2: 5.5 गीगावाट) और जामनगर (चरण-1: 1 गीगावाट) से विद्युत निकासी के लिए सामान्य पारेषण प्रणाली-भाग-ग।	01/04/2026	15/05/2026 को 15:00 बजे (आईएसटी) तक	15/05/2026 को 15:30 बजे (आईएसटी) तक

नोट: पीएफसी कन्सल्टिंग लिमिटेड बिना कोई कारण बताए और बिना कोई जिम्मेदारी लिए प्रक्रिया को निरस्त या संशोधित करने का अधिकार रखता है। यह कोई प्रस्ताव नहीं है।

पहल कर्ता: PFC CONSULTING LTD. (पीएफसी लिमिटेड की पूर्ण स्वामित्व वाली सहायक कंपनी) (भारत सरकार का उपक्रम)

निविदा प्रक्रिया समन्वयक: विद्युत मंत्रालय, भारत सरकार

पहल भागीदार: केन्द्रीय विद्युत प्राधिकरण

ई-नीलामी बिक्री सूचना

का कब्जा केनरा बैंक के प्राधिकृत अधिनियम, 2002 के तहत नीचे

ps' 'liance.com) द्वारा दिए ा होगा या उसमें चालान

लामी की तिथि एवं समय
संपर्क व्यक्ति का नाम
26 बजे अप. से 01:30 के बीच (प्रत्येक 5 मिनट के असीमित विस्तार सहित)
श्री वैभव अग्रवाल मोबाइल नं. 9811237992 एवं श्री मनोज कुमार (प्राधिकृत अधिकारी) मोबाइल नं. 8826933887,

कृते केनरा बैंक
अधिकृत प्राधिकारी

---

bank

आस्ति वसूली प्रबंधन शाखा पूर्वी दिल्ली,

पॉकेट-ई, मयूर विहार फेज-II, दिल्ली-110091,

ई-मेल : cs8075@pnb.co.in, दूरभाष : 011-22779758, 22785289

अचल सम्पत्तियों की बिक्री हेतु बिक्री सूचना

ण तथा प्रतिभूति हित प्रवर्तन अधिनियम, 2002 के तहत अचल आस्तियों की बिक्री हेतु ई-नीलामी बिक्री सूचना।

क/प्रतिभूत क्रेडिटर के अधिकृत प्राधिकारी द्वारा कर लिया गया था, की बिक्री सम्बद्ध कर्जदार(रों) एवं जमानती(यों) से बैंक/प्रतिभूत क्रेडिटर के बकायों की वसूली हेतु नीचे वर्णित तिथियों

गी।

अनुसूची

2) के तहत	अचल सम्पत्तियों का विवरण बंधककर्ता/स्वामी का नाम [सम्पत्ति(यों) के बंधककर्ता]	आरक्षित मूल्य / ईएमडी (ईएमडी जमा करने की अन्तिम तिथि) / वृद्धि राशि	ई-नीलामी की तिथि/समय	प्रतिभूति क्रेडिटर के संज्ञान में ऋणभारों का विवरण अधिकृत प्राधिकारी का नाम एवं सम्पर्क सं.
भुगतान ा व्यय	खसरा नंबर 70 में से 130 वर्ग गज के प्लॉट पर भूमि और भवन, यानि कुरेनी, जिला उत्तरी दिल्ली की पुरानी लाल डोरा आबादी (1908-09) में स्थित, स्वामित्व श्रमा बानो पत्नी सरज खान, निवासी गली नंबर 7बी स्वतंत्र नगर, नरेला, दिल्ली-110040 हैं। बिक्री विलेख पंजीकरण संख्या 3232 दिनांक 21.06.2013, क्षेत्रफल 130.00 वर्ग गज।	रु. 74.22 लाख / रु. 7.42 लाख (30.03.2026) / रु. 25,000/-	30.03.2026 11.00 बजे पूर्वा. से 04.00 बजे अप.	ज्ञात नहीं श्रीमती राजबाला पुनिया (मो. नं. 9013609199) प्राधिकृत अधिकारी एआरएमबी, पूर्वी दिल्ली
	फ्लैट संख्या एसएफ-4, द्वितीय तल (छत अधिकार के बिना) एलआईजी, प्लॉट संख्या बी-46, गंगा विहार, कॉलोनी, गांव सादुल्लाबाद, परगना लोनी, तहसील और जिला-गाजियाबाद, उत्तर प्रदेश, 450 वर्ग फुट या 41.805 वर्ग मीटर क्षेत्रफल, श्री मनीष कुमार पुत्र श्री रमेश चंद के नाम पर	रु. 10.35 लाख / रु. 1,035 लाख (30.03.2026) / रु. 25000/-	30.03.2026 11.00 बजे पूर्वा. से 04.00 बजे अप.	ज्ञात नहीं श्रीमती राजबाला पुनिया (मो. नं. 9013609199) प्राधिकृत अधिकारी एआरएमबी, पूर्वी दिल्ली
	आवासीय संपत्ति बेसमेंट, बी-5 विवेक विहार, दिल्ली क्षेत्रफल 646.200 वर्ग	रु. 459.45 लाख	30.03.2026	ज्ञात नहीं

)disha retains top spot in ITI's fiscal health index

UREAU
Delhi, March 11

SHA RETAINED ITS top ion in the latest Fiscal th dex (FHI) 2026 se y NITI Aayog, secur- n overall score of 73.1. ne state also improved its from the previous year, orcing its lead in fiscal agem nt among India's r st . oa and Jharkhand follow e rankings, emerging side Odisha in the group of top "Achiever" states.

Gujarat and Maharashtra continue to feature among the top five performers, reflecting relatively stable fiscal fundamentals.

Haryana recorded a notable improvement, climbing three positions compared with the previous year. Bihar, Karnataka and Telangana showed signs of mild recovery, while Punjab, West Bengal and Kerala remained at the bottom of the rankings.

The index, which evaluates the fiscal position of 18 major states, shows varied outcomes across the country.

While some states experienced moderation in their FHI scores in 2023–24 compared with 2022–23, the overall assessment highlights differences in revenue mobilisation, expenditure management and debt sustainability.

States in the Achiever category—Odisha, Goa and Jharkhand—share several fiscal strengths.

CIL pithead stock at 121 MT

SAURAV ANAND
New Delhi, March 11

INDIA'S COAL INVENTORIES have surged to record levels with pithead stock at Coal India (CIL) mines rising from 106.78 million tonne (MT) on April 1, 2025 to 121.39 MT as of March 9, 2026, reflecting robust production and supply growth across the sector, the ministry of coal said on Wednesday.

The increase comes as coal production and supply continue to outpace consumption, resulting in a sharp build-up of inventories at mines and power plants.

Overall coal stock in the country has reached about 210 MT, sufficient to meet around 88 days of consumption.

PFC CONSULTING LIMITED

(A wholly owned subsidiary of PFC Limited)
Regd. Office: First Floor, "Urjanidhi", 1, Barakhamba Lane, Connaught Place, New Delhi – 110001. (India) Fax : 011-23443990

GLOBAL INVITATION (THROUGH E-BIDDING ONLY)
R SELECTION OF TRANSMISSION SERVICE PROVIDER ON BUILD, OWN, OPERATE AND TRANSFER (BOOT) BASIS FOR INTER-STATE TRANSMISSION PROJECTS

Consulting Limited, a wholly owned subsidiary of Power Finance Corporation Limited (A Government of India rtaking), invites proposals for setting up of transmission projects on Build, Own, Operate and Transfer (BOOT) following single stage two envelope process of "Request for Proposal" (RFP).

ed bidders may refer to the RFP notification and RFP documents available on the website ww.mstcecommerce.com and https://www.pfcclindia.com.

Bidders may obtain the RFP documents on all working days between 10:30 hrs (IST) and 16:00 hrs (IST) from .2026 to one working day prior to bid submission for the projects mentioned below on payment of a non-dable fee of Rs. 5,00,000/- or USD 7,000 plus applicable GST @18% from 9th Floor, Wing – A, Statesman e, Connaught Place, New Delhi - 110001, Tel.: 91-11-23443996; Fax: 91-11-23443990; e-mail: itp@pfcindia.com. The RFP documents can also be downloaded from https://www.mstcecommerce.com https: ww.pfcclindia.com, however, in such case, interested party can submit Response to RFP only on issic non-refundable fee of Rs. 5,00,000/- or USD 7,000 plus applicable GST @18% separately. The y report and clarification to RFP documents shall be issued to those bidders, who have obtained/ purchased documents by paying requisite fee at least one working day prior to bid submission date. Bidders should arly visit website to keep themselves updated regarding clarifications/ amendments/ time extensions etc., if The important timelines in this regard are as follows:

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)
Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)	01/04/2026	15/05/2026 up to 15:00 hrs (IST)	15/05/2026 up to 15:30 hrs (IST)
Common Transmission System for evacuation of power from Lakadia (Phase-II: 7.5GW), Jam Khambhaliya (Phase-II: 5.5GW) and Jamnagar (Phase-I: 1GW) - Part-C	01/04/2026	15/05/2026 up to 15:00 hrs (IST)	15/05/2026 up to 15:30 hrs (IST)

: PFC Consulting Limited reserves the right to cancel or modify the process without assigning any reason and ut any liability. This is not an offer.

Bid Process Coordinator
PFC CONSULTING LTD.
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

MUNICIPAL CORPORATION OF DELHI

For Public Awareness

Use MCD Malba Pickup App for Safe Disposal of C&D Waste

To ensure clean roads and proper disposal of Construction & Demolition (C&D) waste (Malba) in Delhi, the Municipal Corporation of Delhi (MCD) has launched the MCD Malba Pickup App / Delhi Malba Portal.

Citizens can now easily request scientific collection and transportation of malba through this digital platform.

For Citizens / Waste Generators

If you have malba from house construction, renovation, or demolition, do not dump it on roads or public places.

Instead:
- Use the MCD Malba Pickup App / Delhi Malba Portal
- Book authorized pickup of C&D waste
- Ensure safe transport and disposal at designated C&D recycling plants

Benefits:
- Easy online request for malba pickup
- Doorstep collection facility
- Scientific disposal at authorized recycling plants
- Helps keep Delhi clean and prevents illegal dumping

For Transporters

MCD invites transporters and vehicle owners to register on the Delhi Malba Portal for transportation of C&D waste.

Benefits for Transporters
- Official registration with MCD
- Regular transportation work for C&D waste
- Transparent digital payment system
- Opportunity to participate in city cleanliness efforts

Interested transporters can register their vehicles and details on the portal/app to start providing malba transportation services.

*As per C& D Rules 2025 it is mandatory to dispose off Malba at Processing plant only.

*If Malba is less than 1 MT it will be lifted free of cost

*If Malba is more than 1MT you have to pay charges.

Illegal dumping of malba on roads, drains, and public spaces creates environmental and sanitation problems.

Citizens are requested to use the official MCD Malba Pickup App for proper disposal.

Let Us Work Together for a Clean Delhi
Download the App / Register on the Portal Today

For more details, visit:
Municipal Corporation of Delhi Website / Malba Portal
Municipal Corporation of Delhi
Serving the citizens for a cleaner and greener Delhi

Scan this QR

Register on Delhi Malba Portal
Log Malba Collection Request for all Malba collection happening in the city
https://delhi.tracewaste360.in/register/transporter
In case of any issue, citizens can contact MCD Toll free no. 155305.

RO No. 3670/Adv/CD/2025-26

PFC CONSULTING LTD.

पीएफसी कंसल्टिंग लिमिटेड
पावर फाइनेंस कॉर्पोरेशन लिमिटेड की पूर्ण स्वामित्वाधीन सहायक कंपनी
PFC CONSULTING LIMITED
(A wholly owned subsidiary of Power Finance Corporation Limited)

Ref. No. 04/ITP-128/25-26/RFP

20 March, 2026

To,

Secretary,
Central Electricity Regulatory Commission,
6th , 7th & 8th Floors, Tower B, World Trade Centre,
Nauroji Nagar, New Delhi- 110029

Sub.: Intimation about initiation of the bid process for selection of Transmission Service Provider (TSP) for establishing transmission system for "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)" and issuance of RFP Document

Sir,

Ministry of Power vide Gazette Notification no. CG-DL-E-19022026-270309 dated 12.02.2026 has appointed PFC Consulting Limited (PFCCL) as Bid Process Coordinator (BPC) to undertake the bid process for selection of Transmission Service Provider (TSP) for establishing **"Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)** " 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 12.03.2026 with the publication of RFP notification in:

1. Financial Express (English) – All Edition
2. Indian Express (English) – All Edition
3. Jansatta (Hindi) – All Editions
4. The Financial Times – Worldwide (All Editions)

The same has also been made available along with the RFP documents on PFCCL website 'www.pfcclindia.com' w.e.f. 12.03.2026. 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 Ministry of Power on 06.08.2021 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 15.05.2026.

As per the requirements of the Guidelines (Clause 4.2 of Tariff based Competitive-bidding Guidelines for Transmission Service), we hereby intimate the Commission about initiation of the bid process for selection of Transmission Service Provider (TSP) for establishing transmission system for **"Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"**. 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

PFC CONSULTING LTD.

पीएफसी कंसल्टिंग लिमिटेड
(पावर फाइनेंस कॉर्पोरेशन लिमिटेड की पूर्णतः स्वामित्वाधीन सहायक कंपनी)
PFC CONSULTING LIMITED
(A wholly owned subsidiary of Power Finance Corporation Limited)

Ref. No. 04/ITP-128/25-26/RFP

20 March, 2026

To,
Director (Transmission),
Ministry of Power,
Shram Shakti Bhawan,
New Delhi – 110001

Sub.: **Publishing RFP notification and RFP Documents for Selection of the Transmission Service Provider for establishing transmission system for "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW) " on the website of MoP.**

Sir,

Ministry of Power vide Gazette Notification no. CG-DL-E-04112025-267371 dated 03.11.2025 has appointed PFC Consulting Limited (PFCCL) as Bid Process Coordinator (BPC) to undertake the bid process for selection of Transmission Service Provider (TSP) for establishing **"Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"** 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 bid process for selection of Transmission Service Provider (TSP) for establishing transmission system for **"Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW) "** has been initiated with the publication of RFP notification on 12.03.2026 (copy of the RFP notification enclosed). The same has also been made available along with the RFP document on PFCCL website 'www.pfcclindia.com' w.e.f. 12.03.2026. It may be noted that these RFP Document are based on the Single Stage Two Envelope (RFQ & RFP combined) Standard Bidding Documents (SBD) issued by Ministry of Power on 06.08.2021. The last date for submission of Responses to RFP is 15.05.2026.

It is requested that in line with the requirements of the Guidelines (Clause 9.2 of Tariff based Competitive-bidding Guidelines for Transmission Service), the RFP Notice and RFP documents may be published on the website of Ministry of Power. The soft copy of the RFP Notification and RFP documents has been mailed separately at the email address transdesk-mop@nic.in. 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

Annexure-6

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 JAM KHAMBHALIYA REZ TRANSMISSION LIMITED is incorporated on this TWENTY NINETH day of APRIL TWO THOUSAND TWENTY SIX 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 **U42201DC2026GOI470961**

The Permanent Account Number (PAN) of the company is **AAHCJ4332N***

The Tax Deduction and Collection Account Number (TAN) of the company is **DELJ20557F***

Given under my hand at Manesar this TWENTY NINETH day of APRIL TWO THOUSAND TWENTY SIX

Document certified by DS MINISTRY OF CORPORATE AFFAIRS , CRC MANESAR 2 <ROC.CRC@MCA.GOV.IN>.

Digitally signed by
DS MINISTRY OF CORPORATE
AFFAIRS , CRC MANESAR 2
Date: 2026.05.21 10:56:31 IST

Bayyapureddy Chaitanya

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:

JAM KHAMBHALIYA REZ TRANSMISSION LIMITED

First Floor, Urjanidhi, 1, Barakhamba lane, Connaught Place, New Delhi, Central Delhi- 110001, Delhi

*as issued by Income tax Department

No. 25-17/99/2026-POWER GRID(MoP)
संख्या 25-17/99/2026-पावर ग्रिड(एमओपी)

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
***

Shram Shakti Bhawan, Rafi Marg
New Delhi, Dated 24th August, 2026

To,

Shri Neeraj Singh, Director,
M/s Jam Khambhaliya REZ Transmission Limited,
First Floor, Urja Nidhi, 1, Barakhamba Lane,
Connaught Place, New Delhi-110001

Subject: Prior approval of the Government of India under Section 68 (1) of the Electricity Act, 2003, for installation of overhead transmission lines under the transmission scheme "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)" to M/s Jam Khambhaliya REZ Transmission Limited – regarding.

Sir,

I am directed to refer to PFCCL's online application ID SW8624267326-M029_D002_A003-1780313832699 dated 01.06.2026 on NSWS Portal, seeking prior approval of Government of India under Section 68 (1) of the Electricity Act, 2003 in favour of M/s Jam Khambhaliya REZ Transmission Limited (a wholly owned subsidiary of PFC Consulting Limited) for installation of the following overhead transmission lines under the transmission scheme "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)".

- Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/c line
- Kalyanpur (GIS) – Saurashtra (near Rajkot) (GETCO) 765 kV D/c line

2. Ministry of Power vide notification in Gazette no. CG-DL-E-19022026-270309 dated 12.02.2026 has appointed PFC Consulting Limited (PFCCL) as Bid Process Coordinator for the purpose of selection of Bidder as Transmission Service Provider (TSP) to establish the transmission scheme "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat – Phase II (5500MW) and Jamnagar Phase-I (1000 MW)" to be implemented through Tariff Based Competitive Bidding (TBCB) route. PFC Consulting Limited, the Bid Process Coordinator, has incorporated the SPV, "Jam Khambhaliya REZ Transmission Limited", for implementation of the "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat – Phase II (5500MW) and Jamnagar Phase-I (1000 MW).

3. M/s Jam Khambhaliya REZ Transmission Limited has submitted an Undertaking dated 15.06.2026 stating that the route of above-mentioned overhead line would fall outside the Revised GIB Priority Area of Gujarat as referred in judgment of Hon'ble Supreme Court of India dated 19.12.2025 in Writ Petition (Civil) No. 838 of 2019, regarding GIB (Great Indian Bustard) case. Also, M/s Jam Khambhaliya REZ Transmission Limited would comply with the directions of Hon'ble Supreme Court of India in its order dated 19.12.2025 in Writ Petition (Civil) No. 838 of 2019, including the optimization of route of the dedicated lines.

Contd/...

4. Ministry of Power, Government of India on the basis of the recommendation of Central Electricity Authority (CEA), conveys the prior approval under Section 68 (1) of the Electricity Act, 2003 to M/s Jam Khambhaliya REZ Transmission Limited' for installation of the following overhead transmission lines under the transmission scheme "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)".

- Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/c line

  [Total line length is 70.12 km approx.]

- Kalyanpur (GIS) – Saurashtra (near Rajkot) (GETCO) 765 kV D/c line

  [Total line length is 214.68 km *approx.]*

5. The approval would be subject to compliance of:

(i) The relevant provisions of the Electricity Act, 2003, as amended from time to time and the rules and regulations made there under, and

(ii) CEA (Measures relating to Safety and Electric Supply) Regulations, 2023, and any subsequent amendments made thereto.

(iii) The directions of Hon'ble Supreme Court of India in its order dated 19.12.2025 in Writ Petition (Civil) No. 838 of 2019, including the optimization of route of the overhead lines and any other directions given by competent authorities in pursuance of the above order by the Hon'ble Supreme Court.

6. The approval would also be subject to the following conditions:

(i) The implementing agency will commence construction of the project within three years of grant of approval, unless this term is extended by Ministry of Power.

(ii) Ministry of Power may withdraw the approval before the expiry of the period of three years after giving a one-month notice.

(iii) The implementing agencies shall abide by the provisions of Works of Licensees Rules, 2006 notified by the Govt. of India, Ministry of Power in the Gazette of India, extra-ordinary Part-II, Section 3(i) dated 18-04-2006 (vide GSR 217 (E) dated 18-04-2006).

Yours faithfully,

MVN Vara Prasad

(M.V.N. Vara Prasad/ एम.वी.एन. वरा प्रसाद)
Under Secretary to the Government of India
Tele: 011-23730264

Copy to:

The Chairperson
Central Electricity Authority
Sewa Bhawan, R.K. Puram, New Delhi 110066.

***

Dated: August 20, 2026

CERTIFICATE BY THE BID EVALUATION COMMITTEE

Sub: Selection of Successful Bidder as Transmission Service Provider to establish "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"

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. **'Power Grid Corporation of India Limited'** emerged as the Successful Bidder after the conclusion of e-reverse bidding process with the lowest Quoted Transmission Charges of **Rs. 8,229.12 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 Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"** as assessed by Cost Committee. The quoted tariff discovered through e-reverse bidding process is acceptable.

Name of Committee Member	Signature
Sh. Amit Jog, General Manager, State Bank of India, Commercial Clients Group Regional Office-II, New Delhi - **Chairman**	
Sh. A. B. Rathod, CE (SLDC), GETCO - **Member**	
Sh. S. R. Parmar, I/c CE (P&C), GETCO- **Member**	
Sh. Ganeswara Rao Jada, Director, PSPA-I Division, CEA- **Member**	
Smt. Kavita Jha, Director, , PSETD Division, CEA- **Member**	
Sh. Neeraj Singh, Chairman, Jam Khambhaliya REZ Transmission Limited, New Delhi - **Convener Member**	

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. 04/26-27/ITP-132/RFP

August 28, 2026

To,

E-mail: ppandey@powergrid.in

Mr. Pankaj Pandey, ED (TBCB)
Power Grid Corporation of India Limited,
"Saudamini" Plot No 2, Sector 29,
Gurgaon-122001

Sub.: Inter-State Transmission Scheme "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"- Regarding submission of CPG and Due Diligence for transfer of SPV.

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, **'Jam Khambhaliya REZ Transmission Limited'** has to be acquired by the selected bidder i.e., **'Power Grid Corporation of India 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 in September, 2026. You are therefore requested to arrange for due diligence process accordingly.

It is intimated that the Acquisition Price of the SPV **'Jam Khambhaliya REZ Transmission Limited'** is **Rs.19,22,27,359 (Rupees Nineteen Crore Twenty Two Lakh Twenty Seven Thousand Three Hundred and Fifty Nine 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.	Borrowings from PFCCL	1,51,27,359
4.	Share Capital	1,00,000
	Total	**19,22,27,359**

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

Annexure –A

Contract Performance Guarantee (CPG)

Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)

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.190.00 Crore (Rupees One Hundred and Ninety Crore Only).

PFC CONSULTING LTD.

पीएफसी कंसल्टिंग लिमिटेड
(पावर फाइनेंस कॉर्पोरेशन लिमिटेड की पूर्णतःस्वामित्वाधीन सहायक कंपनी)
PFC CONSULTING LIMITED
(A wholly owned subsidiary of Power Finance Corporation Limited)

Ref. 04/26-27/ITP-128/RFP

09.10.2026

To,
Mr. Amit Bhargava, ED (TBCB)
Power Grid Corporation of India Limited,
"Saudamini" Plot No 2, Sector 29,
Gurgaon-122001

E-mail:
abhar@powergrid.in

Sub: Inter-State Transmission Scheme "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"–Regarding extension of LoI.

Dear Sir,

This is with reference to Letter of Intent (LoI) issued on 21.08.2026 for establishment of subject transmission scheme. The Clause No. 2.15.2 of the RFP document stipulates that within ten (10) days from the issuance of LoI, the selected bidder shall complete all the activities including the acquisition of SPV.

As the SPV scheduled to be transfered on 12.10.2026, the last date for completion of various activities under Clause No. 2.15.2 of the RFP document is extended from 31.08.2026 (10 days from LoI) to 12.10.2026.

Thanking you,

Yours faithfully,

Nirmala

(Nirmala meena)
Deputy General Manager

In Duplicate
August 21, 2026

Ref. No. 04/26-27/ITP-128/RFP

To,
Mr. Pankaj Pandey,
Executive Director (TBCB)
Power Grid Corporation of India Limited,
"Saudamini" Plot No 2, Sector 29,
Gurgaon-122001

E-mail: ppandey@powergrid.in

Sub.: **Inter-State Transmission Scheme "Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"- Letter of Intent**

Dear Sir,

We refer to:

1. The Request for Proposal document dated **March 12, 2026** issued to **'Power Grid Corporation of India Limited'** as regards participation in the international competitive bidding process for Transmission Scheme for **"Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"**, and as amended till the bid deadline including all correspondence/ clarifications/ amendments exchanged between **'Power Grid Corporation of India Limited'** and PFC Consulting Limited in regard thereto (hereinafter collectively referred to as the **"Final RFP"**)
2. The Offer of **'Power Grid Corporation of India Limited'** by way of a Technical Bid pursuant to (1) above submitted on **July 28, 2026** in response to the Final RFP.
3. The Offer of **'Power Grid Corporation of India Limited'** by way of Financial Bid-Initial Offer submitted on **July 28, 2026** in response to the Final RFP.
4. The offer of **'Power Grid Corporation of India Limited'** by way of a Financial Bid-Final Offer Submitted during e-Reverse Auction process concluded on **August 18, 2026** 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 **'Power Grid Corporation of India 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:

1. **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. **Chairman 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

SCHEDULE - A
(Page 1 of 3)

1. **Quoted Transmission Charges as per Annexure-21-Format For Financial Bid**

Quoted Transmission Charges: Rs. 8,229.12 million per annum

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	Percentage 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 4x1500 MVA, 765/400 kV and 10x500 MVA, 400/220 kV Substation near Kalyanpur (GIS) with 2x330 MVAr, 765 kV bus reactor and 2x125 MVAr, 420 kV bus reactor	31.03.2030	74.90%	All Elements are required to be commissioned simultaneously as their utilization is dependent on commissioning of each other. Further, "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I" in Jamnagar area, which is presently under implementation by Jamnagar Transmission Limited (a subsidiary of Adani), is pre-required for utilization of this scheme.
2.	Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/C line			
3.	2 Nos. 765 kV line bays at Jamnagar (GIS) S/s			
4.	Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/c line			
5.	330 MVAr Switchable line reactors on each circuit at Saurashtra (Sompipaliya) (GETCO) (GIS) end of Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/C line (with NGR bypass arrangement)			
6.	2 Nos. 765 kV line bays at Saurashtra (Sompipaliya) (GETCO) (GIS) S/s			
7.	Installation of Synchronous Condenser (+300/-200 MVAr) (Minimum) and Short circuit contribution at PCC of 1200		22.00%	

S. No.	Name of the Transmission Element	Scheduled COD	Percentage 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
	MVA (Minimum) at Jam Kalyanpur (GIS) – 2 Nos. Value of Inertia (Minimum) shall be 3000 MW-s			
8.	Creation of 220 kV switchyard along with Installation of 3x500 MVA, 400/220 kV ICTs at Jamnagar (GIS) S/s		3.10%	Elements at Sl. No. 8 and 9 are required to be commissioned simultaneously as their utilization is dependent on commissioning of each other. Further, "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I" in Jamnagar area, which is presently under implementation by Jamnagar Transmission Limited (a subsidiary of Adani), is pre-required for utilization of this scheme.
9.	4 Nos. 220 kV line bays for RE interconnection at Jamnagar (GIS) S/s			

Notes:

i. *TSP of Jamnagar S/s shall provide space for above scope of work at Sl. 3, 8 and 9 on free of cost basis*

ii. *GETCO shall provide space for above scope of work at Sl. 5 & 6 on free of cost basis*

iii. *Bay(s) required for completion of diameter (GIS) in one-and-half breaker scheme shall also be executed by the TSP.*

iv. *Above Syncons (at Sl. 7) shall be considered as 'transmission asset' similar to STATCOM and SVC for its tariff mechanism.*

No. 24-9/4/2024-PFC (MoP)
Government of India
Ministry of Power
*****

Shram Shakti Bhawan, Rafi Marg,
New Delhi, Dated 14th September, 2026

To,

The Chief Executive Officer,
PFCCL, First Floor
Urjanidhi, 1, Barakhamba Lane,
New Delhi-110003

Subject: Approval of the Government for transfer of shares held by PFCCL in various SPVs, incorporated for development of inter-State & intra State transmission systems, to respective successful bidders- reg.

Ref: (i) PFCCL's letter No. 04/26-27/ITP-128/RFP dated 31.08.2026
(ii) PFCCL's letter No. 04/26-27/ITP-132/RFP dated 31.08.2026
(iii) PFCCL's letter No. 04/26-27/ITP-129/RFP dated 31.08.2026
(iv) PFCCL's letter No. 04/26-27/ITP-112/RFP dated 31.08.2026

Sir,

I am directed to refer to PFCCL's letters under reference (i) to (iv) above, on the subject cited above and to convey the approval of the Competent Authority for divesting the shareholding of PFCCL and its nominee in following Special Purpose Vehicles (SPVs), incorporated for carrying out bidding of various transmission projects under Tariff Based Competitive Bidding (TBCB) mode, to the respective successful bidders, as indicated in below table, with a view to facilitate transfer of the SPVs to the successful bidders, as required under Ministry of Heavy Industries, Department of Public Enterprises O.M. No. 22(1)/2009-GM dated 04.02.2010:

S. No.	Name of the Project	Name of the SPV	Successful Bidder
1	Transmission System for integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat- Phase II (5500MW) and Jamnagar Phase-1 (1000MW)	Jam Khambhaliya REZ Transmission Limited	Power Grid Corporation of India Limited
2	Network Expansion scheme in Western Region to cater to pumped storage potential near Satara (up to 4500MW)- Part A)	Satara Power Transmission Limited	Adani Energy Solutions Limited
3	Common Transmission System for evacuation of power from Lakadia (Phase-II:7.5GW), Jam Khambhaliya (Phase-II:5.5GW) and Jamnagar (Phase-I:1GW)- Part-A	Lakadia A Power Transmission Limited	AnantGrid Projects One Private Limited

4	Establishment of 765/400/220 kV AIS Kandalgaon	RAIGAD POWER TRANSMISSION LIMITED	Apraava Energy Private Limited

Yours faithfully

7/9/26

(Nidhi Juneja)
Under Secretary to the Govt. of India
Email: juneja.n13@nic.in/
sopfcrec-mop@gov.in
Tele: 011-23711302

Copy for information to:

i. CMD, PFC Limited, New Delhi.
ii. US (Trans):- With the request that Transmission Wing may write to concerned States, informing about the project, for extending all possible help in assessment of compensation to be paid to landowners and also expediting forest clearance, if involved in the project.
iii. Sr. PPS to Secretary (Power)/JS (Dist.)/Dir (Dist), Ministry of Power.

Dated 12.10.2026

SHARE PURCHASE AGREEMENT

BETWEEN

PFC CONSULTING LIMITED

AND

JAM KHAMBHALIYA REZ TRANSMISSION LIMITED

AND

POWER GRID CORPORATION OF INDIA LIMITED

PFC CONSULTING LIMITED PFCCL NEW DELHI

JAM KHAMBHALIYA REZ TRANSMISSION LTD. JKRTL NEW DELHI

POWER GRID CORPORATION OF INDIA LTD. PGCIL

सत्यमेव जयते

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

e-Stamp

Certificate No.	:	IN-DL19313989746827Y
Certificate Issued Date	:	09-Oct-2026 01:35 PM
Account Reference	:	IMPACC (IV)/ dl806203/ DELHI/ DL-WSD
Unique Doc. Reference	:	SUBIN-DLDL80620334152999336739Y
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)

Please write or type below this line

This Stamp Paper Forms Part of enclosed Share Purchase Agreement executed between **PFC CONSULTING LIMITED, JAM KHAMBHALIYA REZ TRANSMISSION LIMITED** and **POWER GRID CORPORATION OF INDIA LIMITED**

PFC CONSULTING LIMITED NEW DELHI

JAM KHAMBHALIYA REZ TRANSMISSION LTD. NEW DELHI

POWER GRID CORPORATION OF INDIA LTD.

...y of this Stamp certificate should be verified at ... or using e-Stamp Mobile App of Stock Holding
... details on this Certificate and as available ... Mobile App renders it invalid
... the legitimacy is on the users of the certificate
... any please inform the Competent Authority

सत्यमेव जयते

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

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Certificate No.	:	IN-DL19314380729405Y
Certificate Issued Date	:	09-Oct-2026 01:35 PM
Account Reference	:	IMPACC (IV)/ dl806203/ DELHI/ DL-WSD
Unique Doc. Reference	:	SUBIN-DLDL806203341526915942 38Y
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)

This Stamp Paper Forms Part of enclosed Share Purchase Agreement executed between **PFC CONSULTING LIMITED, JAM KHAMBHALIYA REZ TRANSMISSION LIMITED** and **POWER GRID CORPORATION OF INDIA LIMITED**

PFC CONSULTING LIMITED NEW DELHI

JAM KHAMBHALIYA REZ TRANSMISSION LTD. NEW DELHI

POWER GRID CORPORATION OF INDIA LTD.

Stamp certificate should be verified at www.shcilestamp.com. Any discrepancy in the details on this Certificate and as available on the website/Mobile App of Stock Holding renders it invalid. The onus of checking the legitimacy is on the users of the certificate. In case of any discrepancy please inform the Competent Authority.

सत्यमेव जयते

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

e-Stamp

Certificate No.	:	IN-DL19313639188169Y
Certificate Issued Date	:	09-Oct-2026 01:35 PM
Account Reference	:	IMPACC (IV)/ dl806203/ DELHI/ DL-WSD
Unique Doc. Reference	:	SUBIN-DLDL80620334153736836206Y
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)

Please write or type below this line

This Stamp Paper Forms Part of enclosed Share Purchase Agreement executed between **PFC CONSULTING LIMITED, JAM KHAMBHALIYA REZ TRANSMISSION LIMITED** and **POWER GRID CORPORATION OF INDIA LIMITED**

PFC CONSULTING LIMITED NEW DELHI

JAM KHAMBHALIYA REZ TRANSMISSION LTD. NEW DELHI

POWER GRID CORPORATION OF INDIA LTD.

SHARE PURCHASE AGREEMENT

This **SHARE PURCHASE AGREEMENT** ('Agreement') made on October 12, 2026, 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 – 110 001, (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

JAM KHAMBHALIYA REZ TRANSMISSION LIMITED, a company incorporated under the Companies Act, 2013, with CIN U42201DC2026GOI470961, and having its registered office at, First Floor, Urjanidhi, 1, Barakhamba Lane, Connaught Place, New Delhi, Central Delhi- 110 001, (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

POWER GRID CORPORATION OF INDIA LIMITED, a company incorporated under the Companies Act, 1956 with CIN L40101DL1989GOI038121, and having its registered office at B 9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110 016, (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 vide Gazette Notification No. CG-DL-E-19022026-270309 dated 12.02.2026 had notified PFC Consulting Limited (PFCCL) as the Bid Process Coordinator (BPC) for the purpose of selection of Bidder as Transmission Service Provider (TSP) to establish transmission scheme "**Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat -Phase II (5500MW) and Jamnagar Phase-I (1000 MW)**" through Tariff Based Competitive Bidding (TBCB) process.

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 percent (100 %) of total issued and paid-up equity share capital of the Company.

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.

PFC CONSULTING LIMITED PFCCL NEW DELHI

JAM KHAMBHALIYA REZ TRANSMISSION LTD. JKRTL NEW DELHI

POWER GRID CORPORATION OF INDIA LTD. PGCIL

E. Pursuant to the said Bid Process, **Power Grid Corporation of India Limited** has been identified as the Selected Bidder vide Letter of Intent dated 21.08.2026 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 Capitalized 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 **INR 19,22,27,359/- (Rupees Nineteen Crore Twenty Two Lakh Twenty Seven Thousand Three Hundred Fifty Nine 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 Company, 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

(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;

PFC CONSULTING LIMITED PFCCL NEW DELHI

JAM KHAMBHALIYA REZ TRANSMISSION LTD. JKRTL NEW DELHI

POWER GRID CORPORATION OF INDIA LTD. PGCIL

(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 organization, a joint stock company or other entity or organization, 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 Only] Equity 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;

(xvii) **"Transmission Services Agreement"** or "TSA" means the agreement titled 'Transmission Service Agreement' entered into between CENTRAL TRANSMISSION UTILITY OF INDIA LIMITED and JAM KHAMBHALIYA REZ TRANSMISSION LIMITED the 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 JAM KHAMBHALIYA REZ TRANSMISSION LIMITED which has executed the Transmission Service Agreement, and which shall be acquired by the Selected Bidder.

PFC CONSULTING LIMITED PFCCL NEW DELHI

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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.

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 Limited and 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 outside the jurisdiction of the Registrar of Companies Delhi - I, 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) Immediately 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 **Power Grid**

PFC CONSULTING LIMITED PFCCL NEW DELHI

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POWER GRID CORPORATION OF INDIA LTD. PGCIL

Corporation of India Limited and its nominees and transfer of all assets and liabilities of the Company as on Closing Date;

(b) Approving the **Power Grid Corporation of India Limited and its nominees** as a member of the Company and entering the name of the **Power Grid Corporation of India Limited and its nominees** in the register of members.

(c) Changing the address of the registered office of the Company to the new address, outside the jurisdiction of the Registrar of Delhi - I, as may be provided by the Selected Bidder.

(d) appointing the nominees 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.

Pursuant to the acceptance of resignation of the existing Directors and appointment of new Chairman, the newly constituted Board of Directors shall hold a meeting and pass the following resolution:

(a) 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

(b) 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 **Power Grid Corporation of India 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 **Power Grid Corporation of India Limited and its nominees** as the legal and beneficial owner of the Sale Shares evidenced there under;

(iv) Return the original Sale Share Certificates, duly endorsed in the name of the **Power Grid Corporation of India Limited and its nominees**, to the **Power Grid Corporation of India Limited and its nominees,** as the case may be or its authorized representative;

(v) Handover all the statutory registers and records, if any, of the Company to the Selected Bidder.

(vi) Handover certified true copies of the Board resolution passed by the Company as per (i)(a) to (d) 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.

PFC CONSULTING LIMITED NEW DELHI PFCCL

KHAMBHALIYA REZ TRANSMISSION LTD. NEW DELHI

POWER GRID CORPORATION OF INDIA LTD. PGCIL

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;

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;

PFC CONSULTING LIMITED PFCCL NEW DELHI

JAM KHAMBHALIYA REZ TRANSMISSION LTD. JKRTL NEW DELHI

POWER GRID CORPORATION OF INDIA LTD. PGCIL

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.

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.

PFC CONSULTING LIMITED PFCCL NEW DELHI

JAM KHAMBHALIYA REZ TRANSMISSION LTD. JKRTL NEW DELHI

POWER GRID CORPORATION OF INDIA LTD. PGCIL

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)	**Company Secretary** **Power Grid Corporation of India Limited** B – 9, Qutab Institutional Area, Katwaria Sarai, New Delhi – 110 016, India
Name of the Holding Company of the SPV	**Company Secretary** **PFC Consulting Limited** First Floor, "Urjanidhi", 1 Barakhamba Lane, Connaught Place, New Delhi – 110 001
Company (Before Closing Date)	**Project in-charge** **JAM KHAMBHALIYA REZ TRANSMISSION LIMITED** First Floor, Urjanidhi, 1, Barakhamba Lane, Connaught Place, New Delhi, Central Delhi- 110001
Company (After Closing Date)	**JAM KHAMBHALIYA REZ TRANSMISSION LIMITED** B – 9, Qutab Institutional Area, Katwaria Sarai, New Delhi – 110 016, India

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 endeavor 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

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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 represented by Sh. Arup Samanta, General Manager, Company Secretariat, POWERGRID, pursuant to an authorization granted to Sh. Arup Samanta, General Manager, Company Secretariat, POWERGRID through necessary Board resolutions. Further, Sh. Arup Samanta, General Manager, Company Secretariat, POWERGRID is also 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 Sh. Arup Samanta, General Manager, Company Secretariat, POWERGRID 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.

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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.

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.

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JKRTL JHARKHAND KHAMBHALIYA REZ TRANSMISSION LTD NEW DELHI

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- 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. 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 **"PFC CONSULTING LIMITED (PFCCL)"**

BY THE HAND OF **SHRI SACHIN ARORA, COMPANY SECRETARY**

PURSUANT TO THE RESOLUTION PASSED BY THE BOARD OF DIRECTORS ON 27TH AUGUST, 2026

ON THE 12TH DAY OF OCTOBER, 2026

IN THE PRESENCE OF:

WITNESS: Anshul Sharma, E.A. PFCCL
NAME, SIGNATURE, DESIGNATION AND ADDRESS:

SIGNED AND DELIVERED
BY THE WITHIN NAMED **"JAM KHAMBHALIYA REZ TRANSMISSION LIMITED"**

BY THE HAND OF **SHRI NEERAJ SINGH, CHAIRMAN**

PURSUANT TO THE
RESOLUTION PASSED BY THE BOARD OF DIRECTORS ON 21ST AUGUST, 2026

ON THE 12TH DAY OF OCTOBER, 2026

IN THE PRESENCE OF:

WITNESS: Anandita Mishra, New Delhi
NAME, SIGNATURE, DESIGNATION AND ADDRESS:

SIGNED AND DELIVERED
BY THE WITHIN NAMED **"POWER GRID CORPORATION OF INDIA LIMITED"**

BY THE HAND OF **SHRI ARUP SAMANTA, GENERAL MANAGER, COMPANY SECRETARIAT, POWERGRID**

PURSUANT TO THE
RESOLUTION PASSED BY THE BOARD OF DIRECTORS ON 07TH APRIL, 2026

ON THE 12TH DAY OF OCTOBER, 2026

IN THE PRESENCE OF:

WITNESS: VIKAS KUMAR, CHIEF MANAGER, POWERGRID
NAME, SIGNATURE, DESIGNATION AND ADDRESS:

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 Anubhav Kansal *	100	1%
	Total		**100%**

*Nominee of PFC Consulting Limited

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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 POWER FROM RE PROJECTS IN JAM KHAMBHALIYA REZ IN GUJARAT - PHASE II (5500MW) AND JAMNAGAR PHASE-I (1000 MW)

BETWEEN

CENTRAL TRANSMISSION UTILITY OF INDIA LIMITED

(NODAL AGENCY)

AND

JAM KHAMBHALIYA REZ TRANSMISSION LIMITED

12th October, 2026

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JAM KHAMBHALIYA REZ TRANSMISSION LTD. ★ NEW DELHI

Bond

Indian-Non Judicial Stamp
Haryana Government
Transmission Service Agreement

Date :06/08/2026

Certificate No. G0F2026H143

GRN No. 156782113

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 12th [Insert day] of October [Insert month] of Two Thousand Twenty Six.

BETWEEN:

The **CENTRAL TRANSMISSION UTILITY OF INDIA LIMITED**, a company incorporated under the Companies Act, 2013, having its registered office at **Plot No.2, Sector 29, Gurugram, Haryana 122001, India** & Correspondence address at **Floor No. 5-10, Tower 1, Plot No. 16, IRCON International Tower, Institutional Area, Sector 32, Gurugram, Haryana – 122001, India**, 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

JAM KHAMBHALIYA REZ TRANSMISSION LIMITED incorporated under the Companies Act, 1956/ Companies Act, 2013 (as the case may be), having its registered office at **1st Floor, Urjanidhi, 1, Barakhamba Lane, Connaught Place, New Delhi-110001** (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;

("Nodal Agency" and "TSP" are individually referred to as "Party" and collectively as the "Parties")

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JAM KHAMBHALIYA REZ TRANSMISSION LIMITED NEW DELHI

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 **JAM KHAMBHALIYA 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;

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"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" Contract Performance Guarantee" shall mean the irrevocable unconditional bank guarantee, or insurance surety bond or Payment on Order Instrument 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 (for bank guarantee) or Schedule-8A (for insurance surety bond issued by any of the insurance companies authorized by Insurance Regulatory and Development Authority of India), or Schedule-8B (for Payment on Order Instrument issued by PFC/REC/IREDA) in accordance with Article 3 of this Agreement and which shall include the additional bank guarantee or insurance surety bond or Payment on Order Instrument furnished by the TSP under this Agreement;

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"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;

"Payment on Order Instrument" shall mean Letter of Undertaking from Indian Renewable Energy Development Agency Limited (IREDA) or Power Finance Corporation Limited (PFC) or REC Limited (REC) [the three non-banking financial institutions under Ministry of New & Renewable Energy (MNRE)/ Ministry of Power (MoP), to pay in case situation of default of Transmission Service Provider (TSP) in terms of tender conditions/Power Purchase Agreement (PPA) arises. Such Letter (s) will have same effect as that of a Bank Guarantee issued by any public any public sector bank. Such "Payment on Order instrument" would have terms and conditions similar to that of any Bank Guarantee given by any public sector bank and would promise to pay the Nodal Agency on demand within stipulated time. TSPs can seek such Letter(s) by offering due security to the above mentioned three non-banking financial institutions mentioned above (IREDA, PFC & REC). Nodal Agency shall not accept the instrument of 'Letter of Undertaking' as described above or in any other form, from any other non-banking financial institutions or bank, except IREDA, PFC & REC.

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"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 Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)"**, 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 **March 12, 2026** 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), JAM KHAMBHALIYA REZ TRANSMISSION LIMITED** and the

Successful Bidder for the purchase of one hundred (100%) per cent of the shareholding of the **JAM KHAMBHALIYA 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 **JAM KHAMBHALIYA 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 **JAM KHAMBHALIYA 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 **JAM KHAMBHALIYA REZ TRANSMISSION LIMITED** from **PFC Consulting Limited**, who shall sell to the Selected Bidder, the equity shareholding of **JAM KHAMBHALIYA 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.190.00 Crore (Rupees One Hundred and Ninety Crore 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. 19 Crore (Rupees Nineteen Crore 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.190.00 Crore (Rupees One Hundred and Ninety Crore 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 Orders No. P45021/2/2017-PP (BE-II)-Part (4) Vol.II dated 19.07.2024 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. P45021/2/2017-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 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 4.1.1 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.

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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) in the scope of TSP:
   - For Generation Pooling Substation shall not be beyond 3 Km radius of the location proposed by BPC in their survey report.
   - For Load Serving Substation within the scope of TSP shall not be beyond 5 Km radius of the location proposed by the BPC in their Survey Report
   - For an Intermediate Substation shall not be beyond 10 Km radius of the location proposed by the BPC in their 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

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

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

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.190.00 Crore (Rupees One Hundred and Ninety Crore 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: 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.

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% for AC System and 97% for Synchronous Condenser Station.**

Payment of monthly Transmission charges based on actual availability will be calculated as per para 1.2 of Schedule 4 of this Agreement. In case of hybrid system, availability will be considered separately for AC System, HVDC System and Synchronous Condenser Station and monthly transmission charges based on actual availability shall be paid by categorising the system into AC System, HVDC System or Synchronous Condenser Station (as applicable) and percentage of total transmission charges payable to the TSP for AC System, HVDC System, Synchronous Condenser Station as indicated in Schedule 5 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: 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.

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.

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.

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
- 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;

(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.

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.

CENTRAL TRANSMISSION UTILITY OF INDIA LTD. ★ सीटीयू

JAM KHAMBHALIYA REZ TRANSMISSION LTD. ★ NEW DELHI

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.

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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 as mentioned at Clause 8.2 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.

(c) 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.

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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. 12.67 Crore (Rupees Twelve Crore Sixty Seven 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 **JAM KHAMBHALIYA 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 **JAM KHAMBHALIYA 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 **JAM KHAMBHALIYA 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 **JAM KHAMBHALIYA 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 **JAM KHAMBHALIYA REZ TRANSMISSION LIMITED,** then holding of Selected Bidder A in JAM

KHAMBHALIYA 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 **JAM KHAMBHALIYA 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 **JAM KHAMBHALIYA 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:

(i) **M/S Power Grid Corporation of India Limited (Selected bidder)**

		CORPORATE	BUSINESS
Address	:	Plot No 2, Saudamini, Sec-29, Gurugram, Haryana-122001	WR-II RHQ, Plot No 54, Sama-Savli Road, Vadodara Gujarat - 390024
Attention	:	ED(TBCB)	Sh. Anand Kr. Saraph (PIC)
Email	:	tbcb@powergrid.in	anandsaraph@powergrid.in
Fax. No.	:	-	-
Telephone No.	:	0124-2822123	9501102099

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 TSP

.....

[Signature, Name, Designation and Address]

Sh. Anand Kumar Saraph
Project In-charge

2. For and on behalf of **Central Transmission Utility of India Limited (Nodal Agency)**

.....

KAMAL KUMAR JAIN
Senior General Manager
सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड
CENTRAL TRANSMISSION UTILITY OF INDIA LIMITED
(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड की पूर्ण स्वामित्व कंपनी)
(A wholly owned subsidiary of POWERGRID)
5th-10th Floor, Ircon International Tower-1, Plot No.-16, Sector-32, Gurugram-122003

[Signature, Name, Designation and Address]

WITNESSES:

1. For and on behalf of

: **BPC**

.....

[Signature]

Anshul Sharma, E.A.PTCL
.....

[Insert, Name, Designation and Address of the Witness]

2. For and on behalf of

: **Nodal Agency**

.....

[Signature]

DEEPAK KRISHNAN
Chief Manager
सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड
CENTRAL TRANSMISSION UTILITY OF INDIA LIMITED
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(A wholly owned subsidiary of POWERGRID)
5th-10th Floor, Ircon International Tower-1, Plot No.-16, Sector-32, Gurugram-122003

[Insert Name, Designation and Address of the Witness]

SCHEDULES

Schedule: 1

Project Description and Scope of Project

A. Description of the Transmission Scheme

Govt. of India has set a target for establishing 500 GW capacity from non-fossil energy sources by 2030. Applications for integration of about 9.5 GW RE capacity (4 GW at Jam Khambhaliya, 4.5 GW at Kalyanpur and 1 GW at Jamnagar) have been received in Dwarka/Jamnagar Area.

Out of this 9.5 GW, about 4 GW have been accommodated at Jam Khambhaliya PS (3 GW at 220 kV and 1GW at 400 kV). Considering the receipt of applications in Dwarka area, additional transmission system for Integration of about 4.5 GW capacity was required to be planned in South-west of Jam Khambhaliya i.e. near Kalyanpur. Kalyanpur S/s is proposed to be interconnected with Jamnagar as well as Saurashtra (Sompipaliya) (GETCO) substations for onward dispersal of power. Accordingly, the subject transmission scheme has been aligned with the commissioning schedule of Saurashtra (Sompipaliya) (GETCO) Substation, which is presently expected by March, 2030.

Further, RE applications for cumulative 1.756 GW capacity has been received at Jamnagar area. Since Jamnagar S/s is already under implementation, 3x500 MVA, 400/220 kV ICTs are being planned at Jamnagar S/s to cater to Integration of up to 1 GW RE capacity in Jamnagar area in Phase-I.

In view of the above, transmission scheme for integration of cumulative capacity of 6.5 GW power from various RE Projects in Dwarka/Jamnagar areas in Gujarat namely **"Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500 MW) and Jamnagar Phase-I (1000 MW)"** was taken up for deliberations in the 37th NCT meeting held on 19.01.2026.

The subject Transmission scheme inter-alia includes establishment of 4x1500 MVA, 765/400 kV and 10x500 MVA, 400/220 kV Substation near Kalyanpur (GIS), Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/C line, Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) 765 kV D/C line, Creation of 220 kV switchyard along with Installation of 3x500 MVA, 400/220 kV ICTs at Jamnagar (GIS) S/s. Further, for onward evacuation of power towards load centers in South Gujarat and Maharashtra, Common Transmission System for evacuation of power from Lakadia (Phase-II: 7.5 GW), Jam Khambhaliya (Phase-II: 5.5 GW) and Jamnagar (Phase-I: 1 GW)" Parts A, B and C shall be required.

The subject Transmission system was recommended by NCT in the 37th NCT meeting held on 19.01.2026. Further, Ministry of Power (MoP) vide Gazette notification dated 12.02.2026 has approved this Transmission scheme for implementation through TBCB mode and appointed PFCCL as BPC.

B. Detailed Scope of Work

S. No	Name of Transmission Element	Scheduled COD in months from Effective Date
1.	Establishment 4x1500 MVA, 765/400 kV and 10x500 MVA, 400/220kV Substation near Kalyanpur (GIS) with 2x330 MVAr, 765 kV bus reactor and 2x125 MVAr, 420 kV bus reactor • 765/400 kV, 1500 MVA ICT – 4 Nos. (13x500 MVA single phase units including one spare ICT Unit) (3 on Sec-I and 1 on Sec-II) • 400/220 kV, 500 MVA ICT – 10 Nos. (5 on Sec-I and 5 on Sec-II) • 765 kV ICT bays – 4 Nos. • 400 kV ICT bays – 14 Nos. • 220 kV ICT bays – 10 Nos. • 765 kV Line bays – 4 Nos. (2 on Sec-I and 2 on Sec-II) • 765 kV Sectionalisation bay: 1 -set • 400 kV Sectionalisation bay: 1- set • 220 kV Sectionalisation bay: 1 set • 1x330 MVAr, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactors) (1 on Sec-I and 1 on Sec-II) • 765 kV Bus reactor bay – 2 Nos. • 125 MVAr, 420 kV bus reactor- 2 Nos. (1 on Sec-I and 1 on Sec-II) • 400 kV bus reactor bay- 2 Nos. • 220 kV BC Bay-2 Nos. • 400 kV line bay – 1 No. (for interconnection of RE Project at Sec-I) • 220 kV line bays – 12 Nos. (for interconnection of RE Projects, 6 on Sec-I and 6 on Sec-II) **Future provision (space for):** ▪ 765/400 kV, 1500 MVA ICT along with bays- 2 Nos. (on Sec-II) ▪ 765 kV line bays along with switchable line reactors – 8 Nos. (4 Nos. on Sec-I and 4 Nos. on Sec-II) ▪ 765 kV, 330 MVAr Bus Reactor along with bay: 2 Nos. (1 on Sec-I and 1 on Sec-II) ▪ 400 kV line bays along with switchable line reactors– 12 Nos. (4 Nos. on Sec-I and 8 Nos. on Sec-II) ▪ 420 kV, 125 MVAr Bus Reactor along with bays: 2 Nos. (1 on Sec-I and 1 on Sec-II) ▪ 220 kV line bays: 3 Nos. on Sec-I and 3 Nos. on Section-II ▪ Establishment of 6000 MW, ± 800 kV Kalyanpur (GIS) (HVDC)	31.03.2030

S. No	Name of Transmission Element	Scheduled COD in months from Effective Date
	[LCC] terminal station (4x1500 MW) along with associated interconnections with 400 kV HVAC Switchyard and all associated equipment (incl. filters)/bus extension, etc. (2x1500 MW Poles on each 400 kV bus section) ▪ ±400 MVAr STATCOM with 400 kV bay – 2 Nos. (1 on Sec-I and 1 on Sec-II)	
2.	Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/C line	
3.	2 Nos. 765 kV line bays at Jamnagar (GIS) S/s – • 765 kV line bays- 2 Nos. (GIS)	
4.	Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/c line	
5.	330 MVAr Switchable line reactors on each circuit at Saurashtra (Sompipaliya) (GETCO) (GIS) end of Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/C line (with NGR bypass arrangement) • 330 MVAr, 765 kV switchable line reactor- 2 Nos. (7x110 MVAR single Phase Reactors including one spare unit for line reactors)) • 765 kV Switchable Line Reactor Bay - 2 Nos. (GIS)	
6.	2 Nos. 765 kV line bays at Saurashtra (Sompipaliya) (GETCO) (GIS) S/s • 765 kV line bays – 2 Nos. (GIS) (2 nos. complete diameters (Main-Tie- Main) to be considered	
7.	Installation of Synchronous Condenser (+300/-200 MVAr) (Minimum) and Short c0.ircuit contribution at PCC of 1200 MVA (Minimum) at Kalyanpur (GIS) – 2 Nos. Value of Inertia (Minimum) shall be 3000 MW-s • Synchronous Condenser along with associated 400 kV bay-2 Nos. (one on each Sec-I and II)	
8.	Creation of 220 kV switchyard along with Installation of 3x500 MVA, 400/220 kV ICTs at Jamnagar (GIS) S/s • Creation of 220 kV Bus Section-I • 220 kV BC Bay – 1 No. • 400/220 kV, 500 MVA ICT – 3 Nos. (on 400 kV and 220 kV Sec-I) • 400 kV ICT bays – 1 No. (*2 Nos. ICTs to be terminated in 2 nos. GIS bays being implemented as part of Diameter completion at Jamnagar S/s under "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I in Jamnagar area" scheme)* • 220 kV ICT bays – 3 Nos.	
9.	4 Nos. 220 kV line bays for RE interconnection at Jamnagar (GIS) S/s	

S. No	Name of Transmission Element	Scheduled COD in months from Effective Date
	• 220 kV line bays – 4 Nos.	

Notes:

i. *TSP of Jamnagar S/s shall provide space for above scope of work at Sl. 3, 8 and 9 on free of cost basis*

ii. *GETCO shall provide space for above scope of work at Sl.5 & 6 on free of cost basis*

iii. *Bay(s) required for completion of diameter (GIS) in one-and-half breaker scheme shall also be executed by the TSP.*

iv. *Above Syncons (at Sl. 7) shall be considered as 'transmission asset' similar to STATCOM and SVC for its tariff mechanism.*

C. Transmission Grid Map

Transmission Grid Map indicating the location of the Project is as below.



D. Location Details of Existing / Planned Substations

a) **Kalyanpur (GIS) 765/400/220 kV PS:** New substation which is to be implemented under present scheme

b) **Jamnagar (GIS) 765/400/220 kV S/s: Under finalization by the existing TSP**

c) **Saurashtra (Sompipaliya) (GETCO) (GIS) 765/400 kV S/s:**
22°04'44.1"N,
71°22'31.7"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.*

Annexure - A

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 Ministry of Power (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
Up to 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) In case of construction of transmission line of Voltage level 400 kV and above, under crossing of the existing transmission line 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 shall be as follows: -

A. For the following 765 kV lines under the scheme:

i. Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/C line.

ii. Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 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, 428.9 mm^2, Aluminium area, 28.62 mm diameter Maximum DC Resistance at 20°C (Ω/km): 0.0677 Minimum UTS: 131.44 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 ^{o}C.*

A.9.0 The required phase to phase spacing and horizontal spacing for 765 kV 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:

I. 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

(iii) Minimum ground clearance for 765 kV line: 18 m

(iv) 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 Stranded Steel (GSS) or Aluminum Alloy Conductor Steel Reinforced (AACSR) conductor type 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 transmission 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 up to 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 up to 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 330 kg/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 High Flood Level (HFL) 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.(a) 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 up to 765 kV level, which are installed in protected areas, shall be designed for Multi-circuit (4-circuits) configuration of same voltage level considering the Reliability Level and Design Span as per CEA (Technical standards for construction of Electrical Plants and Electric Lines) Regulations, 2022, as amended from time to time. 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.

It shall be ensured that Minimum ground clearance is maintained such that statutory Electrical Clearances and Electric Field limit of 10 kV/m at 1 m and 1.8 m from ground level are not violated.

A.20.(b) Routing of transmission lines through all Metropolitan areas, Municipal Corporations, Municipalities, Nagar Panchayats, and all Urban Planning areas notified by State Governments and Forest areas notified by the Ministry of Environment, Forest and Climate Change (MoEFCC), shall be avoided to the extent possible. However, if it is not possible to avoid these areas, then, in order to optimize Right of Way (RoW) in all Metropolitan areas, Municipal Corporations, Municipalities, Nagar Panchayats, and all Urban Planning areas notified by State Governments, for up to 400 kV transmission lines, Double Circuit Pole Structures designed with a Reliability Level and Design Span as per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2022 as amended from time to time) (preferably with insulated cross arms) shall be implemented.

It shall also be ensured that Minimum ground clearance is maintained such that statutory Electrical Clearances and Electric Field limit of 10 kV/m at 1 m and 1.8 m from ground level are not violated.

In case of more than TWO parallel Circuits up to 400 kV, the same shall be accommodated using Pole Structures designed for so many Circuits.

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 The stringing of the transmission line in forest area shall be carried out through drones.

A.24.0 The tower shall be designed considering the porcelain Insulators with creepage factor of 31 mm/ kV irrespective of type of insulator used.

A.25.0 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 , as amended from time to time.

Annexure – B

SPECIFIC TECHNICAL REQUIREMENTS FOR SUBSTATION

The proposed **Kalyanpur (GIS) S/s** shall be conventional Gas Insulated Substation (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.

Extension of proposed **Jamnagar (GIS) S/s shall be conventional Gas Insulated Substation (GIS)** shall be conventional Gas Insulated Substation (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.

Extension of proposed **Saurashtra (Sompipaliya) (GETCO) (GIS) S/s shall be conventional Gas Insulated Substation (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 Ministry Of Power (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 Kalyanpur (GIS) S/s		
		765 kV System	**400 kV System**	**220 kV System**
1.	System Operating voltage	765 kV	400 kV	220 kV
2.	Maximum Voltage of the system (rms)	800 kV	420 kV	245 kV
3.	Rated Frequency	50 Hz	50 Hz	50 Hz
4.	No. of Phases	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
ii)	Switching Impulse Withstand Voltage (250/2500 micro sec.) dry and wet	1425 kVp (for GIS) 1550 kVp (for AIS)	1050 kVp	-
iii)	One Minute Power Frequency dry Withstand Voltage (rms)	960 kV (for GIS) 830 kV (for AIS)	650 kV (for GIS) 630 kV (for AIS)	-
iv)	One Minute Power Frequency dry and wet withstand voltage (rms)	-	-	460 kV

6.	Corona Extinction Voltage	508 kV	320 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
8.	Minimum Creepage Distance for Insulator string/ longrod insulators/ outdoor bushings	24800 mm (31mm/kV)	13020 mm (31mm/kV)	7595 mm (31mm/kV)
9.	Minimum Creepage Distance for Switchyard equipment	24800 mm (31mm/kV)	13020 mm (31mm/kV)	7595 mm (31mm/kV)
10.	Max. Fault Current	50 kA	63 kA	50 kA
11.	Duration of Fault	1 sec	1 Sec	1 Sec

Sl. No.	**Description of parameters**	**765/400/220 kV Jamnagar (GIS) S/s**			**765 kV Saurashtra (Sompipaliya) (GETCO) (GIS) S/s**
		765 kV System	**400 kV System**	**220 kV System**	**765 kV System**
1.	System Operating Voltage	765 kV	400 kV	220 kV	765 kV
2.	Maximum Voltage of the system (rms)	800 kV	420 kV	245 kV	800 kV
3.	Rated Frequency	50 Hz	50 Hz	50 Hz	50 Hz
4.	No. of Phases	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
ii)	Switching Impulse Withstand Voltage (250/2500 micro sec.) dry and wet	1425 kVp (for GIS) 1550 kVp (for AIS)	1050 kVp	-	1425 kVp (for GIS) 1550 kVp (for AIS)
iii)	One Minute Power Frequency dry Withstand Voltage (rms)	960 kV (for GIS) 830 kV (for AIS)	650 kV (for GIS) 630 kV (for AIS)	-	960 kV (for GIS) 830 kV (for AIS)
iv)	One Minute Power Frequency dry and wet Withstand voltage (rms)	-	-	460 kV	-
6.	Corona extinction voltage	508 kV	320 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
8.	Minimum Creepage Distance for	24800 mm	13020 mm	7595 mm	24800 mm

Sl. No.	Description of parameters	765/400/220 kV Jamnagar (GIS) S/s			765 kV Saurashtra (Sompipaliya) (GETCO) (GIS) S/s
		765 kV System	400 kV System	220 kV System	765 kV System
	Insulator String/ Longrod Insulators/ outdoor bushings	(31mm/kV)	(31mm/kV)	(31mm/kV)	(31mm/kV)
9.	Minimum Creepage Distance for Switchyard Equipment	24800 mm (31mm/kV)	13020 mm (31mm/kV)	7595 mm (31mm/kV)	20000 mm (25 mm/kV)
10.	Max. Fault Current	50 kA	63 kA	50 kA	50 kA
11.	Duration of Fault	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 Kalyanpur (GIS)	One and Half breaker	One and Half breaker	Double Main Scheme
765/400/220 kV Jamnagar (GIS)	One and Half breaker	One and Half breaker	Double Main Scheme
765 kV Saurashtra (Sompipaliya) (GETCO) (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 Three (3) circuit breakers with associated isolators, earth switches, current transformers etc. for controlling Two (2) 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. Further, 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 future reactor banks) without its physical movement.*

vi) *Space for 765 kV and 400 kV future line bays shall be kept considering provision of switchable line reactors.*

vii) ***Bus sectionalizer:***

(a) One (1) set of bus sectionalizer for 765 kV shall comprise Two (2) Nos. of bus sectionalizer bays with associated Circuit Breakers, Isolators and Current Transformers for both buses.

(b) One (1) set of 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.

(c) *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 Kalyanpur (GIS):**

765 kV bay configurations (one and half breaker scheme) shall be as follows:

Configuration	Numbers
765 kV Bus section-I	
ICT- Tie- Line with switchable line reactor	*2 (two)*
ICT- Tie- Bus Reactor	*1 (one)*
765 kV Bus section-II	
ICT- Tie- Line	*1 (one)*
Bus Reactor-Tie- Line	*1 (one)*

400 kV bay configurations (one and half breaker scheme) shall be as follows:

Configuration	Numbers
400 kV Bus section-I	
ICT (400 kV side of 765/400 kV ICT)- Tie- ICT	*3 (three)*
Line-Tie-ICT	*1 (one)*
SYNCON-Tie-Bus Reactor	*1 (one)*
Line (Future) -Tie-ICT*	*1 (one)*
400 kV Bus section-II	
ICT (400 kV side of 765/400 kV ICT)- Tie- ICT	*1 (one)*
SYNCON-Tie-Bus Reactor	*1 (one)*
ICT-Tie-Future ICT (400 kV side of 765/400 kV ICT)	*2 (two)*
Line (Future) -Tie-ICT*	*2 (two)*

Note (*): GIS modules for Line Bay shall be provided by TSP under present scope for diameter completion with provision of Switchable Line Reactor in future.

765 kV Bus Sectionalization shall be with the following feeder distribution:

765 kV Bus Section-1	***765 kV Bus Section-2***
a) 3 Nos. of Present 765/400 kV ICT	**a) 1 Nos. of Present 765/400 kV ICT**
b) 2 Nos. of Present 765 kV Lines	~~**b)**~~ **2 Nos. of Present 765 kV Lines**
c) 1 No. of Present 765 kV Bus reactor	**c) 1 No. of Present 765 kV Bus reactor**
~~*d)*~~ *4 Nos. of Future 765 kV Lines*	*d) 2 Nos. of Future 765/400 kV ICT*
e) 1 No. of Future 765 kV Bus reactor	*e) 4 Nos. of Future 765 kV Lines*
	f) 1 No. of Future 765 kV Bus reactor

400 kV Bus Sectionalization shall be with the following feeder distribution:

400 kV Bus Section-1	***400 kV Bus Section-2***
a) 3 Nos. of Present 765/400 kV ICT	**a) 1 Nos. of Present 765/400 kV ICT**
b) 5 Nos. of Present 400/220 kV ICT	**b) 5 Nos. of Present 400/220 kV ICT**
c) 1 No. of Present 400 kV Line	**c) 1 No. of Present 420 kV Bus reactor**
d) 1 No. of Present 420 kV Bus reactor	***d)*** **1 No. of Present Synchronous Condenser**
e) 1 No. of Present Synchronous Condenser	*e) 2 Nos. of Future 765/400 kV ICT*
f) 4 Nos. of Future 400 kV Lines	

400 kV Bus Section-1	*400 kV Bus Section-2*
g) 1 No. of Future 420 kV Bus reactor *h) 1 No. of Future STATCOM.* *i) 2 Nos. for interconnections for 2x1500 MW Poles for 6000 MW, ±800 kV Kalyanpur (GIS) (HVDC) [LCC] terminal stations.*	*f) 8 Nos. of Future 400 kV Lines* *g) 1 No. of Future 420 kV Bus reactor* *h) 1 No. of Future STATCOM* *i) 2 Nos. for interconnections for 2x1500 MW Poles for 6000 MW, ±800 kV Kalyanpur GIS (HVDC) [LCC] terminal stations.*

220 kV Bus Sectionalization shall be with the following feeder distribution:

220 kV Bus Section-1	*220 kV Bus Section-2*
a) 5 Nos. of Present 400/220 kV ICT **b) 6 Nos. of Present 220 kV Lines** c) *3 Nos. Future 220 kV Line.*	**a) 5 Nos. of Present 400/220 kV ICT** **b) 6 Nos. of Present 220 kV Line** *c) 3 Nos. Future 220 kV Line.*

Line bays shall be complete along with line side equipment (such as LA, CVT, Wave Trap), gantry, protection panel etc. for termination of 400 kV and 220 kV lines for interconnection of RE Generation Projects.

xi) **765/400/220 kV Jamnagar S/s:**

765 kV:

Refer attached SLD Drawing no. 5427PW067-JAM-765-SYD-GSI-S3010-SL-0001 Rev.No. R2. For termination of Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/C line, TSP shall construct two Nos. diameters in Section-I with following bay configuration:

Configuration	**Number of diameters**
Line -Tie- ICT* (Future)	**1 (one)**
Line -Tie- Line* (Future)	**1 (one)**

Note (*): GIS modules for ICT bay and Line bay shall be provided by TSP under present scope for diameter completion with provision of Switchable Line Reactor in future for the Line bay.

400 kV:

Refer attached SLD DRAWING No. 5427PW067-JAM-765-SYD-GSI-S3010-SL-0001 Rev.No. R2.

a) Two (2) numbers of 400/220 kV ICTs shall be terminated in existing 400 kV diameters (Main Bay nos. 401 and 404). However, termination equipment such as SF6 to Air Bushings with associated GIS duct, LA, Protection panels etc. as required shall be provided under present scope.

b) One (1) number of 400/220 kV ICT shall be terminated in new 400 kV diameter (for one of 3 ICTs) to be constructed under present scope with bay configuration as follows:

Configuration	**Numbers**
ICT - Tie- Line* (Future)	**1 (one)**

Note (*): GIS modules for Line Bay shall be provided by TSP under present scope for diameter completion with provision of Switchable Line Reactor in future.

xii) In one and half breaker scheme, both main bay and tie bay shall be completed for controlling a feeder. Further, all associated interconnection work shall also be in the present scope of TSP.

xiii) 765/400 Saurashtra (Sompipaliya) (GETCO) (GIS): Refer attached SLD Drawing no. **GETCO/E/7S-600/P-002 Rev. No. R1**. For termination of Kalyanpur (GIS) – Saurashtra

(Sompipaliya) (GETCO) (GIS) 765 kV D/C line, TSP shall construct two nos. of new diameters with following bay configuration:

Configuration	Number of diameters
Line -Tie- Line* (Future)	2 (Two)

i) *Note (*): GIS modules for Line bays shall be provided by TSP under present scope for diameter completion, GIS duct shall be brought outside the GIS hall up to the SF6 to Air bushing (including bushings) for termination of future lines.*

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 Kalyanpur (GIS)		
		765 kV	400 kV	220 kV
1.	Bus Bar	5000 A	5000 A	3000 A
2.	Line bay	3150 A	3150 A	1600 A
3.	ICT bay	3150 A	3150 A	1600 A
4.	Reactor bay	3150 A	3150 A	N/A
5.	Bus Sectionaliser bay	4000 A	4000 A	3000 A
6.	Bus Coupler Bay	N/A	N/A	3000 A
7.	Synchronous Condenser Bay	N/A	3150 A	N/A

Sl. No	Description of Bay	765/400/220 kV Jamnagar (GIS)			765 kV Saurashtra (Sompipaliya) (GETCO) (GIS)
		765 kV	400 kV	220 kV	765 kV
1.	Bus Bar	4000 A	4000 A	3000 A	As per existing
2.	Line bay	3150 A	3150 A	1600 A	3150 A
3.	ICT bay	3150 A	3150 A	1600 A	N/A
4.	Bus Coupler Bay	N/A	N/A	3000 A	N/A
5.	**Reactor Bay**	**N/A**	**N/A**	**N/A**	**3150 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 up to 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 in case of fault in 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's website.

B.2.3 (765/√3) kV, Single Phase Shunt Reactor

110 MVAr, 765/√3 kV, 1-Phase Reactor (including arrangement for 3-phase bank formation of 330 MVAr) 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's 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 (66 kV and above Voltage Class)", as amended up to date. Technical parameters of NGR shall be as specified in Annexure-E 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.	330 MVAr Switchable line reactors on each circuit at **Saurashtra (Sompipaliya) (GETCO) (GIS)** end of Kalyanpur (GIS) – **Saurashtra (Sompipaliya) (GETCO) (GIS)** 765 kV D/C line (with NGR bypass arrangement)	**Saurashtra (Sompipaliya) (GETCO) (GIS)**	500

B.2.4 420 kV, 3- Phase Shunt Reactor

125 MVAr, 420 kV, 3-Phase Reactor 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.2.5 765 kV, 400 kV and 220 kV GIS Substation equipment

GIS (Gas Insulated Substation) shall be Indoor type in accordance to IEC: 62271-203. The switchgear shall be designed and specified to withstand operating conditions and duty requirements. All the switchgear such as Circuit Breaker, isolator, earth switch including CT, PT etc. shall be GIS type. The Surge Arrestor and Voltage Transformer shall be either GIS or outdoor AIS type.

The GIS assembly shall consist of separate modular compartments e.g. Circuit Breaker compartment, Bus bar compartment filled with SF_6 Gas and separated by gas tight partitions so as to minimize risk to human life, allow ease of maintenance and limit the effects of gas leaks failures and internal arcs etc. These compartments shall be designed to minimize the risk of damage to adjacent sections and protection of personnel in the event of a failure occurring within the compartments. Rupture diaphragms with suitable deflectors shall be provided to

prevent uncontrolled bursting pressures developing within the enclosures under worst operating conditions, thus providing controlled pressure relief in the affected compartment. The arrangement of gas sections or compartments shall be such as to facilitate future extension of any make without any drilling, cutting or welding on the existing equipment. To add equipment, it shall not be necessary to move or dislocate the existing switchgear bays. 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.

The bus bar modules including auxiliary bus modules (wherever applicable) shall be provided with suitable End Piece (Interface) module **on both sides** with the test link facility for future extension as per provisions of future requirements. The end piece module shall be designed in such a way so that future GIS modules may be tested without extending test voltage to existing bus and vice-versa by removing the test link.

TSP shall make available the complete details for the design of interface module such as cross section, enclosure material, enclosure dimensions (inner and outer), Flange diameter (inner and outer), conductor cross-section and connection arrangement, bolt spacing and dimension, rated gas pressure, Gasket detail etc. Further, adequate space for GIS busbar interface module shall be taken into account for future scope.

Each section shall have plug-in or easily removable connection pieces to allow for easy replacement of any component with the minimum disturbance to the remainder of the equipment. Inspection windows (View Ports) shall be provided for Disconnector Switches and both type of earth switches i.e. Maintenance and fast operating.

Local Control Cabinets (LCC) shall be provided as per requirement. The alarm and annunciation of GIS equipment shall be wired to the Supervisory Control and Data Acquisition (SCADA) System.

The material and thickness of the enclosures shall be such as to withstand an internal flashover without burns through for a period of 300 ms at rated short time withstand current. The material shall be such that it has no effect of environment as well as from the by-products of SF_6 breakdown under arcing conditions. This shall be validated with Type Test.

Service continuity requirement for GIS:

The GIS equipment with the given bus switching arrangement shall be divided into different gas compartments. During the work such as a fault repair or major maintenance, requiring the dismantling of a gas compartment for which more than one compartments may need to be de-gassed.

TSP shall meet following Service continuity conditions (to the extent possible) with ensuring equipment and operating personnel's safety:

- For One and half breaker bus switching scheme, during a fault in Circuit Breaker compartment, no bus bar and feeder is permitted out of service during maintenance and repair/replacement.
- During a fault in a GIS compartment other than the Circuit Breaker compartment, maximum of one bus bar and/or one feeder is permitted out of service during maintenance and repair/replacement.

UHF sensors in GIS for PD (Partial Discharge) detection:

The adequate number of Ultra High Frequency (UHF) sensors shall be provided in the offered GIS along with suitable portable type Partial Discharge (PD) measuring instrument for detection of Partial discharge (of 5 pC and above as per IEC 60270). The number and location of these sensors shall be based on laboratory tests on the typical design of GIS as per recommendations of CIGRE Document No. 654 (Application Guide for sensitivity verification for UHF Partial discharge detection system for GIS).

B.2.5.1 Circuit Breakers (GIS)

GIS Circuit breakers shall in general be of C2-M2 class and comply to IEC-62271-100. The rated break time shall not exceed 40 ms (milli second) for 765 kV and 400 kV. The rated break time shall not exceed 60 ms for 220 kV. Circuit breakers shall be suitable for 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 ohms with 9 ms insertion time or Controlled Switching Device (CSD). The Circuit breakers controlling 400 kV lines wherever required shall be provided with pre-insertion closing resistor of about 400 ohms with 8 ms insertion time or Controlled Switching Device (CSD) for lines longer than 200 km. The short line fault capacity shall be the same as the rated capacity and this is proposed to be achieved without use of opening resistors. Controlled switching device shall be provided in the Circuit Breaker of the switchable line reactor bay and in Main and Tie bay circuit breakers of line with non-switchable line reactors, Bus reactors and Transformers for 400 kV and above voltage class.

B.2.5.2 Isolators (GIS)

The isolators shall comply to IEC-62271-102 in general. Earth switches shall be provided at various locations to facilitate maintenance. Main blades and earth blades shall be interlocked and interlock shall be fail safe type. All isolators and earth switches shall be motor operated type.

The isolator shall be of extended mechanical endurance class-M2 and suitable for Bus Transfer Current Switching duty as per IEC standards. High speed earthing switches shall be provided for grounding purposes at overhead line terminations and cable terminations and shall have fault making capability as specified. Earth switch for line isolator shall be of earthing switch class E1 and shall be suitable for induced current switching duty as defined for Class-B as per relevant standard.

B.2.5.3 Current Transformers (GIS)

Current Transformers shall comply with IEC- 61869 in general. All ratios shall be obtained by secondary taps only. Generally, Current Transformers (CT) shall have five cores (four for protection and one for metering) whereas; CT in Tie bays shall have six cores (four for protections and two for metering) suitably distributed on both sides of CB (for 400 kV and above voltage class). 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 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 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 up to 400 kV voltage class and less than 10 for CTs of 765 kV voltage class.

B.2.5.4 Voltage Transformer (GIS)

The voltage transformers shall conform to IEC61869. Voltage transformers shall be of electromagnetic type with SF_6 gas insulation. The earth end of the high voltage winding and the ends of the secondary winding shall be brought out in the terminal box. The voltage transformers shall be located as a separate bay module and will be connected phase to ground and shall be used for protection, metering and synchronization. The voltage transformers shall be of inductive type, nonresistant and shall be contained in their own-SF_6 compartment, separated from other parts of installation. The voltage transformer shall be effectively shielded against high frequency electromagnetic transients. The voltage transformer shall have three

secondary windings out of which two shall be used for protection and one for metering. The voltage transformer should be thermally and dielectrically safe when the secondary terminals are loaded with the guaranteed thermal burdens. The accuracy class for protection cores shall be 3P. The accuracy of 0.2 on metering core should be maintained throughout the entire burden range on all the three windings without any adjustments during operation. 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.2.5.5 Surge Arresters (GIS) (if applicable)

624 kV Station High (SH) duty and 336 kV Station High (SH) duty and 216 kV Station Medium (SM) duty gapless type Surge arresters with thermal energy (Wth) of minimum 13 kJ/kV, 12 kJ/kV and 7kJ/kV respectively shall be provided for 800 kV, 420 kV and 245 kV system respectively conforming to IEC 60099-4 in general. 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. A leakage current monitor with surge counter shall be provided with each surge arrester.

B.2.5.6 SF_6 to Air Bushing

The 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.2.6 765 kV, 400 kV and 220 kV AIS equipment (as applicable)

B.2.6.1 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. The 765 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 either pre-insertion closing resistor of about 450 ohm maximum with 9 ms insertion time or with Controlled Switching Device. The short line fault capacity shall be same as the rated capacity and this is proposed to be achieved 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 400 kV and above voltage class.

B.2.6.2 Isolators (AIS)

The Isolators shall comply with IEC 62271-102 in general. 765 kV Isolator design shall be double break or vertical break or knee-type. All Isolators and earth switches shall be motor operated. Earth switches shall be provided at various locations to facilitate maintenance. Main blades and earth blades shall be interlocked and interlock shall be fail safe type. The 765 kV earth switch for

line isolator shall be suitable for induced current switching duty as defined for Class-B.

B.2.6.3 Current Transformers (AIS)

The 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 shall have six cores (four for protection and two 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 ten (10) for CTs of 765 kV voltage class.

B.2.6.4 Capacitive Voltage Transformers (AIS)

The 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.2.6.5 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.2.7 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 the 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, 400 kV and 220 kV lines shall have Main-I numerical three zone distance protection scheme with carrier aided inter-tripping feature. 765 kV, 400 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 hardware 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 30 km) having Fiber 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.

Further, all 765 kV, 400 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, 400 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, 400 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) Auto Transformer 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 Auto transformer 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) 765 kV and 400 kV Reactor Protection

Reactors 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 for the bus section under present scope shall also be provided.

Bus Bar protection system for new substation shall be de-centralized (distributed) type.

In case, the bus section is provided, then each side of bus section shall have separate set of bus bar protection schemes.

Peripheral Units (PUs) shall be provided by the respective bay owners.

For existing substations, the existing bus bar protection shall be augmented as per requirement. Separate set of bus bar protection schemes including necessary modification with respect to feeder distribution shall be provided where new bus sectionaliser is being implemented.

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.2.8 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 the new substations, the Substation Automation System (SAS) shall be suitable for the operation and monitoring of the complete substation including proposed future bays/elements.

In the existing substations with a Substation Automation System (SAS), augmentation of existing SAS shall be done for bays under the present scope.

In the 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 and processing equipment required to receive time signal through GPS/NavIC 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 will 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) Two (2) sets of 220 V battery banks for control and protection and 2 sets of 48 V 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. Two (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.

iii) Suitable AC and DC distribution boards and associated LT Switchgear shall be provided at new substation.

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 incoming feeder:

(a) 415 V 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 modules for all the feeders (including future as specified).

iv) At new Substation, one No. of DG set (minimum 500 kVA for substations withhighest voltage rating as 765 kV) shall be provided for emergency applications.

v) At new substation, sizing of battery and battery chargers shall be done based on the number of bays specified (including future bays).

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 from 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.

Optical Beam type heat detection for GIS hall fire protection system shall be provided for all the GIS halls.

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) along with 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.

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 GIS hall

The Gas Insulated Switchgear (GIS) of each voltage level along with other associated equipment shall be housed inside **separate** GIS building. The panels i.e. Bay level units, bay mimic, relay and protection panels, RTCC panels, PLCC panels, panels for tele-communication system etc. are to be placed in a separate room in the GIS building. The size of the room shall be such that all the panels for the bays under present scope shall be accommodated. The panel room shall be air-conditioned. Further, the temperature of the room shall be monitored through substation automation system by providing necessary temperature transducers. Ventilation system of suitable capacity shall be provided for each GIS hall.

One EOT Crane of suitable capacity for erection and maintenance of largest GIS component/assembly and all plant installed in the GIS switchgear room shall be provided in each GIS hall. The crane shall be capable of fulfilling all special requirements for erection and maintenance of GIS equipment. The capacity of the crane shall be sized to lift the heaviest GIS switchgear component.

For extension of existing GIS, existing facilities shall be suitably augmented/ extended for GIS equipment under present scope.

B.3.7 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.3.8 Visual Monitoring System (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), GIS bays, 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).

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 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 requirements/provisions mentioned above. However, interface points shall be considered keeping in view the existing design/arrangement at the substation.

c) **The TSP shall design the layout of the new substation in such a manner that no overhead transmission lines passes through the identified future area of switchyard expansion.**

d) **In case of GIS, adequate provisions shall be made to ensure that both the GIS hall and the substation switchyard can be expanded on either side of the existing GIS hall.**

e) TSP has to arrange for construction power and water on its own.

f) 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)

g) 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. 3150 A.

h) 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).

i) All electrical equipment shall be installed above the Highest Flood Level (HFL) 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.

j) As per CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2022 and 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.

k) TSP shall finalize the substation site/layout such that the corridor for the termination of lines, including future lines at the substation, can be accommodated without any constraints. Accordingly, forests, large water bodies, or hills adjacent to the substation

boundary should be avoided.

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.	**765/400/220 kV Jamnagar (GIS) S/s**		
1.0	Single Line Diagram	5427PW067-JAM-765-SYD-GSI S3010-SL-0001	R2
2.0	General Arrangement	5427PW067-JAM-765-SYD-GSI S2020-GA-0001	R2
3.0	Earthmat Layout		
4.0	Visual Monitoring System		
5.0	Bus Bar Protection		
6.0	Substation Automation System (SAS)		
B.	**765 kV Saurashtra (Sompipaliya) (GETCO) (GIS) S/s**		
1.0	Single Line Diagram	GETCO / E / 7S-600/ P-002	R1
2.0	General Arrangement	GETCO / E / 7S-600 / P-004	R1
3.0	Earthmat Layout	*To be provided after obtaining the same from owner i.e. GETCO*	
4.0	Visual Monitoring System		
5.0	Bus Bar Protection		
6.0	Substation Automation System (SAS)		

B.5.1 The existing drawings provided above and in subsequent amendments to the RfP are as received from the developer of existing substation and provided only for reference. Bidders shall follow the RfP for scope of work. Actual site conditions may be different due to other schemes being executed or subsequent revisions by the developer. Thus, Bidders are advised to visit the substation sites and acquaint themselves for details such as:

i. Actual site conditions, Layout, Topography
ii. Infrastructure such as roads, cable trench, drainage
iii. Space availability in existing control room and LT panel room
iv. Soil Investigation
v. Fire Hydrant Layout
vi. SAS architecture and IO list
vii. Boundary
viii. Design philosophy etc.

Annexure – C

SPECIFIC TECHNICAL REQUIREMENTS FOR SYNCHRONOUS CONDENSER

1. INTRODUCTION

This technical specification for Synchronous Condenser Stations consists of Synchronous Condenser (SynCon) units alternatively referred to as Synchronous Compensator where a SynCon unit consists of one synchronous condenser along with associated step-up transformer (s), cooling systems, flywheels (if applicable), auxiliary system and all associated switchgears.

Synchronous Condenser shall provide Inertia, Short Circuit support, continuous and dynamic supply of reactive power (capacitive and inductive) support for the regulation and stabilization of the voltage of 400 kV at Point of Common Coupling (PCC) under normal and transient conditions. The station shall operate in the leading and lagging MVAr region, as required to meet the specified inertia, short circuit requirements and reactive power capability curve and dynamic performance criteria.

The SynCon primarily shall be designed for continuous operation under varying grid conditions. The SynCon shall be equipped with a digital AVR (Automatic Voltage Regulator), Under/Over Excitation Limiters (UEL/OEL), V/Hz protection, and high inertia flywheels (if applicable) to enhance transient stability and damping.

The SynCon Station may consist of multiple identical synchronous condenser units, each operating in parallel and connected to the 400 kV HV bus (PCC), as per the design and space available. The minimum size of a syncon unit shall be 100 MVAr. The design shall ensure compliance with grid code requirements, and the provision of inertia and fault current to support reliable and stable system operation.

1.1 Definitions

For the purpose of this specification, the following definitions / abbreviations are used:

PCC (Point of Common Coupling): Point of Common Coupling (herein also called as Point of Interconnection (POI) is the connection point between the Synchronous Condenser (SynCon) Station/plant (HV Side of step-up transformer) and ISTS at which performance requirements are defined.

Reference Voltage (Vref): The voltage set-point at the PCC where SynCon is expected to regulate voltage by injecting or absorbing reactive power while maintaining system stability.

MV (Medium Voltage): The voltage level at the low-voltage side of the step-up transformer, where SynCon and associated equipment are connected.

SynCon (Synchronous Condenser): SynCon is a DC-excited Synchronous machine that runs at no load and is used to control reactive power, which improves voltage stability and power factor in electrical grids

In the entire document the notion synchronous condenser refers to the synchronous machine installed in the **Synchronous Condenser unit**. The synchronous condenser shall be connected to the step-up transformer via the generator circuit breaker by an Isolated Phase Bus duct.

Following convention is used in this specification to define the reactive power output of the *Synchronous condenser unit*:

a) The notion **capacitive reactive power** (indicated as "+ MVAr") is used when the

Synchronous condenser unit is injecting reactive power to the grid, i.e. when the synchronous condenser is operating in the overexcited capability range.

b) The notion **inductive reactive power** (indicated as "- MVAr") is used when the Synchronous condenser unit is absorbing reactive power from the grid, i.e. when the synchronous condenser is operating in the under excited capability range.

SynCon Unit (Synchronous Condenser Unit): In the entire document *Synchronous condenser unit* refers to the full scope of equipment working as one system at PCC. It includes but is not limited to:

(i) Synchronous Condenser and its auxiliaries.
(ii) Excitation System (Static/Brushless)
(iii) Flywheel and its auxiliaries, if option chosen
(iv) Step-up Transformers
(v) Generator Circuit Breaker (GCB)
(vi) Unit Transformer (Auxiliary Transformers)
(vii) Isolated Phase Bus Duct (IPBD) connecting Generator and Step-up Transformer
(viii) Lube Oil System
(ix) Auxiliary Power Supply (medium voltage/ low voltage)
(x) Equipment for control and protection of the equipment supplied under the specifications.
(xi) Reactive Power Oscillation Damper (RPOD)
(xii) Cooling System
(xiii) Other auxiliary systems required for power operation of the Synchronous Condenser.
(xiv) SynCon starting system (SFC/Pony motor)

AVR (Automatic Voltage Regulator): A digital control system associated with each SynCon Unit responsible for regulating the field excitation to maintain the terminal voltage or reactive power output, always fully redundant, this is channel A and B in terms of control and power circuits, with hot standby and automatic switch functionalities. AVR shall include functionalities like:

(a) UEL (Under Excitation Limiter): A protective function or control logic that prevents the SynCon from operating in unstable or under-excited regions of the capability curve, avoiding excessive reactive power absorption.

(b) OEL / OVEL (Over Excitation Limiter): A protection system that limits the field current to prevent thermal damage to the field winding during overexcited operation (i.e., high reactive power generation).

Flywheel: A rotating mechanical mass connected to the SynCon shaft to increase its inertia and provide additional damping and system strength benefits.

Step-up Transformer: A Transformer connecting the SynCon (MV side) to the ISTS (400 kV side i.e. PCC), designed to match voltage levels and system impedance characteristics.

Capability Curve: The operational envelope of the SynCon showing the permissible limits of reactive power generation or absorption with respect to voltage at PCC and stator current.

Lagging Operation: Operation in which the SynCon absorbs capacitive reactive power (under-

excited operation).

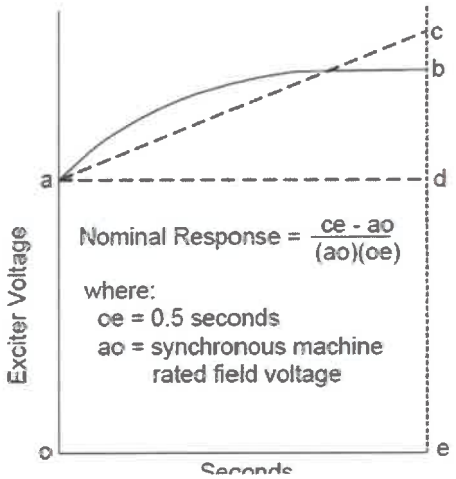
Leading Operation: Operation in which the SynCon generates capacitive reactive power (over-excited operation).

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 SynCon output settles to within ±5% of required control output.

Overshoot: The maximum system output minus the final settled value, divided by the actual change in system output (i.e., from its initial value to the final settled value), when the final settled value is within the defined settling band, expressed as a percentage.

Excitation response ratio: It is called the excitation system nominal response and defined as the rate of increase of the excitation system output voltage determined from the excitation system voltage response curve, divided by the rated field voltage. This rate, if maintained constant (curve ac), would develop the same voltage-time area as obtained from the response (curve ab) over the first half-second interval (unless a different time interval is specified). The RR is a measure of the speed of response for the excitation system, the higher the RR, the faster the response.



Response ratio

Reactive power oscillation damper (RPOD): A reactive power oscillation damper (RPOD) implemented through control strategy designed to damp low-frequency electromechanical oscillations (typically 0.2–2 Hz) in power systems by modulating the SynCon reactive power output (Q) in response to system oscillations. When equipped with an excitation control system and a power oscillation damping (POD) controller, it can also actively damp oscillations in the grid by modulating its reactive power.

1.2 APPLICABLE STANDARDS

Unless otherwise specified herein, the plant shall be in accordance with the latest edition and amendments of Indian Electricity Grid Code (IEGC), CEA Technical Standards, appropriate Indian Standard (IS), International Electrotechnical Commission (IEC) and Institute of Electrical and Electronics Engineers (IEEE) standards and their amendment thereof. In particular, the plant shall comply with the following Standards (as applicable):

CEA (Technical Standards for Connectivity to the Grid) and as amended time to time

IEC 60034 - Rotating Electrical Machines

IEC 60255-27 - Measuring relays and protection equipment (Product safety requirements)
IEEE C50.13 - Cylindrical-rotor 50 Hz and 60 Hz Synchronous Generators 10 MVA and Above
IEEE 115-Guides for Test Procedures for Synchronous Machines
IEEE 43 - Recommended Practice for Testing Insulation Resistance of Electrical Machinery
IEEE C37.013 - IEEE Standard for AC High-Voltage Generator Circuit Breakers Rated on a Symmetrical Current Basis
IEEE 421.5-2016 (IEEE Recommended Practice for Excitation System Models for Power System Stability Studies)
IEEE Std 1110-2019 - IEEE Guide for Synchronous Generator Modeling Practices and Parameter Verification
IEEE PES TR (2020) - Dynamic Performance and Application of Synchronous Condensers for Renewable Integration. (A technical report (not standard), but it explicitly describes the use of reactive power modulation for oscillation damping, with control block examples).

2. SCOPE OF WORK

The scope of works comprises the design, supply, factory testing, delivery, installation, commissioning and testing of the synchronous condenser unit (s), each of which comprises the key elements, but not limited to, the following:

(a) One XX MVA synchronous condenser (or as close as possible to this size) including rotor, stator, shaft, bearings, and base frame in case of cylindrical rotor or stator frame sole plates in case of salient pole solution, Excitation System and Voltage Regulating Equipment including Automatic Voltage Regulator (AVR), Power System Stabilizer (QSS) and Field Circuit Breakers for steady-state and dynamic voltage support

(b) Instrumentation, Monitoring and Control Systems including local and remote monitoring, diagnostic tools, and condition monitoring systems

(c) Slip Rings and Carbon Dust Extraction System (if static excitation system)

(d) One bank of three single phase transformer or three phase transformer XX MVA, xx / 400 kV step up transformer (size and secondary voltage to be finalised by the supplier, in accordance with the size of the offered synchronous condenser units) along with one spare (spare can be common for all the SynCon units), with secondary winding(s), complete with bushing CTs. Spare shall be of same rating as that of the main 1-ph or 3-ph transformer.

The synchronous condensers step-up transformers are to have continuous ratings that support sustained operation at all operating points on the reactive power capability curve

(e) 400 kV side bay equipment

(f) Bus duct (isolated) between the power transformer and the synchronous condenser

(g) Medium voltage generator circuit breaker complete with disconnectors, surge arresters, earth switches and instrument transformers (voltage to be confirmed by the supplier, in accordance with the size of the synchronous condenser units)

(h) Protection Systems including differential, overcurrent, under/overvoltage, out-of-step, loss-of-excitation, and backup protections.

(i) Static frequency converter (SFC) as per requirement

(j) Pony motor (s) for start–up (if required) and associated variable frequency drives

(k) Fly wheel (s) for increased inertia (as per requirement)

(l) One station transformer for auxiliary supplies in case one independent source of Auxiliary Power is a Station Transformer (this will be in common to all SynCon units)

(m) Unit Transformer (Auxiliary Transformers)

(n) LV auxiliary supply complete with back up supply

(o) LV surge arresters

(p) Control, SCADA and protection systems housed in a dedicated room inside the synchronous condenser building

(q) Fire walls and enclosures – as required by the fire and oil/water containment, or noise mitigations

(r) Any other equipment for completion of the complete installation of the synchronous condenser

(s) SynCon Building (PEB - Pre-Engineered Building) – (Common machine hall for SynCons of all the SynCon Station is acceptable to reduce the requirement of the number of EOT Crane.)

Each equipment shall be type tested. Further, in respect of type test, CEA's 'Guidelines for the Type Tests for Major Equipment of Power Sector' shall be followed.

2.1 System Studies and Compliance

The TSP shall be responsible for conducting system studies including steady-state, transient stability, dynamic simulations, and electromagnetic transient studies to evaluate the impact of Synchronous Condenser operation on the grid.

The Grid data required for the studies shall be provided by CTU.

All study files and reports shall be documented and submitted to **CEA/CTU/GRID-INDIA** as per regulatory requirements.

SynCon unit shall be designed to operate at rated MVAr capacity upto an ambient temperature of 40° C. Beyond ambient temperature of 40° C, TSP shall provide the derating curve, however, derating rate shall not be more than 1% of rated MVAr per degree Centigrade. There shall not be any impact on rated Short circuit current and Inertia due to increase in ambient temperature beyond 40° C. OEM/TSP shall submit temperature to MVAr derating curves (continuous & time limited). The SynCon shall be designed to support grid operation within a voltage range of ±10% and a frequency range of **47.5 Hz to 52.5 Hz at the PCC**.

2.1.1 System Studies

The TSP/supplier of Synchronous Condensers unit shall carry-out system studies in order to verify and demonstrate that the synchronous condensers units shall meet the specified performance requirements.

Load flow studies shall be performed in the initial stage to determine the optimal synchronous condensers units operating point for different system conditions.

The TSP/supplier of Synchronous Condensers unit shall perform studies to determine and confirm the design ratings and requirements of all plant and material to be supplied under this RfP.

The TSP/Supplier Synchronous Condensers may also refer IEEE Std 1110-2019 - IEEE Guide for Synchronous Generator Modelling Practices and Parameter Verification

System studies shall be performed as per the requirement. Studies are required to demonstrate that the synchronous condensers units shall meet all specified performance criteria.

When performing the designs, the following shall be considered:

1. All modes of operation specified in these specifications; and
2. The worst-case system conditions up to and including first contingency outage in the network.

The load flow and dynamic file shall be provided to the TSP in PSS/E 36 or newer version format.

PSS/E files are provided based on the data available at the time of issuance of RfP. TSP is required to validate the data before carrying out simulation. However, clarification, if any, may be sought before the bid submission. CEA/CTU shall endeavour to give clarification to the extent possible. In case of any discrepancy observed/non-availability of data for any of the machines and other control devices, typical values may be used in the studies with the intimation to CEA/CTU. The final tuning of generic parameters for various applicable scenarios shall be under the scope of TSP of the subject cited project. TSP after SPV transfer shall do the final tuning in consultation with CEA, CTU and Grid-India and share the converged dynamic files with CEA, CTUIL and Grid-India.

RMS and EMT Models shall be submitted in the format stipulated by CTUIL/ Grid-India.

2.1.2 Steady state operation study

The TSP/Supplier of Synchronous Condensers unit shall carry out such electrical studies and basic design studies as are required to design the synchronous condensers units. They shall perform design and verification studies to ensure adequate design and operation of the system.

This study comprises the verification of the design of the synchronous condenser units with respect to the steady-state performance. The steady-state operating points of the synchronous condenser units shall be simulated at the specified voltage range.

The main purpose of the steady state studies shall be:

1) Confirm short circuit capability including transformer
2) Confirm design of transformer OLTC and control settings
3) Demonstrate reactive capability including transformer under range of operating conditions

The operating points shall be represented as voltage/MVAR diagram. The load flow study points shall be also graphically included to determine the reactive power capability chart for the synchronous condenser units as built at the high voltage side of the step-up transformers. Additionally, steady-state voltages, currents and power through main components shall be demonstrated. The worst-case stresses of the individual components which occur on the operating points are input parameters for the component specification.

In addition to above, following test as per relevant International Standard shall also be carried out.

(a) No-Load Saturation Curve (Open-Circuit Characteristic, OCC)-Plot generated voltage vs. field current at rated speed — defines excitation requirements and saturation.

(b) Short-Circuit Characteristic (SCC)- Plot armature current vs. field current at rated speed with terminals shorted — used with OCC to compute synchronous reactance.

(c)Excitation System Performance Test (Steady-State)-Measure field current, voltage, and reactive power under rated voltage conditions.

(d) V-Curve (for Synchronous Condenser)-Plot stator current vs. field current at constant terminal voltage; determines stability margin and reactive power range.

(e) Reactive Capability Curve Test (for Condenser)-Determine leading and lagging VAR capability vs. field current and stator current limits.

TSP shall also submit Negative sequence impedance value.

2.1.3 Transient and stability study

Transient and stability studies shall be used to demonstrate the synchronous condenser unit control system performance, and, if applicable, to optimize the controller parameters of synchronous condenser unit during system disturbances, such as major faults or voltage changes at the PCC. Such studies shall be performed using the PSS/E and PSCAD software applying dynamic simulations, using a full PSS/E and PSCAD case. List of contingencies performed is attached in **Annexure E**.

The transient and stability studies shall be analysed in the following cases. These studies should demonstrate compliance with the relevant Performance requirements as per network configuration:

1. Analysis of the synchronous condensers unit's system response to step changes in the point of common coupling voltage or in the reference voltage, which can be performed in a single machine infinite bus case as relevant for the scenario.
2. Analysis of the synchronous condenser unit system response for faults for a range of system short-circuit power levels, to demonstrate compliance.
3. The following fault scenarios shall be analysed:
   a) A range of three-phase faults as specified (e.g. different duration, fault locations, retained voltage, network configuration).
   b) A range of unbalanced faults as specified (e.g. different duration, fault locations, retained voltage, network configuration).
   c) Control for the synchronous condenser units according to the requirement, i.e. Q-Control or U-Control
4. Analysis of the synchronous condenser unit system response for frequency disturbances.
5. V/Hz study and demonstration of stable operation of the V/Hz limiter

   The design shall ensure the adequacy of the synchronous condensers units in order to ensure stability during system transient, dynamic and fault conditions. This is inclusive of synchronous condenser units' response time (rise time and settling time) and of the synchronous condensers units' behaviour and contribution to the system's recovery from faults and network disturbances.

2.1.4 Small signal stability studies

1. **Voltage Step/impulse response—**

   +/- 5% step tests for Voltage control set points and then quantify rise time, overshoot, settling time for relevant control loops, and obtain frequency response (gain/phase margins) for critical control loops.

2. **Off-line frequency sweep (transfer function) tests for AVR and PSS:**

   Frequency response of the excitation system to be assessed over a frequency bandwidth of at least **0.01 – 10.0 Hz** by injecting sinusoidal signals with the specific bandwidth into the control blocks. The gain and phase variations with frequency of each measured transfer function are then compared with those obtained from the model

3. **Controller interaction studies** — evaluate interaction between synchronous condenser control loops (AVR, PSS/filter, reactive control, power/frequency control) and other nearby plant controllers (conventional generators, HVDC/FACTS, large converter plants). Include frequency-domain (Bode/Nyquist) and time-domain cross-validated tests as required.

4. **Oscillation Rejection Test:** This is a control and response sensitivity test. It is expected that SynCon model maintains a stable operation for all voltage modulated frequencies and for measured responses to be consistent with the changes.

   Grid voltage shall be modulated at following modulation frequencies through model playback or similar feature in SMIB model:

   (a) 0.1 Hz
   (b) 0.3 Hz
   (c) 0.6 Hz
   (d) 0.9 Hz
   (e) 1 Hz
   (f) 2 Hz
   (g) 3 Hz
   (h) 4 Hz
   (i) 8 Hz
   (j) 10 Hz
   (k) Or any other frequency based on requirement

2.1.5 Software simulation models

The TSP shall provide the latest PSCAD (V 5.0 or above) and PSSE simulation model(s) (V36.0 or above) and parameters to CEA/CTU/GRID-INDIA along with detailed documentation for the purpose of future simulation to adequately represent and model the proposed SynCon

system in the respective software:
For the simulation of SynCon unit in the PSS/E file (load flow and dynamic) and PSCAD (Transient), a model for SynCon unit is required for the study. TSP will share SynCon unit models with CEA, CTU and Grid-India along with detailed documentation for the 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 (UDM), confidentiality shall be maintained by the CEA, CTU and Grid-India.

Both UDM (PSCAD and PSS/E) and Generic model (PSCAD and PSS/E) shall be provided by OEMs to CEA/CTU/GRID-INDIA without any NDA (Non-Disclosure Agreement). RMS & EMT Models shall be submitted in the format stipulated by CTUIL/GRID-INDIA.

Model documentation shall include the following details of the model:

a) The transfer function block diagram must include all functional controllers and physical plant that materially affect the performance of the model.
b) Instructions on how the model should be set up and used.
c) The models of the controllers and items of SynCon unit must be easily identifiable.
d) Dynamic data must be provided as 'per unit' quantities on the machine megavolt amperes (MVA) base.
e) Shortest time constant (name, use and identifiable in the control block diagram) confirmed for both PSS/E models and also PSCAD models.

Model quality test of EMT & PDT model:

f) The submitted EMT & RMS (UDM) model shall be the representative of SynCon unit I with actual controls.
g) The EMT & RMS model should work appropriately within the PCC SCR range of 3 to 10 and X/R range of 3 to 14.
h) The applicable protections shall be appropriately modelled in the UDM Models.
i) EMT model should work appropriately on a range of simulation time step within 10-20us.
j) PDT (RMS) model work appropriately with a simulation time step of 1ms to 10 ms.
k) Submitted EMT model should have pre-compiled libraries and there should not be any need for loading dependent library/other files.
l) EMT model should initialize and complete the flat run in 5 sec. PSCAD & PSS/E models must allow stable initialisation and steady state run up to 5 minute.
m) Models must be initialised successfully for the entire intended plant operating range i.e reactive power set point from minimum to rated.
n) PSCAD models must have snapshot capability.
o) For User Define Model (UDM) EMT of SynCon unit, the complete model shall not be black-

boxed and there shall be a full visibility/accessibility of passive components. TSP may black box the control/other parts wherein their Intellectual Property (IP) rights are involved.

p) For UDM models, TSP shall submit the schematics/block diagrams and its descriptions.
q) The RMS & EMT model used guide should contain the description of each parameter.
r) The range of parameters shall be mentioned in the PSS/E and PSCAD model user guide.
s) TSP shall specify the configurable and non-configurable parameters in the model user guide (PSS/E and PSCAD) for both Generic as well as UDM.
t) Model structure to be contained within its own module block including its plots.
u) PSCAD transformer model should include transformer specific saturation data where available (and not default model library provided settings)
v) EMT Models shall be compatible with
   - Intel 15 Update 5 and newer (64-bit) and Visual Studio 2015 and newer
   - Model should works across a range of time steps and does not require a specific time step
   - These models must not be dependent on a specific Intel Visual FORTRAN version and should not have dependencies on additional external commercial software.

TSP shall fulfil and submit the technical connection data including models/data sheets etc. as per Grid India First Time Energization process & CTUIL Connection details process.

2.2 Functional Requirements

The Synchronous Condenser unit shall:

- Provide dynamic and steady-state reactive power support (both capacitive and inductive).
- Contribute to voltage stability, grid inertia, and short-circuit strength.
- Assist in damping of power oscillations and mitigation of sub-synchronous oscillations, if any.
- Assist in damping of reactive power oscillations and mitigation of oscillations, if any.
- Be capable of continuous operation during worst-case voltage and frequency conditions.

2.2.1 Design Considerations

- The Synchronous Condenser shall be designed with inertia specified to enhance system strength and frequency stability.
- Dedicated & coordinated control systems shall be provided in case of multiple SynCon units to ensure selective operation and avoid simultaneous tripping under common disturbances.

3. REQUIREMENT, RATINGS AND DESIGN INFORMATION

3.1 SynCon building

The SynCon station shall have independent building (PEB type) including a separate control room different from the main control room building of the main Substation. The building shall comprise of SynCons unit(s), EoT crane, control room, LT Switchgear room, Battery

room, workshop space, Document/Library and general facilities etc. Adequate space shall be provided for smooth unloading and maintenance purposes of all the equipment in the SynCon building.

The SynCon Building shall comprise of following facilities:

1. Control & Relay Panel room
2. Excitation Room
3. ACDB & DCDB room
4. Battery room
5. Service Room cum workshop space
6. Conference room
7. SynCon unit(s)
8. Lobby
9. Corridor with minimum width of 1600 mm
10. Portico
11. Toilet facilities
12. Provision of shaft for electrical, sanitary, water supply facilities
13. Other facilities as per functional requirement of building
14. AHU Room

4. Ambient Condition

The following environmental data shall be considered (Table-1):

Table 1

Sr. No.	System Parameters	Values
1	Max/min Ambient temperature (dry bulb one-hour average) Max dry bulb 24 hr. average	50 deg C max 0 (Zero) deg C min 40 deg C
2	Relative Humidity (%, max)	100
3	Average annual rainfall	As per rainfall map of IMD
4	Iso-keraunic level	As applicable
5	Wind Zone	As per National Building Code 2016
6	Seismic Level	As per Seismic zone of the site
7	Altitude above sea level	<1000 m
8	Pollution level (IEC 60815)	Heavy

5. POWER SYSTEM REQUIREMENTS

The following AC Power System characteristics apply at the point of connection i.e. point of common coupling in this case (PCC). SynCon Station operation is required within the parameter value and duration given in following table:

Table 2

Sl.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	440	kV
3.	Minimum continuous ac system voltage, line-to-line	360	kV
4.	Maximum short-term ac system voltage, line-to-line	As per HVRT Table	
5.	Maximum duration of item 4		
6.	Minimum short-term ac system voltage, line-to-line	As per LVRT Curve	
7.	Maximum duration of item 6		
8.	Nominal ac system frequency	50	Hz
9.	Maximum continuous ac system frequency	52.5	Hz
10.	Minimum continuous ac system frequency	47.5	Hz
11.	Lightning Impulse Withstand Voltage (LIWV)	1425	kV peak
12.	Switching Impulse Withstand Voltage (SIWV)	1050	kV peak
13.	Power Frequency Withstand Voltage	630	kV
14.	1) Maximum three-phase fault current a) for performance requirements b) for rating of SynCon 2) X/R (Positive/Negative Seq) 3) X/R (Zero Seq) 4) Clearing time - normal 5) Clearing time – backup	 1 a) 63 1 b) 63 2) 31 3) 12 4) 0.10 5) 0.75	 kA kA for 1s s s
15.	1) Maximum three-phase fault current (with IBR contribution)* 2) Maximum three-phase fault current (without IBR contribution)*	51.1 42.7	kA kA
16.	Minimum three-phase fault current (without IBR contribution)* -for performance requirements -for safe operation	 38.7 38.7	 kA kA
17.	1) Maximum single-phase fault current (with IBR contribution) * 2) Maximum single-phase fault current (without IBR contribution) *	43.6 35.6	kA kA
18.	Minimum single-phase fault current(without IBR contribution)*	32.8	kA
19.	Power System Phase Rotation	CCW	
20.	Rated voltage at SynCon terminals (to be selected by the Contractor)	xx	kV
21.	Capacitive capability on PCC at 1.0 p.u. voltage	+300	MVAr
22.	Inductive capability on PCC at 1.0 p.u. voltage	-200	MVAr
23.	Capacitive & Inductive capability on PCC at different	See below capability diagram	

Sl.No	Power System Characteristic	Value	Unit
	Voltages (p.u.)		
24.	HV Side rated Voltage (at PCC)	400	kV
25.	Voltage variation at unit step-up transformer high-voltage side (for normal operation)	±10	%
26.	Stored Energy - Inertia at Machine Terminal	>3000	MWs
27.	Short Circuit Contribution (SCC) on PCC at 1.0 p.u. voltage (calculation of SCC as per section 6)	>1200	MVA
28.	SynCon rated power factor	Zero	
29.	Rated frequency	50	Hz
30.	Maximum Overspeed shall not be more than % (of rated speed)	20	%
31.	Sub transient ratio xq''/xd''	< 1.1	
32.	Start-up and synchronization time (Contractor may offer lower times based on the SFC rating selected and overall Inertia of the SynCon & Flywheel)	30	Minutes
33.	Shut-down time to complete standstill	45	Minutes
34.	Stator winding connection	Wye	
35.	Neutral Grounding	High resistance grounding through Neutral Grounding Transformer with secondary loading Resistor	
36.	Sound pressure level (SPL) when measured at approximately 1 m distance from the Synchronous condenser surface during normal operation at rated ratings & ambient conditions.	≤90	dB (A)
37.	THD of L-L voltages	≤ 3%	
38.	**Temperature rise over 40°C cold air**		
	Stator winding (installed RTDs)	85	K
	Rotor winding (resistance method)	90	K
39.	**Unbalanced load**		
	Maximum value for continuous operation (I_2/I_n)	10	%
	Maximum short term unbalanced load $(I_2/I_n)^2.t$	20	s

*values calculated as per studies

6. Technical Requirements

6.1 General Requirements

(a) Under design maximum ambient temperature conditions, all the SynCon units in a SynCon Station, combinedly, shall have a nominal reactive power capability of not less than +300

MVAr at 0.9 p.u. voltage and -200 MVAr at 1.1 p.u. voltage, as measured at PCC, including all tolerances for components for the equipment installed inside the building such as the synchronous condensers, the pony motor, the fly wheel and the generator circuit breaker and for the equipment installed outdoor such as the step-up power transformers, the TEWAC cooling system, the station transformers, the isolated phase bus duct etc. The expected availability of the synchronous condenser unit shall be not less than 97%.

(b) Indicative schematic diagram of a SynCon unit and typical capability curve of a SynCon Station (+300 MVAr/ - 200 MVAr) are given below

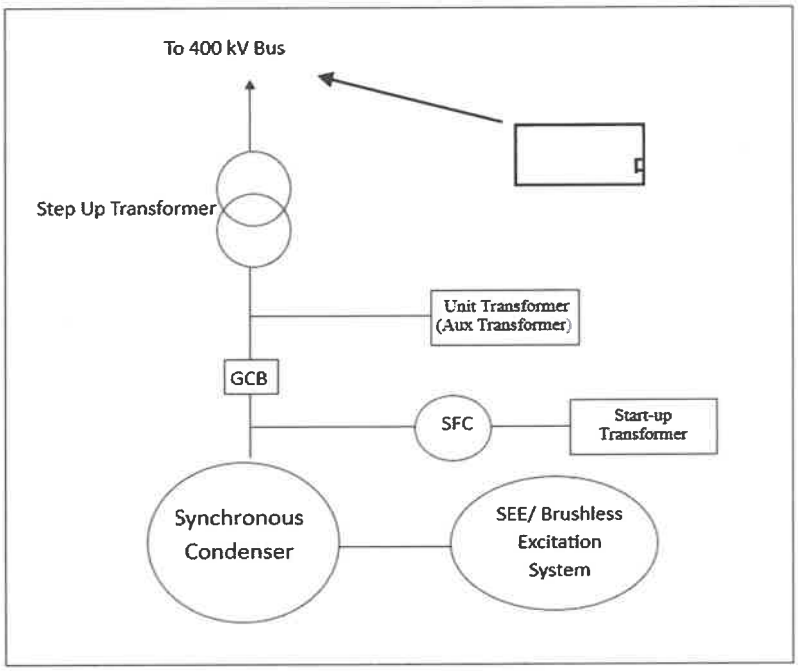
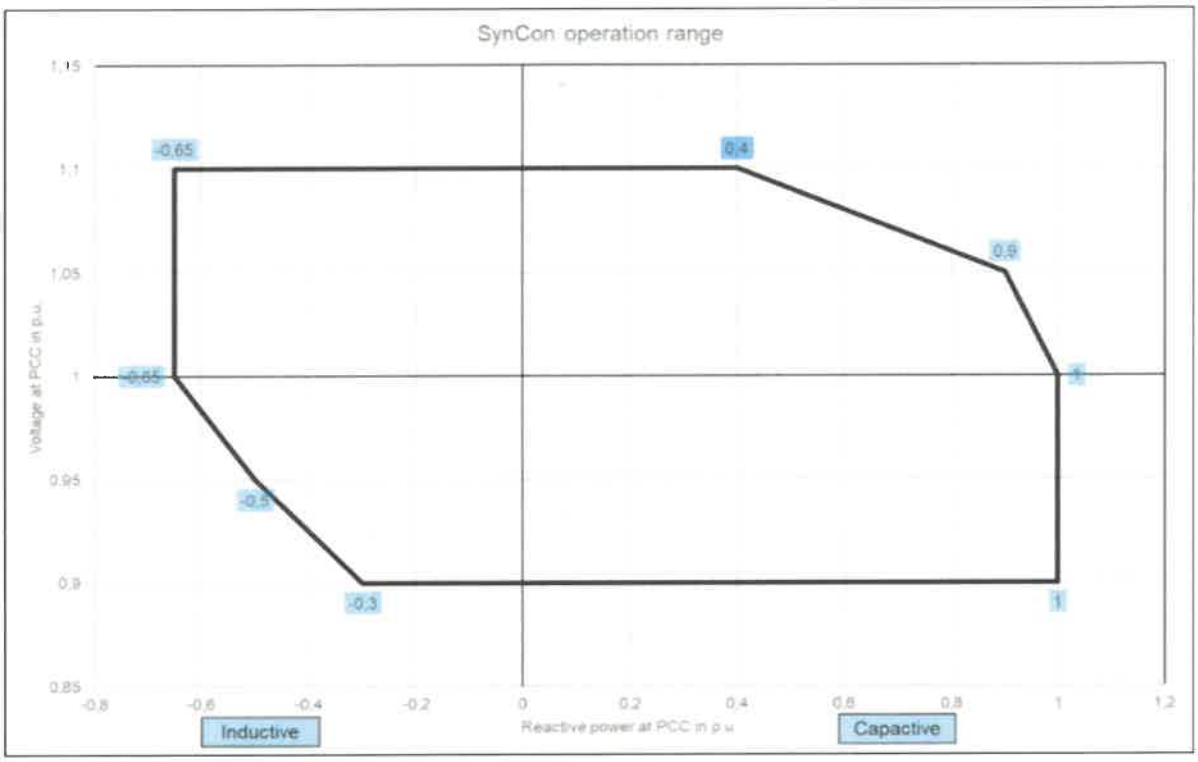


Figure-1: Conceptual Indicative Schematic diagram of SynCon Unit



Note: On x-axis, the base rating is taken as 300 MVAr

Figure-2: Capability Curve of SynCon Station

(c) The Terminal Voltage of SynCon shall be in the range of 10 kV to 28 kV.

(d) Insulation of SynCon shall be thermal class F for Stator and Rotor Winding as per relevant International Electrotechnical Commission with temperature rise limited corresponding to thermal class B insulation.

(e) The construction of the generator shall be such that the rotor poles and stator coils can be handled out or in without removal of the rotor and without disturbing the upper bearing bracket in case of vertically installed SynCon.

6.2 Voltage and Frequency

The synchronous condenser unit shall cope with voltage and frequency variation and stay in connection with the system for at least the minimum times as per Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007 and amendments.

The following ranges of voltage and frequency are applicable:

1) Nominal voltage shall be 400 kV (1.0 p.u.) phase to phase
2) Minimum continuous voltage of 0.9 p.u.
3) Maximum continuous voltage of 1.1 p.u.
4) Max negative sequence voltage during normal operation of 1% measured at the HV side of the step-up transformer over a 10-minute averaging period
5) Nominal frequency of 50 Hz
6) Maximum continuous frequency of 52.5 Hz
7) Minimum continuous frequency of 47.5 Hz.

The synchronous condenser unit shall be capable of withstanding frequency variation and maintain continuous uninterrupted operation for frequency ranges of 47.5 Hz to 52.5 Hz within a voltage range of ±10%. Further, the Synchronous Condensers Unit shall be capable of **unrestricted** and uninterrupted continuous operation for the following frequency ranges.

Table: Frequency Variations Withstand Requirements for Unrestricted Operation

Sl. No.	Frequency Range (Hz)	Duration
1.	49.5 to 50.5	Continuous
2.	49.0 to 49.5	10 Minutes
3.	50.5 to 51	10 Minutes
4.	47.5 to 49	5 Minutes
5.	51 to 52.5	5 Minutes

The Synchronous Condenser Units shall be capable of continuous uninterrupted operation for Rate of Change of Frequency (ROCOF) up to 4Hz/second for 0.25 seconds and 3Hz/second for 1 second. Rate of change of frequency (ROCOF) is calculated as the average rate of change for multiple calculated system frequencies for a time period of greater than or equal to 0.1 second The measurement of the rate of change of frequency shall not react to the sudden changes in the waveform of voltage caused by disturbance in the system i.e. during fault occurrence or clearance.

Provided that Frequency should be calculated over a window of time. Instantaneous calculated frequency should not be used for protection; this calculation should occur over a time window. Typical window/filtering lengths are three to five cycles (60–100 ms).

The SynCon Station shall continue to absorb reactive power (rated reactive power up to 1.1 p.u., and inherent reactive power beyond 1.1 p.u.) during HVRT Conditions as per the following Table-3.

Table-3

Nominal Voltage (pu)	Minimum time for remaining connected to the Grid and providing reactive power support (absorption)
V > 1.50	Instantaneous trip
1.50 ≥ V > 1.30	100 milli seconds
1.30 ≥ V > 1.10	10 seconds
V ≤ 1.10	Continuous

1 pu = 400 kV (3 phase RMS voltage at POI)

SynCon Station may be tripped if the respective temporary over voltages as mentioned above persist for more than its respective mentioned duration.

The SynCon Station shall continue to inject reactive power (rated reactive power down up to 0.9 p.u., and inherent reactive power below 0.9 p.u.) during LVRT Conditions as per the following Curve (Figure-3) for the specified time.

V_T : Actual Voltage; V_n: Nominal Voltage

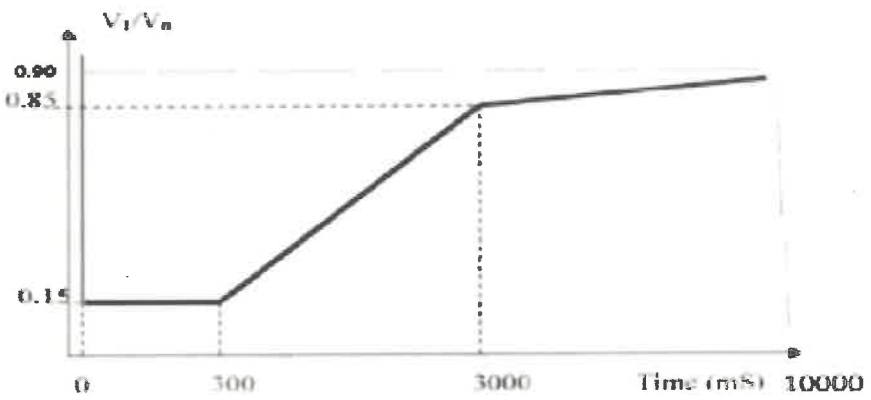


Figure-3: LVRT Curve

The synchronous condenser Station shall remain connected to the grid for a series of up to 10 voltage disturbance below 0.9 p.u within any 5-minute period as per the LVRT capability.

Provided that during such period synchronous condenser Station shall remain connected for at least 06 voltage disturbance below 0.5 p.u.

Provided further that during the multiple LVRT conditions, the SynCon Station shall meet the performance requirements specified in LVRT conditions.
TSP shall include the simulation tests to demonstrate the LVRT & HVRT compliance of SynCon and shall include the following simulations tests in the study reports on both Generic and UDM of PDT (RMS) and EMT models as per **Annexure-E:**

Validation of AVR & PSS response:
In order to validate the AVR and PSS response, TSP shall carry out the testing of such controller(s) either through Hardware In Loop (HIL) test or in a laboratory as applicable. Based on the AVR controller response (open loop and closed loop) and PSS response received from HIL, the TSP shall benchmark such results with simulation-based results.

6.3 Continuous Ratings

1) The Synchronous Condensers Units shall be capable of operating continuously without tripping at the Voltage level from 0.9 p.u. to 1.1 p.u. at PCC in the specified ambient conditions.
   There are additional requirements for operation for periods of time beyond the 0.9 and 1.1 p.u. Voltage as described in Table 3. The Synchronous Condenser Units shall confirm that they are capable of operating in accordance with these requirements.
   For the Voltage under 0.9 p.u. SynCon Units shall be capable to operate as per Figure-3.
2) The supplier of Synchronous Condensers shall select the nominal operating voltage for the low voltage side of the step-down transformers, to optimize the design of the Synchronous Condensers Unit(s)
3) The nominal continuous operating capability of SynCon Station shall be no less than 300 MVAr capacitive at 0.9 p.u. to no less than 200 MVAr inductive at 1.1 p.u. voltage as measured at PCC, including all tolerances for components upto designed temperature.

Component tolerances shall be considered, when designing against the requirement for continuous rating and considering design ambient temperature conditions. Beyond design maximum ambient temperature, TSP shall provide the derating curve, however, derating rate shall not be more than 1% of rated MVAr per degree Centigrade. OEM/TSP shall submit temperature to MVAr derating curves (continuous & time limited). There shall not be any impact on rated short circuit current and Inertia due to increase in ambient temperature beyond design maximum ambient temperature.

4) The Synchronous Condensers Units shall be capable of continuous uninterrupted operation for system frequencies in the ranges of 47.5 Hz to 52.5 Hz.
5) The voltage reference for the voltage control at the point of connection should be continuously (or using steps of negligible size) controllable in the interval 0.9 p.u. to 1.1 p.u.
6) The Supplier of Synchronous Condensers shall confirm that the synchronous condensers will be rated and capable to operate for all the frequency ranges listed.

6.4 Voltage and reactive power control

Voltage and reactive power control capabilities shall be as per requirement specified. The Synchronous Condenser unit shall be able to control the reactive power and voltage at the PCC by the excitation system and by use of unit step up transformer on-load tap changer (OLTC) regulation range as appropriate.

7. SHORT CIRCUIT CONTRIBUTION

The Synchronous condenser unit for project /substation shall be able to supply a short circuit power (Short-circuit power must be calculated according to IEC 60909-0:2016, using saturated sub-transient reactance and transformer impedance).

Calculation of short circuit contribution (SCC) shall be done according to following formula:

$$SCC = \frac{S_{SC}}{(X_d{}'' + \frac{S_{SC}}{S_T}\, u_k)}$$

S_{SC} = rated S [MVA] of SynCon

S_T = rated S [MVA] of transformer

$X_d{}''$ = subtransient direct – axis reactance (saturated) in p.u.

u_k = $unit\ step - up\ transformer$ impedance in p.u.

8. SYNCHRONOUS CONDENSER DESIGN AND CONSTRUCTION FEATURES

The Synchronous condenser unit installed shall be based on either salient pole (or) non-salient pole with air-cooling or water cooling. Hydrogen-cooled SynCon will not be accepted.

8.1 General Design Requirements

The synchronous condenser shall be totally enclosed water-air cooled (TEWAC) with air-water heat exchangers connected to a closed water-cooling system shall also be provided (as per system requirements).

The pipework shall be marked with colours and arrows to show which fluid is circulating which way in the respective pipe.

All necessary auxiliaries (lube oil system, cooling system), foundation plates and bolts, covers,

air and oil coolers with adjacent piping shall be included (if applicable).

Suitable arrangement shall be mounted inside the synchronous condenser enclosure to prevent condensation during shut-down periods.

Sensors, detectors, and instrumentation necessary for supervision and control shall be installed.

Detectors to provide signals for the speed measurement shall be installed. These detectors are also used for overspeed protection.

A vibration monitoring/protection system shall be provided.

Relative shaft vibration - monitoring; absolute bearing casing vibration – protection shall also be provided.

The synchronous condenser shall be designed for continuous operation and 10,000 starts/stops in its lifetime (35 years).

8.2 Inertia Requirement

If the specified inertia requirements as mentioned in the Table-2 cannot be achieved with the rotor only, the TSP shall consider the installation of an additional flywheel.

8.3 Stator

8.3.1 Stator Frame and Core

The stator frame shall be of welded construction and equipped with suitably arranged braces to ensure structural rigidity. The interior of the stator casing/stator frame partly forms the cooling ducts and therefore the braces in the stator frame shall be arranged in such a manner that an optimum air flow will be obtained.

For easier transportation (if required) the stator casing/stator frame can be split up into two sections. The sections of the iron core and of the stator casing shall be clamped together by means of liberally dimensioned bolts. Care will be taken to avoid vibrations at the insulated joints.

The stack of laminations shall form the active part of the Synchronous condenser and shall be made of silicon alloy steel sheets. The segments shall be coated with an insulating varnish of good thermal and mechanical properties on both sides and stacked interleaved.

The core shall be clamped between non-magnetic pressure plates. A certain number of through bolts to be provided for an adequate and permanent compression of the active core.

The compression fingers integrated in the pressure plates, distributing the pressure over the whole surface of the core uniformly.

The pressure fingers, plates and the core beams shall be designed to give stable and equal distributed pressure on the lamination.

The enclosure shall have openings to inspect the core and the windings.

All steelworks shall be thoroughly protected against corrosion.

Welded steel constructions shall follow relevant ISO standards.

8.3.2 Stator Core Tests

Before the stator winding is installed, the stator core shall be subjected to stator core loop test with high flux density (minimum 1T).

8.3.3 Stator Winding

The stator winding shall be three-phase with 6 terminals brought out from the synchronous condenser enclosure. Neutral of SynCon star point shall be earthed in NGT panel through dry type distribution transformer with secondary loaded with a resistor.

All material inside the slot and the winding insulation shall be of thermal class F. No kind of magnetic material, such as for slot wedges, is permitted within the slots.

The winding must be capable of being easily substituted by removing a few adjacent coils or bars (as applicable). The end windings must be suitably braced and supported by rings of non-magnetic materials to withstand any forces caused by short circuit at the terminals of the machine in grounded or ungrounded operation.

The stator winding insulation shall be made of thermosetting epoxy resin impregnated mica tape system and shall be equipped with corona protection systems suitable for the selected rated voltage.

8.4 Rotor

The shaft shall be forged of steel and sufficiently rigid. It shall have an ample margin of strength and be provided with a forged coupling to Flywheel or other (if applicable) and specified in the technical specification.

For cylindrical rotor design, the shaft shall be machined from a single alloy steel forging to give the required mechanical, metallurgical and magnetic characteristics. Rotor shall have an adequate margin between critical speed and the operating range of speed to ensure smooth running.

The rotor shaft and rotor itself shall be designed to withstand all the operating conditions as well as overspeed.

For salient pole construction, poles shall have claws to fit in matching claw slots accurately machined on the rim/ Rotor body. The pole along with field coil shall be properly secured in the slots and wedged there properly.

The rotor assembly shall be of such design that the assembling and dismantling can easily be done at site.

8.5 Damper Winding

A low resistance damper winding made of full-length copper rods or copper rotor wedges shall be provided on all the poles to dampen rotor oscillations. They shall be short circuited at the ends by a completely electrically connected ring on either side. The damper windings shall be strong enough to withstand all the electrical and mechanical stresses occurring during operation.

All contacts shall either be brazed or safely pressed by means of bolts and elastic elements. Contact surfaces of pressed contacts shall be protected against oxidization and corrosion, i.e. by appropriate galvanization.

8.6 Collector rings and brushes (if applicable)

The collector rings shall be insulated from the shaft system by epoxy glass laminations and spaced sufficiently apart and the brushes arranged to eliminate the possibility of accidental short circuit while changing or adjusting the brushes. The brush gear for the collector shall be mounted on insulated studs from the top of the exciter brush gear housing. The slip ring housing shall have sufficient space for maintenance purposes. There shall be provision for the

replacement of brushes while the machine is in operation, without interrupting the excitation or normal operation of the machine.

Carbon dust collection system shall be provided to remove carbon dust generated from carbon brushes. The filters used shall be metallic and washable type having high efficiency. The piping should be routed in a way to optimize spaces.

8.7 Rotor Winding/ Poles

The rotor winding shall have an insulation that fully conforms to thermal class 155 or higher. For salient pole type construction, the field poles shall be of laminated construction and the material used shall be of high strength. On both ends, end plates of high-grade steel shall bebe fitted. The pole core and the pole end plates shall be clamped together by screwed bolts. The insulation materials used shall provide sufficient mechanical strength.

8.8 Instrumentation

All temperature sensors shall be Resistance Temperature Detectors (RTDs) of preferably duplex type (alternatively suitable nos. of single element RTDs with spares in place of duplex RTDs are also acceptable) and be wired to a terminal box with shielded cables.

8.8.1 Stator winding/Core

Detection / measurements shall be provided by means of RTDs; i.e. at least 3 (three) active RTDs and 1 (one) spare RTD per phase and per circuit distributed between phases and circuits around the stator bore, located between the upper and lower bar in the same slot; at least 3 (three) RTDs in the core located at each end and in the middle.

8.8.2 Rotor winding

Rotor winding temperature shall be measured using either the resistance method or through RTDs as per IEC 60034-1. In case of RTDs, Sufficient number (at least 12) of preferably duplex type RTDs (alternatively suitable nos. of single element RTDs with spares in place of duplex RTDs are also acceptable) shall be provided, distributed as per OEM design to monitor the temperature.

8.9 Terminal Boxes

Terminal boxes shall be of weatherproof construction to eliminate entry of dust, vermin and water with a degree of protection IP54. The terminal boxes on the SynCon shall be suitable to connect cable size required.

The phase terminal of the windings shall be brought out of stator frame by appropriate means and interfaced to insulated phase bus of adequate size & capacity. The leads on the neutral side shall be brought out of the stator frame and shorted through a suitable size bus bar. Provision shall be made on the main (Phase) side & neutral side of the SynCon for mounting of required no of CTs for AVR, control, protection & metering.

The phase terminals or a fitted cubicle shall be suitable for IPB termination. Insulated protective cage cover connection between stator and bus duct for line terminals shall be provided for safety of O&M and personnel.

A suitable neutral grounding cubicle shall be fitted to the neutral terminals. The cubicle shall

allow for installation of all required CTs, neutral earthing via neutral earthing transformer and resistor.

Terminal boxes shall be provided for termination of the following signals/ terminals:

- Instrumentations
- Space heaters
- Temperature detectors

8.10 Bearings

The bearings shall be designed for the weight of the rotor of the synchronous condenser as well as for additional loads owing to abnormal service conditions.

The bearing pedestals may be a cast or welded structure, in any case providing the required strength and stiffness. To avoid the formation of shaft currents one pedestal is insulated from the foundation frame, pipe connections, etc. Suitable protection shall be provided to avoid the escape of oil and oil vapor via the shaft.

If the grid connection is tripped the synchronous condenser bearings shall be fed by the emergency DC pump from oil supply system until the synchronous condenser is on standstill (0 rpm).

The bearings shall withstand a defined overspeed of 10% during start-up.

A central oil mist extractor shall be present in the oil system to evacuate oil mist from the bearing housing.

The TSP shall ensure complete protection, control, and measurement for the bearing's safety and diagnosis, consisting of RTDs, at least one triple element (or two dual element) per bearing, to monitor bearing metal temperature.

8.11 Lube oil system

The flood lubricating system of the bearings shall be separately mounted. The oil plant shall comprise the bearing/oil container, the oil/water cooler for frictional heat dissipation, the flood-lubrication pump, as well as all necessary fittings, pipes, filters and supervisory instruments.

8.12 Lube oil pumps

A high-pressure oil system shall be provided for the bearing to avoid mixed friction at a low speed. A high-pressure pump with non-return valve shall take the oil from the sump and presses it between the lower part of the bearing and the shaft. The arrangement in the shell of the oil-jacked bearing ensures that no pressurized oil can infiltrate between the bearing lining and the shell.

The lube oil system shall have redundant (2 x 100%) oil pumps to supply lube oil to the bearings. They shall be fed by AC power supply. An automatic change-over from main to back-up AC pump shall occur in case of loss of lube oil pressure.

An emergency DC pump of sufficient capacity shall pump the oil until the synchronous condenser has come to a complete standstill in case of the grid connection is tripped. The DC pump shall be fed from the station battery.

8.13 Cooling system

To reduce the complexity of the synchronous condenser unit, the synchronous condenser

shall be air-cooled. H2-cooling is not permissible.

Extraction of losses shall be via water-to-air heat exchangers (TEWAC cooling scheme). The secondary cooling system i.e water to air heat exchanger, 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 SynCon unit.

In case of Water cooled Stator Winding, Stator water cooling System shall be closed loop type with 2x100% AC motor driven circulating water pumps, 2x100% de-mineralised water heat exchangers, 2x100% filters, one mixed bed de-mineraliser and one alkalizer unit (as applicable).

The scope of this system shall include but is not limited to:

a) a Pump skid with all relevant components and measurement devices
b) a Set of outdoor coolers (chillers).
c) an Expansion tank (installed on the pump skid)
d) a Refill unit (installed on the pump skid)
e) Connecting pipe system including pipe supports and interface flange connections
f) a Cooling system cabling, excluded cabling to the outdoor coolers and the outdoor temperature sensor.
g) an outdoor temperature sensor
h) all necessary foundation bolts for the cooling system and piping
i) Junction boxes for termination of control cables

The water-cooling system shall be connected to:

- the heat exchangers of the synchronous condenser to evacuate the heat generated by the machine.
- (if applicable) the fly-wheel's heat extraction system

The use of the coolant shall be adapted on the environmental condition listed in this specification.

The coolant shall be a mixture of ethylene or propylene glycol and water (with corrosion inhibitors as additives). If ambient conditions allow (ambient air permanently above freezing point) water with corrosion inhibitors can be used.

8.14 Monitoring sub-systems

Following On-Line monitoring sub-systems shall be provided for Synchronous Condenser:

8.14.1 Vibration Monitoring System

A continuous on-line vibration monitoring system complete with sensors, input/output module, control/processor unit, relays, junction boxes, cabling and associated accessories for measuring, monitoring and data acquisition of shaft vibration/run-out shall be provided.

The systems should be fully integrated with control system (SCADA) to facilitate shutdown and alarming, trending the values in SCADA for diagnosis.

8.14.2 Shaft Current online Monitoring of Synchronous condenser

A suitable shaft current online monitoring of Synchronous Condenser shall be provided to detect transient current in the synchronous condenser shaft.

8.15 Flywheel system (if applicable)

The flywheel shall be coupled to the synchronous condenser rotor.

The design shall enable a safe emergency run-down in case of total power loss (grid black-out). The required bearing lubrication during emergency run down shall be ensured by battery-powered DC pump, defined, and sized depending on unit specific parameters.

The main components of the flywheel assembly are the forged flywheel body and shall be coupled to synchronous condenser either directly or by means of attached shafts. The whole flywheel shall be supported by pedestal bearings.

The safe operation of the flywheel shall be covered by the standard protection concept for rotating power generation equipment, including overspeed, bearing temperatures and vibration limits.

8.16 Bearing and Shaft Vibration Measurement / Protection System

Two Proximity sensors (90º apart) and necessary provisions for the monitoring of shaft vibration amplitudes shall be installed on each bearing. The vibration measurement system for the bearing shall be integrated with the vibration system provided for SynCon.

At least two accelerometers per bearing shall be installed to monitor bearing casing vibration.

9. EXCITATION SYSTEM

9.1 General

Microprocessor based excitation system with thyristor control shall be provided to suit the Synchronous condenser characteristics. The excitation system shall comply with the requirements of IEC 60034-3 unless otherwise specified.

The excitation system may be offered as either:

- **Static Excitation System (SEE)** using controlled power electronic converters, **or**
- **Brushless Excitation System (BES)** using a shaft-mounted AC exciter and rotating rectifier assembly.

In case of SEE, the AC power required for the excitation shall be tapped from the SynCon terminal, stepped down by means of excitation transformers and rectified by fully controlled thyristor bridges and then fed to the SynCon field thereby controlling the voltage output. In case of Brushless Excitation System, the excitation power shall be supplied by a shaft-mounted AC exciter after rectification through a rotating diode bridge. The offered excitation system shall be capable of delivering desired synchronous condenser terminal voltage and reactive power within the specified limits during all the steady-state and transient operating conditions. Any change in the SynCon terminal voltage shall be sensed by the voltage regulator which shall automatically control the field excitation to restore the setpoint. The temperature of the field shall be determined by the resistance method.

9.2 Static Excitation System (SEE)

In case of SEE, it shall consist of following:

a) Excitation transformer.

b) A Set of Thyristor converters (fully redundant Thyristor bridges) of suitable numbers shall be provided. Power thyristor converter shall be fully controlled three phase, full wave bridge type with fast and high ceiling performance. The converter shall have 'N+1' redundancy where N is the number of bridges required to deliver rated excitation

current and the ceiling voltage or current and '+1' provides redundancy such that the failure of one power section does not lead to any operational limitations.

c) Facilities to ensure excitation power supply during starting

d) Field breaker and field discharge and suppression equipment.

9.3 Brushless Excitation System:

In case of BEE, it shall consist of following:

(a) Shaft-mounted three-phase AC exciter with stationary field and rotating armature

(b) Rotating rectifier assembly using high-reliability diodes with surge protection and with either complete bridge as redundant or at least one redundant parallel branch in each of the six arms of the bridge.

(c) No slip rings or brushes for main field current supply.

(d) Field flashing equipment shall be provided for voltage build-up and recovery under low residual conditions.

(e) Monitoring of rotating rectifier health via indirect measurement of exciter current, voltage, and unbalance detection.

(f) High ceiling performance with minimum 160% ceiling field voltage.

9.4 Regulator and sequencer

TSP shall provide Digital Controller and AVR having automatic voltage regulator mode (AVR) and field current regulator mode (Manual Mode), as well as the required sequencing and communication to the plant control system. It shall be according to following.

- Number of independent regulators: 2 (full N+1 redundancy, completely doubled hardware)
- Voltage Controller of PID-type/ PI type,
- Manual (field current) regulator, common hardware with AVR
- Bump less switch between voltage regulator and field current regulator
- Digital sequencer as part of the software
- Digital setpoint interface
- Synchronous condenser voltage and current sensing: 1 or 3-phase measurement.
- Reactive load compensation: raising/falling characteristic selectable
- Field current limitation including:
  - + Maximum limiter undelayed
  - + Maximum limiter delayed
  - + Minimum limiter undelayed
- Stator current limitation
- Over fluxing (Volts/Hertz) limiter
- Reactive power regulator
- Automatic generator voltage
- Thyristor conduction supervision via AC thyristor current measurement or detection of field voltage shape
- Soft start-up (provides smooth SynCon voltage increase according to required ramp)
- Interface to control system via suitable protocol.
- Power System Stabilizer
- Provision to connect to LAN and NTP time server.

- All Alarms and messages with timestamp.
- Fault recorder which records and stores curves in case of alarms or trips.

Auxiliary power supply to excitation control and protection shall include suitable redundancy such that failure of one auxiliary source shall not affect excitation system operation.

***Operation and monitoring*:**

Following Local operation and monitoring shall be provided via touch panel integrated in the front door of the control cabinet. Local operation Touch panel shall be Password protected.

- excitation ON/OFF
- setpoint RAISE/LOWER
- AUTO, MANUAL selection
- Voltage-/reactive power regulator or power factor regulator selection
- Alarms acknowledgement
- Indication shall include:
  - Measurement Values (SynCon Voltage and Current, Field current, SynCon active power, SynCon reactive power, SynCon power factor, etc.)
  - Event and Alarm lists
  - Other local functions

All alarms of the excitation system are stored and indicated on SOE list in correct time sequence. Furthermore, the two alarms "Excitation Alarm" and "Excitation Trip" are wired to the terminal strip for external use.

Further included components:

- 1 precision Shunt for field current sensing
- All MCBs with supervision contact
- Real measuring, analogue Meters in regulators cabinet front door, for field current, field voltage, stator current and stator voltage
- 4-20 mA signal for remote indication of excitation current
- 4-20 mA signal for remote indication of excitation voltage

9.5 Closed-Loop Control

The set points will be adjusted via the automatic follow-up function.

Each automatic channel shall have its own manual controller for field current control and its own voltage and current transformer for the processing of the SynCon terminal voltage and terminal current.

The excitation system shall provide three modes of operation:

- Manual mode: the excitation current is modified locally via the Human Machine Interface (HMI) installed in the excitation panel, the automatic voltage control functions and the limiters are deactivated (test mode or commissioning mode).
- Automatic Mode local: The automatic voltage control is active and the control setpoint for the terminal voltage control shall be modified via the HMI screen installed in the excitation panel.
- Automatic Mode remote: The automatic voltage control is active and the control setpoint for the terminal voltage control shall be modified via plant operation and control interface.

The excitation system shall be electrically and thermally capable of delivering continuously up to 110 % of the rated field current required at design ambient temperature.

The initial response ceiling voltage of the excitation system shall be adequate to meet the step response conditions as verified by Contractor/TSP - Synchronous Condensers design. The SEE shall be able to deliver a ceiling field voltage of minimum *160%* of the rated field voltage (field voltage applicable at rated field current, rated SynCon terminal voltage and defined rated reactive power rating of the SynCon).

The limiting functions of the automatic channel ensure that the SynCon is operated within its capability limits during grid operation. The following limiting and control functions shall be included:

- Stator current limitation
- Maximum field current limitation (field forcing)
- Over excitation limitation (field current)
- Under excitation limitation
- V/f limitation

The excitation system shall be provided with strategic spare parts.

The Excitation System shall have following step response characteristics:

Particulars	Description	Time
Response time	The duration from a step change in control signal until the voltage changes by 90% of its final change, before any overshoot.	Minimum 1 sec
Settling time	With the Syncol Unit unsynchronised following a disturbance equivalent to a 5% step change in the sensed Syncol Unit terminal voltage	Maximum 1.5 sec
	With the Syncol Unit	Maximum 2.5 sec
	Following any disturbance which causes an excitation limiter to operate.	Maximum 5sec

9.6 Power System Stabilizers

Power System Stabilizers (PSS) are used to enhance damping of power system oscillations through excitation control(s). TSP shall implement PSS controls in line with IEEE Standards 421. The PSS controller shall have configurable range of frequency (to damp) to have a flexibility during the operation phase.

9.7 Power Supply

In case of SEE, the excitation transformer shall be connected to SynCon isolated phase bus duct between generator circuit breaker and unit step up transformer or shall be supplied from the MV-busbar system. The excitation transformer shall be a three-phase, two-winding converter transformer. In the case of a Brushless Excitation System, the SynCon shall be provided with a shaft-mounted Permanent Magnet Generator (PMG) to supply independent power to the Excitation System, while the main rotor field excitation power shall be derived from the shaft-mounted AC exciter through rotating rectifiers.

9.8 Operating Aspects

The communication interface between the Excitation System and the plant operating control

system shall have redundant connection.

Signal exchange to the Excitation System shall comprise all commands for Excitation System and SFC operation and the set-point values for different Excitation System closed loop controls. The opposite direction from the Excitation System to the Synchronous Condenser unit control system shall include the feedback signals, actual values, and several alarm signals.

An operator control panel shall be installed on the front door of the control cabinet. Local or remote operation can be selected by using the key switch at the control cabinet door.

The operator control panel shall provide all required software tools to configure, maintain, and troubleshoot the excitation systems.

10. STARTING SYSTEM

The machine starting system shall be supplied as a complete system including all equipment, control and power part, hardware and software, to perform, control and supervise the actual start-up process.

The static frequency converter (SFC) shall be provided to accelerate the synchronous condenser from any speed to the nominal speed, so as to allow the synchronous condenser units connection to the network. Specifically, if any synchronous condenser is freewheeling (e.g. following a trip), the synchronous condenser shall be able to be accelerated by the SFC, without the need of having the synchronous condenser come to a complete rest. In addition to this the drive shall have the capability to decelerate the synchronous condenser following GCB opening.

The synchronous condenser, the excitation system, the start-up system, the start supply transformer etc. shall not be overloaded in any respect; thermally, over fluxed, high currents/ voltages or torque etc.

The normal start sequence duration shall be approximatively 30 min. (estimated time, required starting time< 30min) from the first rotation to required overspeed for successful synchronization.

At standstill, at the initialization of a sequence, the excitation shall be activated and supplying an excitation current to the rotor winding of the machine.

The SFC equipment will increase the frequency of the compensator until a running speed required for successful synchronization is achieved.

At this running speed of the SFC equipment, excitation is disconnected, and the exciting system of the compensator shall be activated.

The compensator achieves rated voltage and is synchronized into the grid.

If the synchronizing is unsuccessful, 2 further attempts shall be allowed.

11. Noise Levels

The overall noise level of the Synchronous Condensers Units yard shall be no greater than 85 dB(A) when measured at a distance of one metre and at a height of 1.5 metre from any equipment except SynCon. In case of SynCon, the noise level when measured at approximately 1 m distance from the Synchronous condenser surface during normal operation at rated ratings & ambient conditions shall not be more than 90 dB(A).

12. Step-up Power Transformer

The TSP shall provide single phase step-up transformers to operate as 3-phase bank with one

unit as a common spare for stepping up the voltage from a suitable medium voltage value to 400 kV system as required for replacing any one of the faulty phase units. Alternatively equivalent 3-ph transformer can also be provided, in which case spare transformer of same rating shall also be provided.

TSP can have a common spare as mentioned above for all such SynCon Units whose Step up Transformer rating is same.

Step up Transformer 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.

The Transformer shall be designed with the aim to achieve operation according to the overall performance requirements of the SynCon Station. The transformer should be designed and rated to carry complete capacitive and inductive reactive loading as specified for SynCon Station as well as harmonic currents associated with the most onerous operating conditions of SynCon Station, without loss of life.

The transformer shall be designed in accordance with the most up-to-date experience in SynCon application and shall incorporate the latest improvements of design currently employed in the industry. The Comprehensive design review of the Transformer of SynCon Station shall be carried out by the TSP.

12.1 General Requirements

The Step-up Transformer shall be designed electrically and mechanically for operating conditions peculiar to SynCon Station operation, which shall include, but not be limited to the following:

a) 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 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.

b) 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.

c) The transformer shall be capable of withstanding the mechanical stresses caused by symmetrical or asymmetrical faults on any winding.

d) All protection class Current Transformers in the 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 Transformer manufacturer.

e) 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° (degree) 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.

f) 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

Table 4

Sl. No.	Description	Unit	Technical Parameters
1.1	Rated Capacity		
	HV	MVA	To meet the performance requirement and ratings of SynCon. The transformer shall be suitable for 100% reactive loading
	MV	MVA	
1.2	Voltage ratio (Line to Line)		XX (*)/400 kV
1.3	Single / Three Phase Design		Single phase/Three phase
1.4	Applicable Standard		IEC 60076
1.5	Rated Frequency	Hz	50
1.6	Cooling and Percentage Rating at different cooling		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	°C	50
ii)	Average winding measured by resistance Method	°C	55

Sl. No.	Description	Unit	Technical Parameters
1.13	Windings		
i)	System Fault level		
	HV	kA	63
	MV	kA	To suit the design requirements.
ii)	Lightning Impulse withstand Voltage		
	HV	kVp	1425
	MV	kVp	*
	Neutral	kVp	170
iii)	Switching Impulse withstand Voltage		
	HV	kVp	1175
iv)	One Minute Power Frequency withstand Voltage		
	HV	kVrms	630
	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		*
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	1550
	MV	kVp	*
	Neutral	kVp	170
iv)	Switching Impulse withstand Voltage		
	HV	kVp	1175
v)	One Minute Power Frequency		

Sl. No.	Description	Unit	Technical Parameters
	withstand		
	Voltage		
	HV	kVrms	750
	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	%	≤ 0.5
	MV	%	
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 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)".

(*) marked parameters shall be decided based on SynCon manufacturer's requirement

 # Tan δ value of OIP/RIP/RIS condenser bushing shall be 0.005 (max.) in the temperature range of 10°C to 40°C. If tan delta is measured at a temperature beyond above mentioned limit, necessary correction factor as per IEEE shall be applicable. The measured Tan δ value at site should not exceed by 0.001 w.r.t. factory results (measured at approx. similar temperature conditions) during warrantee period.

13. Generator Circuit Breaker

The Circuit Breaker shall in general be of G2/M2 class and comply to IEC/IEEE 62271-37-013:2021. They shall satisfy the General Technical Requirements and shall be designed to operate in the environmental conditions specified in this specification.

14. Bus duct

(a) The generator bus duct shall comply with the requirements of the latest versions of relevant Indian Standards or International Electrotechnical Commission standards.

(b) The bus duct shall be designed to carry maximum continuous current under normal site conditions without exceeding temperature rise limits. Based on these requirements standard size of bus duct as per relevant Indian Standards or International Electrotechnical Commission standards shall be used.

(c) Generator bus duct shall be segregated or isolated phase type. Bus duct rated more than 3150 Amperes shall be isolated phase type. The isolated phase ducts shall be preferred over the segregated phase bus ducts. The bus duct rated more than 6000 Amp shall be continuous isolated phase type.

(d) A hot air blowing system or air pressurization system shall be provided to prevent moisture deposition in case of isolated phase busducts while space heaters may be provided in case of other bus ducts.

15. Selection of Insulation Levels

9.1 Surge Arrestors

Protective levels of arresters connected to the 400 kV AC Bus Bars of the SynCon Station shall be coordinated with the insulation and surge arrester Characteristics of the 400 kV AC systems to which the SynCon Station is to be connected. The specification and characteristics of the surge arresters installed in 400 kV AC system is given in Substation specification. The front of wave (FWWL), lightning impulse (LIWL) and switching impulse (SIWL) withstand levels 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 above minimum basic requirement of the various insulations level of 400 kV equipment shall be as below. The SynCon Station equipment, Step-up Transformers etc. shall be co- ordinated accordingly.

	SIWL	LIWL
All equipment other than Transformer Bushing,Transformer winding and GIS Equipment (Bay)	1175 kVp	1550 kVp
GIS Equipment (Bay)	1050 kVp	1425 kVp

9.2 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 SynCon Station to a target value of one flashover in 15 years.

9.3 Switchyard

The air clearances for switchyard equipment shall be equal to or greater than minimum values

as specified in IEC-60071. Altitude correction factor (if any) shall also be considered as per IEC.

9.4 Leakage distances

The Creepage/leakage distance across insulation shall be determined by the TSP and shall be adequate to ensure that under condition of heavy pollution, the probability of a flash over 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 minimum 31mm/kV.

16. PROTECTION SYSTEM

The synchronous condenser unit shall have a protection system with necessary back-ups to protect the equipment from critical failures and faults. The protection systems shall be secure and reliable to minimize any damage due to faults in the system. Protection relays shall be numerical type.

The mechanical protection (overtemperature, vibration) should be implemented in SynCon control panel system.

16.1 General Protection Concept

The function of the protective equipment is the detection of faults and the minimization of further damages. The selected protective system must ensure that faults are detected fast, selectively acted upon, and announced to the owner of the station. The protection system must ensure correct behavior during normal operation of the synchronous condenser unit even in case of faults outside the protected zone. The protective systems shall be independent of other equipment according to the protection philosophy.

The protection equipment must be designed with a comprehensive monitoring function to provide a high level of reliability and to avoid unnecessary shutdowns due to protection equipment malfunction. The monitoring system must elicit an alarm and block protection in case of internal defects.

A redundancy concept of the protection system design shall apply to the SynCon and the machine transformer consistently throughout by duplicating all the essential components. All implemented protection functions shall be doubled in the main A and main B protection relays. The redundancy starts with separate instrument transformer cores and continues through the protection relays and trip signal, which must pass through separate DC voltage paths to switchgear with 2 circuit-breaker trip coils. All protection zones shall have overlapping zones by using different CT's or CT cores. The protection relays shall be mounted in separate panels for A and B protection.

The auxiliary transformers shall be protected with overcurrent protection function.

16.2 Protection zones

The protection system for the synchronous condenser unit must be divided into various protection zones:

- Protection for the high voltage side of machine transformers

- Protection for the machine transformer included the isolated phase bus
- Protection for the synchronous condenser
- Protection for the MV/Auxiliary transformer

For the main protection zones common tripping relays must be used for protection A and B.

All types of faults that shall be detected by the protection system.

- Heavy short circuit faults (2 / 3 phase- and double earth fault) based on differential (ANSI 87) and overcurrent measuring (ANSI 50/51) principle.
- Single earth faults at the SynCon side of the transformer and IPB system by displacement voltage detection without selection where the fault happened.

16.3 Protection Functions

A. Minimum Synchronous Condenser Protection Functions

Function	Main A	Main B
Biased SynCon Differential Protection (87 G)	Y	Y
95% Stator Earth Fault Protection (64 G1)	Y	N
100% Stator Earth Fault Protection (64 G2)	N	Y
Loss of Field Protection (40G)	Y	Y
Backup Impedance Protection (21G) G)(21GProtection)	Y	Y
Overvoltage Protection (59G)	Y	Y
Negative Phase Sequence Current Protection (46G)	Y	Y
Under Frequency Protection (81G)	Y	Y
Overload Protection for SynCon (51G)	Y	Y
Rotor Earth Fault Protection (64R)	Y	Y
Under Excitation Protection	Y	Y
Bearing Current Protection (50SC)	Y	Y
SynCon Pole slipping protection (98G)	Y	Y
Excitation System Overcurrent Protection (50/51 EXE)	Y	Y
Dead machine (27/50G)	Y	Y

B. Step Up Transformer Protection Functions

Function	Main A	Main B
Step-up transformer differential protection (87T)	Y	Y
Restricted earth fault protection	**Y**	**Y**
Overcurrent Protection	Y	Y
Over fluxing Protection	Y	Y
Back- up earth fault protection on Step-up transformer HV neutral (51NGT)	Y	Y
Buchholz Protection	Y	N
Pressure relief valve (PRV) Protection	**N**	**Y**
LV Winding Temperature Protection	N	Y
HV Winding Temperature Protection	Y	N
Oil temperature Protection (49)	**Y**	**Y**

C. Unit Transformer Protection Functions (Auxiliary Transformers)

Function	Main A	Main B
Restricted earth fault protection (64)	**Y**	**Y**
Instantaneous over current protection (50)	**Y**	**Y**
IDMT over current protection (51)	**Y**	**Y**
Back up Earth Fault Protection	**Y**	**Y**
Buchholz Protection	Y	N
Pressure relief valve (PRV) Protection	N	Y
LV Winding Temperature Protection	Y	N
HV Winding Temperature Protection	N	Y
Oil temperature Protection (49)	**Y**	**Y**

D. Pony Motor Protection Functions (if applicable)

Function	Main A	Main B
Overcurrent	Y	N
Overload / Thermal Protection	Y	N
Undercurrent Protection	Y	N
No of Starts Limiter	Y	N

E. Generator Circuit Breaker

Function	Main A	Main B
Current Checked Circuit Breaker Failure Protection	Y	N
Trip Circuit Supervision	Y	Y
Synchronizing	Y	N

F. Breaker Failure Protection

a) High voltage circuit breaker

Each trip to the high voltage circuit breaker must simultaneously initiate a breaker failure start in the high voltage feeder protection system. This signal must be integrated in the high voltage feeder protection relay, which executes the breaker failure protection.

b) Generator circuit breaker

In case the generator circuit breaker does not open after a trip command, the breaker failure function in the SynCon protection relay must send an inter-trip signal to the high voltage circuit breaker.

The start of the breaker failure protection shall be realized over a signal from the trip relays to a binary input to the protection relays. This ensures that all trip signals will start the breaker failure function. The breaker failure protection supervises the current and the auxiliary contacts of the circuit breaker.

Generator Circuit Breaker Control

The control of the generator circuit breaker and the related disconnectors/earthing switches shall be implemented in synchronizing device.

Interlocking

The electrical interlocking shall be implemented in the software logic of the control device. The interlocking shall be realized with hardwired release signals. The release signal of the earthing switch and disconnector to and from the HV switchgear will be send as electrical signal. The earthing switch on the SynCon side must be interlocked with a release signal from the SynCon control system (it is only possible to close the earthing switch if the SynCon is stopped).

Synchronizing the SynCon

For the Synchronous condenser synchronizing a synchronizing relay shall be used. This synchronizing relay must work as a synchronizer. The synchronization of the SynCon to the grid shall be part of the start sequence of the SynCon control. In the synchronization step, synchronizing device monitor the voltage, the frequency, and the phase angle on both sides of the generator circuit breaker. The synchronization device will send increase or decrease commands to the excitation system until the Synchronous condenser voltage matches the grid voltage. If the voltage, frequency, and phase angle are within the set limits the close command to the generator circuit breaker will be issued by the synchronizing device.

16.4 Control and Protection SFC-MV Switchgear

The control of the medium voltage feeder for the SFC can be implemented in multifunctional control & protection relays.

16.5 Control of Auxiliary System

The control of the auxiliary system shall be implemented in the SynCon control panel.

16.6 Voltage Regulator for the Tap Changer

The control of the voltage regulator of the Main Transformer (On Load Tap-Changer) and monitor auxiliary transformer (Off Load Tap-Changer) shall be implemented in a SynCon control panel.

16.7 Communication and Time Synchronization

Communication to Control System

The protection and control devices shall be connected to the plant control system through an optical Ethernet communication network configured in a ring or other redundant topology. Communication shall be based on the IEC 61850 standard. All protection and control signals, including trip signals, shall be transmitted to and processed within the plant control system and shall be displayed and monitored through the HMI system.

Time synchronization must be realized over the same interface. Time synchronization to protection devices shall be over network time protocol. TSP shall follow CEA (Cyber Security in Power Sector) Guidelines, 2021.

16.8 Specific Requirement for Phasor Measurement Units (PMUs)

TSP shall supply, install and commission required No. of Phasor Measurement Units (PMUs) as per the "Guidelines on Unified Philosophy for placement of PMUs in Indian Grid" issued

vide CEA letter No. CEA-PS-14-12/9/2024-PSETD Division dated 19.03.2025 for the SynCon. The PMUs shall be provided with LAN switch and shall connect with LAN switch of control room of respective substations/ generating stations with Fibre Optic cable. The 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.

16.9 Fault Recorder

Devices

The integral fault recorder function of the protection relay shall be used for recording of the current, the voltage and the trip signals during a fault in the electrical system.

If a trip occurs anywhere within the system, all fault recorders of all protection relays shall be triggered by a hardwired binary signal. This ensures that all relevant binary and analogue signals of the whole system will be recorded in case of a fault.

For testing and monitoring purpose, a manual trigger of the fault recorders must be foreseen.

Data Storage

The transfer of the fault/ disturbance records should be performed over the communication interface and the IEC61850 protocol.

Fault Analyses

Evaluation and analyses of the fault records take place on the engineering workstation.

16.10 Generator Disturbance Recorder (DR)

a) One No. microprocessor-based Disturbance Recorder (DR) shall be provided for each synchronous condenser to record graphic form of instantaneous values of voltage and current in all three phases and neutral, open and closed positions of relay contacts and breaker during disturbances.

b) It shall have the facility for slow and fast scan to record transient and dynamic performance of the system.

c) Both slow and fast scan facility shall have atleast 8 analog and 16 digital inputs.

d) The slow scan facility shall be provided with the following minimum features

- The input shall be MW, MVAR, field voltage, frequency and generator terminal voltage etc. Any transducers, if required for interfacing, shall be provided.
- It shall be suitable to record the frequency excursions and response of generator field and governor control on system fluctuations.

- It shall have options to select the scan rate in the range having a min. of 10Hz suitable to facilitate capture of low frequency waveforms in the range of 0.5 - 3Hz.
- The non-volatile memory shall be suitable for recording for a minimum of 15 minute at scan rate corresponding to selected pre-fault zone of recording.

e) The fast scan facility shall be provided with the following minimum features

- The input shall be voltages and current etc. Any transducers, if required for interfacing, shall be provided.
- It shall have scan rate of 1000 Hz or better for sampling each of the analog channel having fundamental frequency of 50 Hz. The frequency response for these channels shall be DC on the lower side to 500 Hz or better on the upper side. Any interposing devices provided shall be suitable for this frequency response.
- The pre and post fault recording time shall be atleast 200 ms and 5s respectively.

f) All external and internal faults in the DR equipment such as power supply fail, printer faults, paper exhausting, processor failure, memory failure etc. are to be indicated by means of light emitting diodes on the front of the panel of restitution unit. The DR shall be provided with a MMI (man machine interface) through a PC with VDU, keyboard and printer.

g) The internal clock of the system shall be synchronized through the GPS. The output shall be in IEEE/ COMTRADE format. The format shall be compatible for dynamic protection Relay Test Kit Necessary interfacing and software for analysis shall also be provided.

h) The amplitude resolution of the analog channels shall not be less than 16 bit and event resolution for digital channels shall be 1ms or better.

16.11 Metering

Operational Metering

The unit operational metering is measured by multifunction meter and linked to synchronous condenser control system for operation and control purposes.

16.12 SynCon Station Auxiliary Power Supply

The auxiliary supply of SynCon Station shall conform with the system requirements relating to reliability, availability, and redundancy, performing continuously to help ensure that the complete SynCon Station operates as per the requirements. SynCon 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 SynCon station shall be fed from this supply. The auxiliary supply provides power to the excitation system, starting system, controllers, cooling system, station supplies, and various other essential and non-essential loads. All essential loads are connected to the DC system of the SynCon 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 SynCon 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 SynCon Station during these transient events.

Auxiliary Supply System of SynCon Station shall be fed from two independent sources as per CEA (Technical Standards for Connectivity to the Grid) Regulations, 2007. In addition to this one emergency incomer from DG set shall also be there. DG set of SynCon Station shall be separate from DG set of Main Substation.

16.13 Power and control cables, and cabling

(i) For essential auxiliaries, the power and control cables shall be of fire survival type. All other Power and control cables shall be of flame retardant low smoke (FRLS) type.

(ii) Cables to be directly buried shall be essentially armoured type.

(iii) Flame retardant low smoke cables and fire survival cables shall meet test requirements as per relevant American Society of Testing and Materials, International Electrotechnical Commission, Institute of Electrical and Electronics Engineers and Swedish Standards.

(iv) Derating factors for site ambient and ground temperatures, grouping and soil resistivity shall be considered while determining the size of cables.

(v) Cable installation shall be carried out as per relevant IS and other applicable standards.

(vi) Power cables and control cables shall be laid on separate tiers. The laying of different voltage grade cables shall be on different tiers according to the voltage grade of the cables with higher voltage grade cables in topmost tier and control cables in bottommost tier.

(vii) All cables associated with one unit shall preferably be segregated from cables of other units.

(iv) Cable routes for one set of auxiliaries of same unit shall be segregated from the other set.

16.14 Fire Protection System for SynCon Station:

Necessary fire protection for SynCon units and Step-up Transformer shall be required. The main features of these protections are as under.

A) Fire Detection and Alarm System:

Suitable fire detection system using smoke detectors and/or heat detectors shall be provided in SynCon Station for all room and areas. These smoke fire detection systems shall be connected to a separate Fire annunciation system clearly identifying the zone.

B) Hydrant System:

The hydrant system shall be extended from fire-fighting system of the substation in the yard. Suitable number of hydrants shall be provided for protection of SynCon Station equipment in the yard namely Step-up Transformers etc. as applicable for the station. Further suitable number of hydrants shall also be provided for SynCon Station building

HVW System:

HVW (High Velocity Water) Spray system shall be provided for Step-up transformers. 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.

17. VISUAL MONITORING SYSTEM FOR WATCH AND WARD OF SynCon STATION

Visual Monitoring System (VMS) for effective watch and ward of SynCon station premises covering the areas of entire switchyard, SynCon building, Step-up 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.

System with Colour IP Cameras for VMS surveillance would be located at various locations including indoor areas and outdoor switchyard. The VMS data partly/completely shall be recorded (minimum for 15 days) and stored on network video recorder.

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) Step-up Transformers.
b) SynCon Cooling System, Electrical and Mechanical Auxiliary area.
c) Entrance to SynCon Station.
d) All other Major Equipments (such as CB, CT, VT, SA etc.)

The cameras can be mounted on structures, buildings or any other suitable mounting arrangement.

Advisory on deployment of CCTV issued by Ministry of Electronics and Information Technology (MEITY) shall be followed.

18. Spares, Special Tools and Tackles

Considering high technology proprietary equipment of the SynCon TSP shall ensure necessary spares are procured to maintain the necessary reliability and availability of SynCon Station. Further all necessary special tools and tackles required for erection, testing, commissioning and maintenance of equipment shall also be taken.

19. Losses

19.1 Calculation of losses

The TSP must guarantee total losses of less than 2% of highest reactive power output of SynCon Station at PCC for complete Synchronous Condenser Station, under the following conditions:

a) At 40°C ambient temperature for specified Short Circuit Contribution at Point of Common Coupling
b) Specified rated frequency & voltage at Point of Common Coupling

The TSP shall calculate the total losses of the Synchronous Condenser Unit at each operating point specified below which must meet the guaranteed total losses mentioned above. The calculation of guarantee total losses shall include losses of all the components up to the PCC including losses of the synchronous condenser, flywheel (if applicable), IPB, transformer and the relevant auxiliary systems like pumps, fans, excitation system, building HVAC etc. whether conducting currents or not, based on the above assumptions.

The operating points shall be as follows:

i) Maximum Capacitive Output.
ii) Maximum Inductive Output; and
iii) Zero MVAr Output.

The actual losses shall be measured during SAT.

19.2 Loss measurement

Procedure according to IEC 60034-2-2 using the retardation method:

Losses will be determined by measurement of partial losses using retardation method according to the ITP and as specified in IEC 60034-2.1, chapter 7.1.1, method 2-1-2C: Summation of separate losses without a full load test. Short circuit test for the determination of the additional load losses to be applied for one type of synchronous machine per plant.

20. Availability and Reliability

20.1 Availability

The percentage availability of Synchronous Condenser is defined as follows:

$$\%\ Availability = \frac{Total\ time\ SynCon\ is\ able\ to\ Perfrom\ specified\ Duty}{Total\ time\ Period}\ x\ 100$$

Synchronous Condenser shall be considered to be available for service only if it is able to perform the whole of the specified duty. Operation with limited control functions or within a limited range of outputs (any parameters i.e. Inertia, Short Circuit MVA and Capacitive and Inductive MVAr) due to a subsystem failure shall be treated as unscheduled servicing downtime. The period basis for availability calculation shall be 12 months (365 days).

The total time period during which the SynCon Station is not able to perform the specified duty shall include Planned Outage hours (POH), Maintenance Outage Hours (MOH) and Forced Outage Hours (FOH).

Planned Outage (POH = Planned Outage Hours) is the state where the Equipment is unavailable due to Planned Maintenance activities (Scheduled Routine Maintenance, Scheduled Annual and Biennial Maintenance, Small Revisions and Major Revisions) that require the shutdown of the Equipment. Such activities leading to a Planned Outage.

Unplanned Outage

Unplanned Outage is the state where the Equipment is unavailable but is not in the Planned Outage state.

The Unplanned Outage can be due to **Forced Outage Hours** (FOH = Forced Outage Hours) or due to **Maintenance Outage Hours** (MOH = Maintenance Outage Hours)

Forced Outage is considered as an outage that requires removal of the Equipment from the Available State **immediately** or **within 7 days maximum**.

Maintenance Outage is considered an outage that **does not require immediate removal** from the Available State but requires the Equipment to be removed from the Available State **before the next Planned Outage**. This is scheduled **at least 7 days in advance** (otherwise it's classified as FOH).

20.2 Reliability

In the assessment of reliability, the following events shall also be considered to constitute a SynCon Station outage:

i) A SynCon Station shut down.

ii) A reduction of SynCon Station capacity (any parameters i.e. Inertia, Short Circuit MVA and Capacitive and Inductive MVAr) due to an outage of any component of SynCon Station

The calculated reliability of the complete SynCon Station shall be equal to or exceed the following design target values.

	Design target for SynCon Station	Max acceptable Guaranteed value for SynCon Station
Total Number of Forced Outages	3	5

Here definition of Forced Outage shall be considered as same as given in the "20.1 Availability".

The period basis for availability calculation shall be 12 months (365 days).

Annexure – D

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:

C.1.0 Establishment of 765/400kV Kalyanpur (GIS)

(I) TSP shall supply, install & commission one or more FODP with minimum 504 Fiber capacity with panel and required approach Cables (48F/24F each) with all associated hardware fittings from gantry towers to Control Room for all the incoming lines envisaged under the present scope.

(II) TSP shall supply, install & commission One or more STM-16 (FOTE) equipment along with panel/s supporting minimum **seventeen (17)** MSP (Multiplex Section Protection – 1+1) STM-16 directions along with required interfaces to meet the voice and data communication requirement among **Saurashta S/s, Jamnagar (GIS), upcoming RE generators and Kalyanpur (GIS)**. These directions shall exclude protected (1+1) local patching among equipment (if any). The suitable DC Power Supply and backup to be provided for communication equipment.

(III) FODP & FOTE equipment with panels shall be provided in Control Room of **Kalyanpur (GIS)**. FOTE & FODP equipment can be accommodated in same panel to optimize space.

(IV) The new communication equipment under the present scope shall be compatible for integration with existing regional level centralized NMS. The local configuration of the new communication equipment shall be the responsibility of TSP. The configuration work in the existing centralized NMS for integration of new Communication equipment shall be done by Regional ULDC Team, however all the necessary support in this regard shall be ensured by TSP.

(V) TSP shall deploy Cyber Security System in compliance with CEA (Cyber Security in Power Sector) Guidelines, 2021 and CEA (Cyber Security in Power Sector) Regulation, from its date of publication/ notification and their amendments thereof.

(VI) The maintenance of all the communication equipment and software thereof including FOTE, FODP, PMU, approach cable, DCPS along with Battery Bank and Cyber Security System shall be the responsibility of TSP.

C.2.0 Kalyanpur (GIS) – Jamnagar (GIS) 765kV D/C line

(i) On Kalyanpur (GIS) – Jamnagar (GIS) 765kV 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. The TSP shall install this OPGW from gantry of **Kalyanpur (GIS)** up to the gantry of **Jamnagar (GIS)** 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.

(ii) The transmission line length is **95 kms (approx.),** where repeater may not be required to meet the link budget requirement of **Kalyanpur (GIS) – Jamnagar (GIS)** link.

(iii) Maintenance of OPGW Cable and OPGW Hardware etc. shall be the responsibility of TSP.

C.3.0 2 Nos. 765 kV line bays at Jamnagar (GIS) S/s
4 Nos. 220 kV line bays at Jamnagar (GIS) for RE interconnection

(i) TSP shall supply, install and commission one or more FODP with minimum 240 Fiber capacity with panel and required approach Cables (48F/24F each) with all associated hardware fittings from gantry towers to Bay Kiosks and from the Bay Kiosks to Control room.

(ii) TSP shall supply, install and commission One or more STM-16 (FOTE) equipment alongwith panel/s supporting minimum **seven (7)** MSP (Multiplex Section Protection – 1+1) STM-16 directions alongwith required interfaces at **Jamnagar (GIS)** to meet the voice and data communication requirement among **Jamnagar (GIS), Kalyanpur (GIS) and upcoming RE generators**. These directions shall exclude protected (1+1) local patching among equipment (if any). 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 FOTE at control room of **Jamnagar (GIS)** 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/ upcoming 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/ upcoming FOTE at the control room, the TSP shall coordinate with station owner to reconfigure the directions in existing/ upcoming FOTE at control room. Alternatively, The TSP may integrate the FOTE under the present scope with existing/ upcoming 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 new communication equipment under the present scope shall be compatible for integration with existing regional level centralized NMS. The local configuration of the new communication equipment shall be the responsibility of TSP. The configuration work in the existing centralized NMS for integration of new Communication equipment shall be done by Regional ULDC Team, however all the necessary support in this regard shall be ensured by TSP.

The maintenance of all the communication equipment and software thereof including FOTE, PMU, FODP, approach cable, DCPS alongwith Battery Bank shall be the responsibility of TSP.

C.4.0 Kalyanpur (GIS) – Saurashta S/s 765kV D/C line

(i) On Kalyanpur (GIS) – Saurashta S/s 765kV 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. The TSP shall install this OPGW from gantry of **Kalyanpur (GIS)** up to the gantry of **Saurashta 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.

(ii) The transmission line length is **225 kms (approx.),** where repeater may be required to meet the link budget requirement of **Kalyanpur (GIS) – Saurashta S/s** link. To meet link budget requirement of **Kalyanpur (GIS) – Saurashta S/s** link (including service loops and sag etc.) 1 set of FOTE at repeater station to be provided by TSP.

(iii) TSP shall finalize the location of repeater station depending upon the actual site

conditions. Further, TSP shall comply with the requirements mentioned as per **Appendix-G.1.**

(iv) Maintenance of OPGW Cable, OPGW Hardware and repeater equipment and items associated with repeater shelter shall be the responsibility of TSP.

C.5.0 2 Nos. 765kV line bays at Saurashtra (Sompipaliya) (GETCO) S/s

(i) TSP shall supply, install and commission one or more FODP with minimum 144 Fiber capacity with panel and required approach Cables (48F each) with all associated hardware fittings from gantry towers to Bay Kiosks and from the Bay Kiosks to Control room.

(ii) TSP shall supply, install and commission One or more STM-16 (FOTE) equipment alongwith panel/s supporting minimum **three (3)** MSP (Multiplex Section Protection – 1+1) STM-16 directions alongwith required interfaces at **Saurashta (GETCO) S/s** meet the voice and data communication requirement between **Saurashta S/s and Kalyanpur (GIS)**. These directions shall exclude protected (1+1) local patching among equipment (if any). 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 FOTE at control room of **Saurashta (GETCO) 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/ upcoming FOTE/FODP panels in control room for integration with the existing/ upcoming FOTE for onwards data transmission.

In case spare optical direction is not available in the existing/ upcoming 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/ upcoming 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/ upcoming FOTE/FODP panels in another Kiosk (SPR).

(iv) FOTE and FODP can be accommodated in same panel to optimize space.

(v) The new communication equipment under the present scope shall be compatible for integration with existing regional level centralized NMS. The local configuration of the new communication equipment shall be the responsibility of TSP. The configuration work in the existing centralized NMS for integration of new Communication equipment shall be done by Regional ULDC Team, however all the necessary support in this regard shall be ensured by TSP.

The maintenance of all the communication equipment and software thereof including FOTE, PMU, FODP, approach cable, DCPS alongwith Battery Bank shall be the responsibility of TSP.

C.6.0 Specific Requirement for Phasor Measurement Units (PMUs)

TSP shall supply, install and commission required no. of Phasor Measurement Units (PMUs) as per Guidelines for Unified Philosophy for Placement of Phasor Measurement Units (PMUs) in Indian Grid (along with all amendments if any) dated March 25 and all the applicable Regulations, Standards, Guidelines issued time to time. 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.

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Communication system integration in UNMS/CSMS

TSP is to ensure integration of communication system into UNMS/CSMS as per following:

"The new communication equipment/ system 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/ system at the station end shall be the responsibility of TSP as per followings. The configuration work in the existing centralized NMS/ UNMS 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.

Requirement for integration of Communication Equipment/ system 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 RX 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."

Repeater Requirements

- If the repeater location is finalized in the Control Room of a nearby substation, TSP shall provide OPGW to accommodate all the fibers in main transmission line on a single Earthwire peak with OPGW Hardware and mid-way Joint Boxes etc. of the line crossing the main line and required approach Cable to accommodate all the OPGW fibers with all associated hardware fittings, to establish connectivity between crossing point of main transmission line up to the repeater equipment in substation control room.
  TSP shall co-ordinate for Space and DC power supply sharing for repeater equipment.
  TSP shall provide FODP, FOTE (with STM-16 capacity) with suitable interfaces required for link budget of respective link.

  OR

- If the repeater location is finalized in the nearby substation premises, the TSP shall identify the Space for repeater shelter in consultation with station owner. Further TSP shall provide OPGW to accommodate all the fibers in main transmission line on a single Earthwire peak with OPGW Hardware and mid-way Joint Boxes etc. of the line crossing the main line and required approach Cable/UGFO to accommodate all the OPGW fibers with all associated hardware fittings, to establish connectivity between crossing point of main transmission line up to the substation where the repeater shelter is to be housed.
  TSP shall provide repeater shelter along with FODP, FOTE (with STM-16 capacity) with suitable interfaces require for link budget of respective link, reliable power supply provisioning for AC and DC supply, battery bank, Air Conditioner and other associated systems.

OR

- If the repeater location is finalized on land near the transmission tower. TSP shall make the provisions for Land at nearby tower for repeater shelter. Further TSP shall provide required approach Cable to accommodate all the OPGW fibers with all associated hardware fittings to establish connectivity up to the location of repeater shelter.
  TSP shall provide repeater shelter along with FODP, FOTE (with STM-16 capacity) with suitable interfaces require for link budget of respective link, reliable power supply provisioning for AC and DC supply, battery bank, Air Conditioner and other associated systems

  Maintenance of OPGW Cable and **OPGW Hardware**, repeater equipment and items associated with repeater shelter shall be 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), PMUs, Voice etc. for smooth operation and monitoring of new added grid elements.

Transmission system for Integration of Power from RE Projects in Jam Khambhaliya REZ in Gujarat - Phase II (5500MW) and Jamnagar Phase-I (1000 MW)

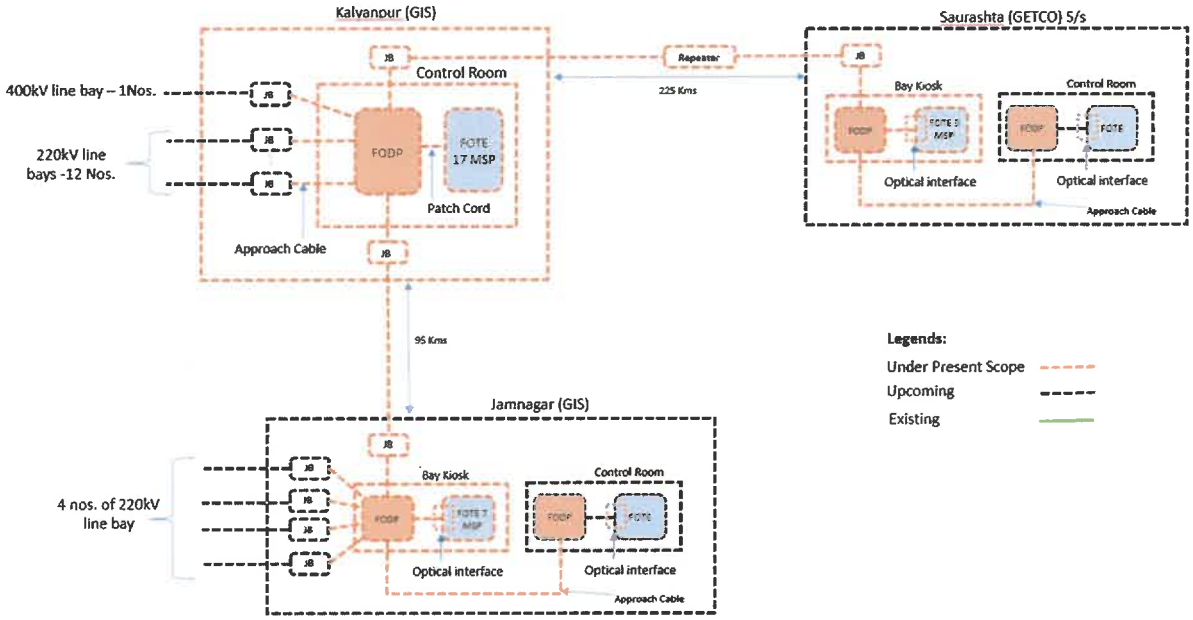


Figure G.1

C.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: -

- Coupling device, Coupling filters line traps, carrier terminals, protection couplers, HF cables, PABX (if applicable) and maintenance and testing instruments.
- 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.
- Coupling devices shall be suitable for phase-to-phase coupling for 400 kV 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.
- 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.
- 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.
- 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.	Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/C line	1 set Analog PLCC + 1 set Digital Protection Coupler for each circuit at both ends.
2.	Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 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 765 kV, 400 kV and 220 kV line bays under present scope shall be provided by TSP.
- All other associated equipment like cabling, coupling device and HF cable shall also be provided by the TSP.
- 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

Contingency Cases for Fatehgarh-II SYNCON

A) N-1 Contingency

Contingency at 765 kV level

1. Three Phase Fault close to 765kV bus of Kalyanpur (GIS) followed by tripping of one circuit of **Saurashtra (Sompipaliya) (GETCO)**– Kalyanpur (GIS) 765 kV D/c line (fault persisted for 100 ms)

2. Single Phase to Ground Fault close to 765kV bus of Kalyanpur (GIS) 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 **Saurashtra (Sompipaliya) (GETCO)** – Kalyanpur (GIS) 765 kV D/c line

3. Three Phase Fault close to 765kV bus of Kalyanpur (GIS) followed by tripping of one circuit of Jamnagar (GIS)– Kalyanpur (GIS) 765 kV D/c line (fault persisted for 100 ms)

4. Single Phase to Ground Fault close to 765kV bus of Kalyanpur (GIS) 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 Jamnagar (GIS) – Kalyanpur (GIS) 765 kV D/c line

5. Three Phase Fault close to 765kV bus of **Saurashtra (Sompipaliya) (GETCO)** S/s followed by tripping of one circuit of **Saurashtra (Sompipaliya) (GETCO)**– Vataman 765 kV D/c line (fault persisted for 100 ms)

6. Single Phase to Ground Fault close to 765kV bus of **Saurashtra (Sompipaliya) (GETCO)** 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 **Saurashtra (Sompipaliya) (GETCO)**– Vataman 765 kV D/c line

7. Three Phase Fault close to 765kV bus of Jamnagar S/s followed by tripping of one circuit of Jamnagar – Halvad 765 kV D/c line (fault persisted for 100 ms)

8. Single Phase to Ground Fault close to 765kV bus of Jamnagar 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 Jamnagar – Halvad 765 kV D/c line

9. Three Phase Fault close to 765kV bus of Kalyanpur (GIS) followed by tripping of 1x1500MVA, 765/400kV ICT (fault persisted for 100 ms)

Contingency at 400kV level

1. Three Phase Fault close to 400kV bus of Kalyanpur (GIS) followed by tripping of 1000MW RE generation at Kalyanpur (GIS) (fault persisted for 100 ms)

2. Tripping of 830MW unit at CGPL UMPP.

B) N-1-1 Contingency

1. Case 1 & 2 (consider as separate cases) + Single Phase Fault close to 765kV bus of Kalyanpur (GIS) followed by single pole opening (100 ms) of the faulted phase (2nd ckt of **Saurashtra (Sompipaliya) (GETCO)** – Kalyanpur (GIS) 765 kV D/c line) and successful re-closure (dead time 1 second)

2. Case 3 & 4 (consider as separate cases) + Single Phase Fault close to 765kV bus of Kalyanpur (GIS) followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Jamnagar (GIS)– Kalyanpur (GIS) 765 kV D/c line) and successful re-closure (dead time 1 second)

3. Case 5 & 6 (consider as separate cases) + Single Phase Fault close to 765kV bus of **Saurashtra (Sompipaliya) (GETCO)** S/s followed by single pole opening (100 ms) of the faulted phase (2nd ckt of **Saurashtra (Sompipaliya) (GETCO)**– Vataman 765 kV D/c line) and successful re-closure (dead time 1 second)

4. Case 7 & 8 (consider as separate cases) + Single Phase Fault close to 765kV bus of Jamnagar S/s followed by single pole opening (100 ms) of the faulted phase (2nd ckt of Jamnagar – Halvad 765 kV D/c line) and successful re-closure (dead time 1 second)

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Transmission Service Agreement

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	Percentage 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 4x1500 MVA, 765/400 kV and 10x500 MVA, 400/220 kV Substation near Kalyanpur (GIS) with 2x330 MVAr, 765 kV bus reactor and 2x125 MVAr, 420 kV bus reactor	31.03.2030	74.90%	All Elements are required to be commissioned simultaneously as their utilization is dependent on commissioning of each other. Further, "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I" in Jamnagar area, which is presently under implementation by Jamnagar Transmission Limited (a subsidiary of Adani), is pre-required for utilization of this scheme.
2.	Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/C line			
3.	2 Nos. 765 kV line bays at Jamnagar (GIS) S/s			
4.	Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/c line			
5.	330 MVAr Switchable line reactors on each circuit at Saurashtra (Sompipaliya) (GETCO) (GIS) end of Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/C line (with NGR bypass arrangement)			
6.	2 Nos. 765 kV line bays at Saurashtra (Sompipaliya) (GETCO) (GIS) S/s			
7.	Installation of Synchronous Condenser (+300/-200 MVAr) (Minimum) and Short circuit contribution at PCC of 1200 MVA (Minimum) at Jam Kalyanpur (GIS) – 2 Nos. Value of Inertia (Minimum) shall be 3000 MW-s		22.00%	
8.	Creation of 220 kV switchyard along with Installation of 3x500 MVA, 400/220 kV ICTs at Jamnagar (GIS) S/s		3.10%	Elements at Sl. No. 8 and 9 are required to be commissioned simultaneously as their

S. No.	Name of the Transmission Element	Scheduled COD	Percentage 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
9.	4 Nos. 220 kV line bays for RE interconnection at Jamnagar (GIS) S/s			utilization is dependent on commissioning of each other. Further, "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I" in Jamnagar area, which is presently under implementation by Jamnagar Transmission Limited (a subsidiary of Adani), is pre-required for utilization of this scheme.

Notes:

i. *TSP of Jamnagar S/s shall provide space for above scope of work at Sl. 3, 8 and 9 on free of cost basis*
ii. *GETCO shall provide space for above scope of work at Sl. 5 & 6 on free of cost basis*
iii. *Bay(s) required for completion of diameter (GIS) in one-and-half breaker scheme shall also be executed by the TSP.*
iv. *Above Syncons (at Sl. 7) shall be considered as 'transmission asset' similar to STATCOM and SVC for its tariff mechanism.*

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.

Scheduled COD for the Project is: 31.03.2030

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Transmission Service Agreement

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

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

b. 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%)

For Synchronous Condenser Station:

a. If Actual Transmission System Availability for the month m of contract year n is greater than or equal to 97% and less than or equal to 98.5
Monthly Transmission Charges MTC(m) = Tmn *1

b. 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 97% and greater than or equal to 95.00%
Monthly Transmission Charges MTC(m) = Tmn * (AA/ 97%)

e. If Actual Transmission System Availability for the month m of contract year falls below 95%;
Monthly Transmission Charges MTC(m) = Tmn * (AA/ 97%) - 0.02 * (Tmn* (AA/ 95%))

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.

Transmission Service Agreement

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 Transmission Charges: Rs. 8,229.12 Million per annum

Proportionate Transmission Charges payable for each Element of the Project:

S. No.	Name of the Transmission Element	Scheduled COD	Percentage 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 4x1500 MVA, 765/400 kV and 10x500 MVA, 400/220 kV Substation near Kalyanpur (GIS) with 2x330 MVAr, 765 kV bus reactor and 2x125 MVAr, 420 kV bus reactor	31.03.2030	74.90%	All Elements are required to be commissioned simultaneously as their utilization is dependent on commissioning of each other. Further, "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I" in Jamnagar area, which is presently under implementation by Jamnagar Transmission Limited (a subsidiary of Adani), is pre-required for utilization of this scheme.
2.	Kalyanpur (GIS) – Jamnagar (GIS) 765 kV D/C line			
3.	2 Nos. 765 kV line bays at Jamnagar (GIS) S/s			
4.	Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/c line			
5.	330 MVAr Switchable line reactors on each circuit at Saurashtra (Sompipaliya) (GETCO) (GIS) end of Kalyanpur (GIS) – Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/C line (with NGR bypass arrangement)			
6.	2 Nos. 765 kV line bays at Saurashtra (Sompipaliya) (GETCO) (GIS) S/s			
7.	Installation of Synchronous Condenser (+300/-200 MVAr) (Minimum) and Short circuit contribution at PCC of 1200 MVA		22.00%	

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S. No.	Name of the Transmission Element	Scheduled COD	Percentage 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
	(Minimum) at Jam Kalyanpur (GIS) – 2 Nos. Value of Inertia (Minimum) shall be 3000 MW-s			
8.	Creation of 220 kV switchyard along with Installation of 3x500 MVA, 400/220 kV ICTs at Jamnagar (GIS) S/s		3.10%	Elements at Sl. No. 8 and 9 are required to be commissioned simultaneously as their utilization is dependent on commissioning of each other. Further, "Network Expansion scheme in Gujarat for drawl of about 3.6 GW load under Phase-I" in Jamnagar area, which is presently under implementation by Jamnagar Transmission Limited (a subsidiary of Adani), is pre-required for utilization of this scheme.
9.	4 Nos. 220 kV line bays for RE interconnection at Jamnagar (GIS) S/s			

Notes:

i. *TSP of Jamnagar S/s shall provide space for above scope of work at Sl. 3, 8 and 9 on free of cost basis*
ii. *GETCO shall provide space for above scope of work at Sl. 5 & 6 on free of cost basis*
iii. *Bay(s) required for completion of diameter (GIS) in one-and-half breaker scheme shall also be executed by the TSP.*
iv. *Above Syncons (at Sl. 7) shall be considered as 'transmission asset' similar to STATCOM and SVC for its tariff mechanism.*

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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.

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
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 STATCOM

TAFMn (in %) for HVDC System:

$$= \frac{\sum_{x=1}^{s} Cxbp\ (act) \times AVxbp + \sum_{y=1}^{t} Cy\ (act)btb \times AVybtb}{\sum_{x=1}^{s} Cxbp + \sum_{y=1}^{t} Cybtb} \times 100$$

Where

Cxbp(act)	=	Total actual operated capacity of x^{th} HVDC pole
Cxbp	=	Total rated capacity of x^{th} HVDC pole
AVxbp	=	Availability of x^{th} HVDC pole
Cybtb(act)	=	Total actual operated capacity of y^{th} HVDC back-to-back station block
Cybtb	=	Total rated capacity of y^{th} HVDC back-to-back station block
AVybtb	=	Availability of y^{th} 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.

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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 i^{th} 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}		The non-availability hours (excluding the time period for outages not T_{NAl}, T_{NAm}, attributable to transmission licensee taken as deemed availability as T_{NAn}, 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 28.07.2026 and 18.08.2026 shall be an integral part5 of this Agreement.

Transmission Service 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 JAM KHAMBHALIYA 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 JAM KHAMBHALIYA 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 **JAM KHAMBHALIYA REZ TRANSMISSION LIMITED** or the Selected Bidder, as the case may be, to make any claim against or any demand on **JAM KHAMBHALIYA REZ TRANSMISSION LIMITED** or the Selected Bidder, as the case may be, or to give any notice to **JAM KHAMBHALIYA 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 **JAM KHAMBHALIYA 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 JAM KHAMBHALIYA 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 8A: FORMAT FOR SURETY INSURANCE CONTRACT

(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 of India)

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] (hereinafter referred to as the 'Principal Debtor' for the purposes of this Surety Insurance Contract as provided in Section 126 of the Indian Contract Act, 1872) having been selected to undertake the Transmission Project on the terms and conditions contained in the Transmission Service Agreement dated...../ to be executed as per the Model Transmission Service Agreement provided along with the Request for Proposal ('RFP') and other RFP Project Documents, subject to the condition of providing a Performance Bank Guarantee or a Surety Insurance Contract guaranteeing/insuring the due performance of the obligations under the Transmission Service Agreement, to the Central Transmission Utility of India Limited ('CTUIL') [herein after referred to as the Nodal Agency], the [Insert name and address of the Insurance Company issuing the Surety Insurance Contract and address of the head office] (hereinafter referred to as "Surety") hereby agrees unequivocally, irrevocably, absolutely and unconditionally, without demur, to pay to the Nodal Agency at [Insert Place and Address of the Nodal Agency indicated in Transmission Service Agreement, or to the designated Bank Account of the Nodal Agency, namely.....] forthwith on demand in writing from the Nodal Agency, or any Officer authorized by it in this behalf, intimated to the Surety at the address mentioned above, any amount as may be decided by the Nodal Agency not exceeding Rupees .....Crores (Rs.....) only [Insert the amount of the Surety Insurance Contract]

The Surety hereby acknowledges, accepts and confirms that the Surety has received from the Principal Debtor, by way of premium the entire consideration for the Surety to execute, in favour of the Nodal Agency, this Surety Insurance Contract, as extended by the Surety from time to time and assuming the obligation to pay to the Nodal Agency the amount in terms hereof, without any requirement for payment of any other consideration to the Surety by the Principal Debtor, or otherwise.

This Surety Insurance Contract shall be valid and binding on the Surety, as the principal obligation of the Surety to pay on demand by the Nodal Agency, and shall not be terminable by notice or any change in the constitution of the Surety or the term of the Transmission Service Agreement or by any other reasons whatsoever and the liability hereunder of the Surety shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed (with or without the knowledge or consent of the Surety) by or between the Principal Debtor and the Nodal Agency.

The liability of the Surety under this Surety Insurance Contract is restricted to Rupees ..... Crores (Rs) only. The Surety Insurance Contract shall remain in force until [Insert the date of validity of the Surety Insurance Contract]. The Nodal Agency shall be entitled to invoke this Surety Insurance Contract up to three hundred sixty five (365) days after the last date of the validity of this Surety Insurance Contract.

The Surety hereby expressly agrees that it shall not require any proof except for the written demand from the Nodal Agency, containing the statement that the contractor

has failed to meet its contractual obligations raised at the above mentioned address of the Surety (address of Surety office should be a place in NCR only) and the Surety shall pay the amount without reference to the Principal Debtor.

Any such demand made by the Nodal Agency on the Surety shall be conclusive and binding not withstanding any difference between the Nodal Agency and the Principal Debtor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Surety undertakes not to revoke this guarantee during its currency without previous consent of the Nodal Agency and further agrees that the Surety Insurance Contract herein contained shall continue to be enforceable till the Nodal Agency discharges this contract or till the expiry of tenor(including Claim period) whichever is earlier.

The Surety shall make payment hereunder within two (02) working days on first demand without restriction or conditions and notwithstanding any objection by the Principal Debtor, namely, ... [Insert name of SPV], or ..... [Insert name of the Selected Bidder], or ..... [Insert name of the TSP] and/or any other person. The Surety shall not require the Nodal Agency to justify the invocation of this Surety Insurance Contract, nor shall the Surety have any recourse against the Nodal Agency in respect of any payment made hereunder.

This SURETY INSURANCE CONTRACT shall be interpreted in accordance with the laws of India.

This SURETY INSURANCE CONTRACT is being executed by the Surety in terms of the IRDAI (Surety Insurance Contract) Guidelines, 2022 and the Surety hereby acknowledges, accepts and confirms that this Surety Insurance Contract shall be a Contract of Guarantee as provided under Section 126 of the Indian Contract Act, 1872 and further shall be covered by Section 14(3) (b) of the Insolvency and Bankruptcy Code, 2016 (as amended) shall be enforceable as such.

The Surety represents that this Surety Insurance Contract has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Surety in the manner provided herein.

This SURETY INSURANCE CONTRACT 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 Surety.

In order to give effect to this surety Bond, the Nodal Agency shall be entitled to act as if the surety insurer were the principal debtor and any change in the constitution of the contractor and/or the surety insurer, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the surety insurer under this surety Bond.

This SURETY INSURANCE CONTRACT shall be a primary obligation of the Surety as a Principal to pay on demand by the Nodal Agency and the Nodal Agency shall not be obliged before enforcing this Surety Insurance Contract to take any action in any court or arbitral proceedings against the Principal Debtor, namely, ... [Insert name of SPV], or

..... [Insert name of the Selected Bidder], or

..... [Insert name of the TSP] and/or any other person, as the case may be, to make any claim against or any demand on the Principal Debtor, namely, ... [Insert name of SPV], or ..... [Insert name of the Selected Bidder], or ..... [Insert name of the TSP] and/or any other person, as the case may be, or to give any notice to Principal Debtor, namely..... [Insert name of SPV], or ..... [Insert name of the Selected Bidder], or ... . [Insert name of the TSP] and/or any other person, 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 the Principal Debtor, namely, ... [Insert name of SPV], or ..... [Insert name of the Selected Bidder], or ..... [Insert name of the TSP] and/or any other person, as the case may be.

The Surety acknowledges that this Surety Insurance Contract 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 Provided that any such assignment shall be in compliance with the relevant provisions of the Insurance Act 1938

The Surety hereby agrees and acknowledges that the Nodal Agency shall have a right to invoke this Surety Insurance Contract either in part or in full, as it may deem fit. In case of invocation of this Surety Insurance Contract in part, besides making payment for the part of Surety Insurance Contract invoked, surety at the request of nodal agency shall amend the value of Surety Insurance Contract to the extent of balance amount.

The Surety undertakes not to revoke this Surety Contract during its currency, except with the previous express consent of the Nodal Agency in writing and declares and warrants that it has the power to issue this Surety Contract and the undersigned has full powers to do so on behalf of the Surety

In witness where of:

Signature.....

Name: .....

Power of attorney No/ Employee No. as applicable. :.....

For:

... . [Insert Name of the Surety- Insurance Company]

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 Insurance Company.

SCHEDULE 8B: FORMAT FOR ISSUANCE OF PAYMENT ON ORDER INSTRUMENT

Dear Sir,

1. Indian Renewable Energy Development Agency Limited ('IREDA")/PFC/REC has sanctioned a non-fund based limit loan of Rs. (Rupees..... Only) to M/s. ..... [Insert name of SPV or selected Bidder] under the Loan Agreement executed on ..... to execute Transmission System Projects.

2. 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] for the purposes of this Payment on Order Instrument ("POI") having been selected to undertake the Transmission Project on the terms and conditions contained in the Transmission Service Agreement dated ...../ to be executed as per the draft of the Model Transmission Service Agreement provided along with the Request for Proposal („RFP") and other RFP Project Documents, subject to the condition of providing a POI guaranteeing the due performance of the obligations under the Transmission Service Agreement to the Nodal Agency/Central Transmission Utility of India Limited („CTUIL"), the.....[Insert name and address of the non-banking financial institutions(IREDA/PFC/REC) issuing the POI and address of the head office] (hereinafter referred to as "Guarantor") hereby agrees unequivocally, irrevocably, absolutely and unconditionally, without demur, to pay to the Nodal Agency at .....[Insert Place and Address of the Nodal Agency indicated in Transmission Service Agreement, or to the designated Bank Account of the Nodal Agency, namely.....] forthwith on demand in writing from the Nodal Agency, or any Officer authorized by it in this behalf, intimated to the Guarantor at the address mentioned above, any amount as may be decided by the Nodal Agency not exceeding Rupees Crores (Rs) only [Insert the amount of Payment on Order Instrument]

3. At the request of .....and on behalf of M/s. ....., [Insert name of SPV or selected Bidder] this Payment on Order Instrument (POI) for an amount of Rs ..... (Rupees .....) is being issued with IREDA/PFC/REC assuming the obligations to remit such amount to CTUIL from the sanctioned loan.

4. This Payment on Order Instrument comes into force immediately and IREDA/PFC/REC confirms that it has sufficient amount out of the sanctioned loan and shall maintain the required amount to pay under this Payment on Order Instrument, during the validity and claim period of this Payment on Order Instrument.

5. This POI has been issued by IREDA/PFC/REC utilizing the credit limit of M/s.....[Insert name of SPV or selected Bidder] IREDA/PFC/REC confirms that its liability to pay under this Payment on Order Instrument shall be primary and independent of whether at the time of

invocation of Payment on Order Instrument, the sanctioned funds are available or not and notwithstanding, the status of M/s. ..... [Insert name of SPV or selected Bidder] at the relevant time and to whether IREDA/PFC/REC is able to recover the amount advanced by it to the said developer.

6. IREDA/PFC/REC and M/s. [Insert name of SPV or selected Bidder] hereby acknowledges, accepts and confirms that this Payment on Order Instrument shall be a Contract of Guarantee as provided under Section 126 of the Indian Contract Act, 1872 and further shall be covered by Section 14(3) (b) of the Insolvency and Bankruptcy Code, 2016 (as amended) shall be enforceable as such.

7. IREDA/PFC/REC liability under this POI is restricted to Rupees Crores (Rs.....) only. This POI shall remain in force until..... [Insert the date of validity of the POI]. The Nodal Agency shall be entitled to invoke this POI up to three hundred sixty-five (365) days after the last date of the validity of this POI. This POI shall be extended from time to time for such period, as may be desired by the TSP.

8. The Guarantor hereby expressly agrees that it shall not require any proof except for the written demand from the Nodal Agency, raised at the above-mentioned address of the Guarantor (address of Guarantor office should be in NCR only) and the Guarantor shall pay the amount to the Nodal Agency without reference to the TSP.

9. Any such demand made by the Nodal Agency on the Guarantor shall be conclusive and binding not withstanding any difference between the Nodal Agency and the TSP or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Guarantor undertakes not to revoke this guarantee during its currency without previous consent of the Nodal Agency and further agrees that the POI herein contained shall continue to be enforceable till the Nodal Agency discharges this contract or till the expiry of tenure or (including Claim period) whichever is earlier.

10. The Guarantor shall make payment hereunder within two (02) working days on first demand without restriction or conditions and notwithstanding any objection or disputes raised by the TSP, namely, ... [Insert name of SPV], or [Insert name of the Selected Bidder], or ..... [Insert name of the TSP] and/or any other person. The Guarantor shall not require the Nodal Agency to justify the invocation of this POI, nor shall the Guarantor have any recourse against the Nodal Agency in respect of any payment made hereunder.

11. This POI shall be interpreted in accordance with the laws of India.

12. The Guarantor represents that this POI Contract has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor in the manner provided herein.

13. This POI 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.

14. This POI Contract shall be a primary obligation of the Guarantor as a Principal to pay on demand by the Nodal Agency and the Nodal Agency shall not be obliged before enforcing this POI Contract to take any action in any court or arbitral proceedings against the TSP, namely, ... [Insert name of SPV], or[Insert name of the Selected Bidder], or [Insert name of the TSP] and/or any other person, as the case may be to make any claim against or any demand on the TSP, namely, ... [Insert name of SPV], or ..... [Insert name of the Selected Bidder], or ..... [Insert name of the TSP] and/or any other person, as the case may be, or to give any notice to TSP, namely..... [Insert name of SPV], or..... [Insert name of the Selected Bidder], or ..... [Insert name of the TSP] and/or any other person, 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 the TSP, namely, ... [Insert name of SPV], or ..... [Insert name of the Selected Bidder], or ..... [Insert name of the TSP] and/or any other person, as the case may be.

15. The Guarantor acknowledges that this POI Contract 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.

16. The Guarantor hereby agrees and acknowledges that the Nodal Agency shall have a right to invoke this POI Contract either in part or in full, as it may deem fit. In case of invocation of this POI Contract in part, besides making payment for the part of POI Contract invoked, Guarantor at the request of Nodal Agency shall amend the value of POI Contract to the extent of balance amount.

IN WITNESS WHERE OF the non- banking financial institutions through its authorized officer, has set its hand and stamp on this..... day of.....at.....

Signature..... Name:

..... Power of

attorney No.: ..... For:

.....[Insert Name of the non- banking financial institutions Company]

Seal and Full Address, including mailing address of the Head Office

Transmission Service Agreement

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.

Annexure -13

FORM-I

1. Particulars of the Applicant

S.No.	Particulars	Details
I	Name of the Applicant	**Jam Khambhaliya REZ Transmission Limited**
II	Status	Public Limited Company
III	Address	B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi 110 016
IV	Name, Designation & Address of the contact person	Sh. Anand Kumar Saraph Project Incharge, Jam Khambhaliya REZ Transmission Limited (100% wholly owned subsidiary of Power Grid Corporation of India Limited) C/o ED (Commercial & RC), Power Grid Corporation of India Limited, Floor No. 02, Tower-01, IRCON International Tower, Plot No. 16, Institutional Area, Sector-32, Gurgaon-122003
V	Contact Tele. No.	
VI	Fax No.	0124-2822062
VII	Email ID	regulatory@powergrid.co.in
VIII	Place of Incorporation / Registration	New Delhi, India
IX	Year of Incorporation / Registration	2026
X	Copies of the following documents are enclosed:	
a.	Certificate of Registration	Attached as Annexure – 6 in petition
b.	Copy of Power of Attorney	Attached as Annexure – 14 in petition

2. Particulars of the Project:

(a) Transmission Line :

S.No.	Name (end points location)	Voltage class (kV)	Length (km)	Type (S/C or D/C)
1	Kalyanpur (GIS) - Jamnagar (GIS) 765 kV D/C line	765 kV	95 kM	D/C
2	Kalyanpur (GIS) - Saurashtra (Sompipaliya) (GETCO) (GIS) 765 kV D/C line	765 kV	225 kM.	D/C

(b) Sub-stations :

S. No.	Name of substation	Voltage Level	Transformer	Reactive Compensation	No. of bays
1	Kalyanpur (GIS) S/s	765 kV	• 765/400 kV, 1500 MVA ICT - 4 Nos. (13x500 MVA single phase units including one spare ICT Unit) (3 on Sec-I and 1 on Sec-II)	1x330 MVAr, 765 kV bus reactor- 2 Nos. (7x110 MVAR single phase Reactors including one spare Unit for bus /line reactors) (1 on Sec-I and 1 on Sec-II)	• 765 kV ICT bays - 4 Nos. • 400 kV ICT bays - 14 Nos. • 765 kV Line bays - 4 Nos. (2 on Sec-I and 2 on Sec-II) • 765 kV Sectionalisation bay: 1-set • 400 kV Sectionalisation bay: 1- set • 765 kV Bus reactor bay - 2 Nos. • 400 kV bus reactor bay- 2 Nos. • 400 kV line bay -1 No. (for interconnection of RE Project at Sec-I)
		400 kV	400/220 kV, 500 MVA ICT-10 Nos. (5 on Sec-I and 5 on Sec-II)	125 MVAr, 420 kV bus reactor- 2 Nos. (1 on Sec-I and 1 on Sec-II) Synchronous Condenser (+300/-200 MVAr) (Minimum) and Short circuit contribution at PCC of 1200 MVA (Minimum)	• 400 kV Bus Reactor bays – 2 Nos. • 400 kV ICT bays – 3 Nos. • 400kV line bays: 2 Nos.(Extension portion) • 400 kV bay-2 Nos.
		220 kV			• 220 kV ICT bays - 10 Nos.

S. No.	Name of substation	Voltage Level	Transformer	Reactive Compensation	No. of bays
					• 220 kV Sectionalisation bay: 1 set • 220 kV BC Bay-2 Nos. • 220 kV line bays - 12 Nos. (for interconnection of RE Projects, 6 on Sec-I and 6 on Sec-II)
2	**Jamnagar (GIS) S/s**	765 kV			765 kV line bays- 2 Nos. (GIS)
		400 kV		400/220 kV, 500 MVA ICT - 3 Nos. (on 400 kV and 220 kV Sec-I)	400 kV ICT bays - 1 No.
		220 kV			• Creation of 220 kV Bus Section-I • 220 kV BC Bay-1 No. • 220 kV ICT bays - 3 Nos. • 220 kV line bays - 4 Nos.
3	**Saurashtra (Sompipaliya) (GETCO) (GIS)**	765 kV		330 MVAr, 765 kV switchable line reactor- 2 Nos. (7x110 MVAR single Phase Reactors including one spare unit for line reactors))	765 kV Switchable Line Reactor Bay - 2 Nos. (GIS) 765 kV line bays - 2 Nos. (GIS) (2 nos. complete diameters (Main-Tie- Main)

a) Remarks: Application is being filed for grant of a fresh license

b) Scheduled COD of the project: 31.03.2030

c) Ageements with CTU (Nodal Agency) for the Project: Transmission Service Agreement (TSA) is enclosed as Annexure-12 to the instant petition.

3. **Quoted transmission charges** : Rs. 8,229.12 millions per annum

4.	(a) Approval of Central Government as per Electricity (Transmission System Planning, Development and Recovery of Inter-state Transmission Charges) Rules, 2021	Copy of Gazettee notification is enclosed as Annexure-2 to the petition
	(b) Evaluation report (if made public) by the Bid Process Coordinator	Certificate of Bid Evaluation Committee as furnished by BPC is enclosed Annexure-7 to the petition

5. List of documents enclosed:

a) Certificate of Registration

b) Certificate of Bid Evaluation Committee as furnished by BPC

c) Copy of Power of Attorney

Signature of the Applicant

Represented by Anand Kumar Saraph

Place: Ahmedabad

Date: 16.10.2026

Annexure-14

सत्यमेव जयते

INDIA NON JUDICIAL

Government of National Capital Territory of Delhi

e-Stamp

Certificate No.	:	IN-DL10830459956013Y
Certificate Issued Date	:	28-Sep-2026 04:17 PM
Account Reference	:	IMPACC (IV)/ dl1074803/ DELHI/ DL-SWD
Unique Doc. Reference	:	SUBIN-DLDL10748031855683559095Y
Purchased by	:	JAM KHAMBHALIYA REZ TRANSMISSION LTD
Description of Document	:	Article Others
Property Description	:	Not Applicable
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	JAM KHAMBHALIYA REZ TRANSMISSION LTD
Second Party	:	Not Applicable
Stamp Duty Paid By	:	JAM KHAMBHALIYA REZ TRANSMISSION LTD
Stamp Duty Amount(Rs.)	:	100 (One Hundred only)

NOTARY
Dhan Singh Nagar
Advocate
R. No.-16726
New Delhi, INDIA
Expiry Date
31-1-2030
GOVT. OF INDIA

Please write or type below this line

General Power of Attorney

Know all men by these presents, we **Jam Khambhaliya REZ Transmission Limited** (hereinafter referred to as JKREZTL which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, and assigns) having its Registered Office at B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi – 110 016 do hereby constitute, appoint and authorize Shri Anand Kumar Saraph, Project Incharge of JKREZTL residing at A-1402, Indraprastha Shivanta, S.P. Ring road, Ambli, Ahmedabad, Gujarat, Pin-380058 as our true and lawful attorney, to do in our name and our behalf, all of the acts or things hereinafter mentioned, that is to say:-

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.

1. To constitute, and defend legal cases, sign and verify plaints, written statements, petitions and objections, memorandum of appeal, claims, affidavits, applications, re-applications and pleadings of all kinds and to file them in Central Electricity Regulatory Commission (CERC), State Electricity Regulatory Commissions (SERCs), Appellate Tribunal for Electricity (ATE) , Civil, Criminal or Revenue courts, Arbitration, Labour Court, Industrial Tribunal, High Court and Supreme Court, whether having original or appellate jurisdiction and before Government or Local Authorities or Registration Authorities, Tax Authorities, Tribunals, etc.
2. To appear, before various Courts / Tribunals / CERC / SERCs / Appellate Tribunal for Electricity.
3. To appoint any Advocate, Vakil, Pleader, Solicitor or any other legal practitioner as Attorney to appear and conduct case proceedings on behalf of the company and to sign Vakalatnama.
4. To compromise, compound or withdraw cases from any Court / Tribunal / CERC / SERCs / Appellate Tribunal for Electricity.
5. To file petitions/applications or affidavits before the Supreme Court / High Court / CERC / SERCs / Appellate Tribunal for Electricity and to obtain the copies of documents, papers, records etc.
6. To file and receive back documents, to deposit and withdraw money from Courts, Tribunal, Registrar's Office and other Government or Local Authorities and to issue valid receipts thereof.
7. To apply for and obtain refund of stamp duty or court fee, etc.
8. To issue notices and accept service of any summons, notices or orders issued by any Court / Tribunal / CERC / SERCs / Appellate Tribunal for Electricity on behalf of the Company.
9. To execute deeds, agreements, bonds and other documents and returns in connection with the affairs of the company and file them or cause to be filed for Registration, whenever necessary.
10. To issue Project Authority Certificate(s) in respect of contracts for Load Despatch & Communication Systems, Transmission Systems etc. and to lodge claims with the Railways, Transporters, Shipping Agents and Clearing Agents and to settle/compromise such claims.
11. To lodge claims with the Insurance companies, to settle/compromise such claims and on satisfactory settlement thereof, to issue letters of subrogation/power of attorney in favour of Insurance companies.
12. To execute, sign and file applications, undertakings, agreements etc. to or with the Central / State Government(s) / Body(ies) to obtain 'right of way' or any of other Right(s) / Privilege(s) etc.
13. To execute, sign and file applications, undertakings, agreements, bills, documents etc. to or with the Central / State Government(s) / Body(ies) and other authorities / entities including Central Transmission Utility (CTU)/ Grid Controller of India Limited / Central Electricity Authority (CEA)/ CERC with respect to Commissioning of the Project, realization of Transmission charges, to obtain 'right of way' or any of other Right(s) / Privilege(s) etc.

NOTARY Dhan Singh Negi Advocate R. No.-16726 New Delhi, INDIA Expiry Date 1.2.2025 GOVT. OF INDIA

14. To execute Transmission Service Agreement (TSA) with Central Transmission Utility of India Limited (CTUIL)

15. To execute Consultancy, Funding and other Agreements.

16. To act as administrator for e-filing process with CERC and other Statutory authorities.

17. Generally to do all lawful acts, necessary for the above mentioned purposes.

The Company hereby agrees to ratify and confirm all and whatsoever the said Attorney shall lawfully do execute or perform or cause to be done, executed or performed in exercise of the power or authority conferred under and by virtue of this Power of Attorney.

.....

Signed by the within named
Jam Khambhaliya REZ Transmission Limited
through the hand of
Duly authorized by the Board to issue such Power of Attorney

Dated this ..... day of ....., 2026

Accepted

.....
Signature of Attorney
Name: Shri Anand Kumar Saraph
Designation: Project Incharge, **Jam Khambhaliya REZ Transmission Limited**
Address: A-1402, Indraprastha Shivanta, S.P. Ring road, Ambli, Ahmedabad, Gujarat, Pin- 380058

Attested

.....
(Signature of the Executant)
Name: Sh. K.V. Sampath Kumar
Designation: Director
Address: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110 016

NOTARY
Dhan Singh Nagar
Advocate
R. No.-16726
New Delhi, INDIA
Expiry Date
31-1-2030
GOVT. OF INDIA

.....
Signature and Stamp of Notary of the place of execution

WITNESS

ATTESTED
NOTARY PUBLIC
DELHI
13 OCT 2026

FORM-I

Particulars	
1. Name of the Petitioner	**Jam Khambhaliya REZ Transmission Limited**
2. Address of the Petitioner	B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi – 110016
3. Subject Matter	Petition under Section 14 & 15 of the Electricity Act, 2003 read with Central Electricity Regulatory Commission (Procedure, Terms and Conditions for Grant of Transmission License and other related matters) Regulations, 2024 with respect to Transmission License to Jam Khambhaliya REZ Transmission Limited (a 100% wholly owned subsidiary of Power Grid Corporation of India Limited)
4. Petition No., if any	
5. Details of generation assets (a) generation station/units (b) Capacity in MW (c) Date of commercial operation (d) Period for which fee paid (e) Amount of fee paid (f) Surcharge, if any	NA
6. Details of transmission assets (a) Transmission line and sub-stations (b) Date of commercial operation (c) Period for which fee paid (d) Amount of fee pad (e) Surcharge, if any	NA
7. Fee paid for Adoption of tariff for (a) Generation asset (b) Transmission asset	NA
8. Application fee for licence (a) Trading licence (b) Transmission licence (c) Period for which paid (d) Amount of fee paid	Rs 1,00,000/-
9. Fee paid for Miscellaneous Petition	NA
10. Fees paid for Interlocutory Application	

11. Fee paid for Regulatory Compliance petition	
12. Fee paid for Review Petition	NA
13. Licence fee for inter-State Trading (a) Category (b) Period (c) Amount of fee paid (d) Surcharge, if any	NA
14. Licence fee for inter-State Transmission (a) Expected/Actual transmission charge (b) Period (c) Amount of fee paid (d) Surcharge, if any	NA
15. Annual Registration Charge for Power Exchange (a) Period (b) Amount (c) Fee paid (d) Surcharge, if any	NA
16. Details of fee remitted (a) NEFT/RTGS Reference No. (b) Date of remittance (c) Amount of remitted	 UTR No - CMS/002029476747/2400308532 15.10.2026 Rs. 1,00,000/-

Anand Kumar Saraph

Digitally signed by Anand Kumar Saraph
Date: 2026.10.16 19:32:04 +05'30'

Signature of the authorized signatory with date