

Replies of Commercial Pre-Bid Queries**Tender No** **TPSODL/OT/2025-26/2500001114****Package Name** **Rate Contract for execution of multiple projects under Govt. funded scheme – SDMF-3.**

Sr. No.	Detailed Reference to TPSODL Tender Document. Please specify Document No / Clause No / Page No	Description as per Bid Document	Remarks - Query / Clarification	TPSODL Response
1	2	3	4	5
1		Payment Terms	We request you to consider a 10 percent of advance payment against ABG clause in the tender, as this is a high-investment project.	No change in payment term
2		Payment Terms	As per the tender payment terms, 60 percent of the gross value will be released within 30 days. We kindly request you to consider releasing 100 percent payment of the GST amount, as it is a government compliance, and 60 percent payment against the taxable amount.	No change in payment term

Replies of Technical Pre-Bid Queries

Tender No TPSODL/OT/2025-26/2500001114

Package Name Rate Contract for execution of multiple projects under Govt. funded scheme – SDMF-3. (Part-A: Cyclone Resilient Infrastructure, Part-B: Strengthening of River crossing infrastructure.)

Sr. No.	Detailed Reference to TPSODL Technical Document. Please specify Document No / Clause No / Page No	Description as per Bid Document	Remarks - Query / Clarification	TPSODL Response
1	2	3	4	5
1	Page - 28 of Tender Document ANNEXURE VII SCOPE OF WORK, Part-A (Cyclone Resilient Infrastructure)	Voltage level 11 KV 11 KV 3C, 400sqmm UG Cable - 7.4 CKM	As per scope of work quantity is 7.4 CKM. But in BOQ it is 18210.4 Mtr. Unable to understand the BOQ quantity. For how many runs cable to be supply/erected. Request for clarification in this regard.	Refer revised BOQ
2	Page - 28 & 31 of Tender Document ANNEXURE VII SCOPE OF WORK Part-B (Strengthening of River crossing infrastructure.)	River crossing Infra with UR+6 tower - 3 set	Request to share the exact location and name of river, where UR+6 tower to be erected. Only name of beneficiary areas are mentioned in the scope of work.	Location details enclosed as annexure
3	Part- A (Annexure-1) (BoQ)	Cyclone Resilient Infra	In BOQ sheet there is no SI.No.	Refer revised BOQ
		3C x 400 mm2 33KV XLPE Cable (Armoured), A2XWY	In BOQ sheet, there's no designated row/column provided to enter the erection cost for the item.	Refer revised BOQ
		3C x 400 mm2 11KV XLPE Cable (Armoured), A2XWY	In BOQ sheet, there's no designated row/column provided to enter the erection cost for the item.	Refer revised BOQ
		Pre-Wired FRTU Panel with FRTU	In BOQ sheet, there's no designated row/column provided to enter the erection cost for the items.	Refer revised BOQ
		Managed Layer2 Ethernet Switch (FRTU Panel)		
		Networking Accessories		
		CMR with Mounting Base for Digital Inputs		
		Interposing Relay for Digital Output		
		Battery Charger		
		Battery		
		4G Modem cum Router		
		Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications		
		Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output		
		Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input		
		4 C X 4 mm2 Copper cable for extension of CT & PT		
		2 C X 4 mm2 Cable for DC Power Supply		
		4P X 0.36 mm2, Armored Communication Cable for MFM		
		Armored CAT6 SFTP Cable		
		Un-Armored CAT6 SFTP Cable		
		Multi Function Meter		
		40mm nominal bore GI pipe (medium gauge) earthing device with 3 Mtr Long	In BOQ sheet, there's no designated row/column provided to enter the erection cost for the item.	Refer revised BOQ Installation of pipe earthing is included in civil services for construction of Earthing chamber
			Again Quantity mentioned against the item is 362 nos under supply head. But under Civil & Services head the quantity mentioned is 254 Nos, (installation of including earthing pipe dia up to 100mm dia for length of 3Mtr). There is difference in quantity as well as diameter of the Earthing pipe. Request for clarification in this regard.	Refer revised BOQ
		HDPE Pipe ,(Spec PE80 -PN8,160 mm dia)	In BOQ sheet, there's no designated row/column provided to enter the erection cost for the item.	Refer revised BOQ
4	Civil & Services	Laying of 200mm dia PE 80-PN8, HDPE pipe inside open trench.	Against the item Quantity mentioned 44616.32 Mtr, whereas under Supply head quantity mentioned is 36994.32 Mtr. Request clarification in this regard.	Refer revised BOQ

Sr. No.	Detailed Reference to TPSODL Technical Document. Please specify Document No / Clause No / Page No	Description as per Bid Document	Remarks - Query / Clarification	TPSODL Response
5	Technical specification			
	Part-A (Cyclone Resilient Infrastructure)	3C x 400 mm ² 33KV XLPE Cable (Armoured), A2XWY	Technical Specification Not Available in the tender document. Request to share the Technical specification	Already provided
		3C x 400 mm ² 11KV XLPE Cable (Armoured), A2XWY		Already provided
		Supply of RMU 33KV 4W 630A LLVV(2ISO+2BKR)+ AUX.PT		Already provided
		Supply of 11kV RMU 4WAY 630A LLVV WITH FRTU & AUXPT		Already provided
		RMU 33KV 630A SINGLE BKR MODULE + AUXPT		Already provided
		Heat shrinkable jointing kit for 3Cx400 mm ² 11KV XLPE Cable(indoor type)		Already provided
		Heat shrinkable jointing kit for 3Cx400 mm ² 11KV XLPE Cable(outdoor type)		Already provided
		Heat shrinkable jointing kit for 3Cx400 mm ² 11KV XLPE Cable(Straight type)		Already provided
		Heat Shrinkable jointing kit for 3C x 400 mm ² 33KV XLPE Cable (Outdoor type)		Already provided
		Heat shrinkable jointing kit for 3C x 400 mm ² 33KV XLPE Cable ((Straight type))		Already provided
		Heat shrinkable jointing kit for 3Cx400mm ² 33KV XLPE Cable(indoor type) (TOUCH PROOF)		Will be finalised during detailed Engineering. The touch-proof kit shall be type tested as per EN 50180 which shall comply IS 13573. Type test reports from non-accredited or private accredited labs is not acceptable.
	Part- B (Annexure-1) (BoQ)			
	Sl.No- 1	UR +6 TYPE Tower	Specification of UR+6 River crossing Towers not available. Request to share the same. Technical specification for PC+3 Tower is available in the Tender document. Kindly clarify in this regard.	The document E10-1-River crossing Tower and Tower Line Erection having the term PC+3 shall be read as "Tower type" and the L/R ratio will be finalised during approval after survey submitted by the executed contractor w.r.t SBC reports. Remaining documents are unchanged.
	Sl. No- 6	261.5 sqmm conductor (ACSR)	Technical Specification Not Available in the tender document. Request to share the Technical specification	Already provided
	Sl. No- 7	Earth wire (Size 7/3.25mm)		Already provided
	Sl.No- 11	Vibration damper for earth wire		Will be finalised during detailed Engineering, procurement of material shall be from TPSODL's approved vendor list only and shall be submitted along with type test reports.
	Sl.No- 12	Vibration damper		Will be finalised during detailed Engineering, procurement of material shall be from TPSODL's approved vendor list only and shall be submitted along with type test reports.
	Sl. No- 13	Copper Earth bond		Attached
	Sl.No- 14	Tower phase plate (R,Y and B)		Will be finalised during detailed Engineering, procurement of material shall be from TPSODL's approved vendor list only and shall be submitted along with type test reports.
	Sl.No - 15	Tower Number Plate		Will be finalised during detailed Engineering, procurement of material shall be from TPSODL's approved vendor list only and shall be submitted along with type test reports.
	Sl.No- 16	Tower Circuit plate		Will be finalised during detailed Engineering, procurement of material shall be from TPSODL's approved vendor list only and shall be submitted along with type test reports.
6	Page - 28 of Tender Document ANNEXURE VII SCOPE OF WORK, Part-A (Cyclone Resilient Infrastructure)	33kV IC OG panel 02 nos	As per scope of work it is mentioned 33 KV ICOG Panel and as per BOQ it is mentioned as 33 KV RMU. Please clarify which one to be considered. Again request to provide approved vendor for the same.	Consider RMU 33KV 630A SINGLE BKR MODULE + AUXPT
	Part- A (Annexure-1) (BoQ)	RMU 33KV 630A SINGLE BKR MODULE + AUXPT 02 Nos		

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7	Part- A (Annexure-1) (BoQ)- Supply - RMU	Supply of RMU 33KV 4W 630A LLVV(2ISO+2BKR)+ AUX.PT	Technical Specification Required	Already provided
8	Part- A (Annexure-1) (BoQ)- Supply - RMU	Pre-Wired FRTU Panel with FRTU	Technical Specification Required	Already provided part of FRTU
9	Part- A (Annexure-1) (BoQ)- Supply - RMU	Managed Layer2 Ethernet Switch (FRTU Panel)	Technical Specification Required	Already provided part of FRTU
10	Part- A (Annexure-1) (BoQ)- Supply - RMU	Networking Accessories of RMU	Technical Specification Required	Already provided part of FRTU
11	Part- A (Annexure-1) (BoQ)- Supply - RMU	CMR with Mounting Base for Digital Inputs	Technical Specification Required	Already provided part of FRTU
12	Part- A (Annexure-1) (BoQ)- Supply - RMU	Interposing Relay for Digital Output	Technical Specification Required	Already provided part of FRTU
13	Part- A (Annexure-1) (BoQ)- Supply - RMU	Battery Charger	Technical Specification Required	Already provided part of FRTU
14	Part- A (Annexure-1) (BoQ)- Supply - RMU	Battery	Technical Specification Required	Already provided part of FRTU
15	Part- A (Annexure-1) (BoQ)- Supply - RMU	4G Modem cum Router	Technical Specification Required	Already provided part of FRTU
16	Part- A (Annexure-1) (BoQ)- Supply - RMU	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Technical Specification Required	Already provided part of FRTU
17	Part- A (Annexure-1) (BoQ)- Supply - RMU	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Technical Specification Required	Already provided part of FRTU
18	Part- A (Annexure-1) (BoQ)- Supply - RMU	Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input	Technical Specification Required	Already provided part of FRTU
19	Part- A (Annexure-1) (BoQ)- Supply - RMU	4 C X 4 mm2 Copper cable for extension of CT & PT	Technical Specification Required	Already provided part of FRTU
20	Part- A (Annexure-1) (BoQ)- Supply - RMU	2 C X 4 mm2 Cable for DC Power Supply	Technical Specification Required	Already provided part of FRTU
21	Part- A (Annexure-1) (BoQ)- Supply - RMU	4P X 0.36 mm2, Armored Communication Cable for MFM	Technical Specification Required	Already provided part of FRTU
22	Part- A (Annexure-1) (BoQ)- Supply - RMU	Armored CAT6 SFTP Cable	Technical Specification Required	Already provided part of FRTU
23	Part- A (Annexure-1) (BoQ)- Supply - RMU	Un-Armored CAT6 SFTP Cable	Technical Specification Required	Already provided part of FRTU
24	Part- A (Annexure-1) (BoQ)- Supply - RMU	Multi Function Meter	Technical Specification Required	Already provided part of FRTU
25	Part- A (Annexure-1) (BoQ)- Supply - RMU	Supply of 11kV RMU 4WAY 630A LLVV WITH FRTU & AUXPT	Technical Specification Required	Already provided
26	Part- A (Annexure-1) (BoQ)- Supply - RMU	RMU 33KV 630A SINGLE BKR MODULE + AUXPT	Technical Specification Required	Already provided
27	Part- A (Annexure-1) (BoQ)- Supply - Cable Jointing Kits	Heat shrinkable jointing kit for 3Cx400 mm² 11KV XLPE Cable(indoor type)	Technical Specification Required	Already provided
28	Part- A (Annexure-1) (BoQ)- Supply - Cable Jointing Kits	Heat shrinkable jointing kit for 3Cx400 mm² 11KV XLPE Cable(outdoor type)	Technical Specification Required	Already provided
29	Part- A (Annexure-1) (BoQ)- Supply - Cable Jointing Kits	Heat shrinkable jointing kit for 3Cx400 mm² 11KV XLPE Cable(Straight type)	Technical Specification Required	Already provided
30	Part- A (Annexure-1) (BoQ)- Supply - Cable Jointing Kits	Heat Shrinkable jointing kit for 3C x 400 mm2 33KV XLPE Cable (Outdoor type)	Technical Specification Required	Already provided
31	Part- A (Annexure-1) (BoQ)- Supply - Cable Jointing Kits	Heat shrinkable jointing kit for 3C x 400 mm2 33 KV XLPE Cable ((Straight type))	Technical Specification Required	Already provided
32	Part- A (Annexure-1) (BoQ)- Supply - Cable Jointing Kits	Heat shrinkable jointing kit for 3Cx400mm² 33KV XLPE Cable(indoor type) (TOUCH PROOF)	Technical Specification Required	Will be finalised during detailed Engineering. The touch-proof kit shall be type tested as per EN 50180 which shall comply IS 13573. Type test reports from non-accredited or private accredited labs is not acceptable.
33	Part- A (Annexure-1) (BoQ)- Supply - Conductor Insulator & Hardware fitting	Clamp for Pipe	Technical Specification Required & for which pipe this clamp is required	This is a support clamp for cable pipe. Technical specification already provided.
34	Part- A (Annexure-1) (BoQ)- Civil & Services Part	Provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per standard drawing, specification & GTP.	Fencing Drawing Required	Drawing submission is a part of SITC works and it's bidders responsibility to submit and get it approved by TPSODL.
35	Part- A (Annexure-1) (BoQ)- Civil & Services Part	Cable looping chamber with Brick wall including cement concreting RCC Cover	Drawing Required	Reference drawing is already attached in tender documents.
36	Part- A (Annexure-1) (BoQ)- Civil & Services Part	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Technical Specification Required	Attached
37	Part- A (Annexure-1) (BoQ)- Civil & Services Part	Supply and erection of prefabricated RCC partition slab 950x450x75mm (M-30 grade)	Drawing Required	Attached
38	Part- A (Annexure-1) (BoQ)- Civil & Services Part	Supply and erection of prefabricated RCC trench (1mtr VV x 1.25mtr d), thickness 150mm (side slab) & 175mm (base slab) (M-30 grade)	Drawing Required	Attached
39	Part- A (Annexure-1) (BoQ)	3C x 400 mm2 33KV XLPE Cable (Armoured), A2XWY	Erection / Service part of this line item is not available in the BOQ.	Refer revised BOQ
40	Part- A (Annexure-1) (BoQ)	HDPE Pipe ,(Spec PE80 -PN8,160 mm dia)	Erection / Service part of this line item is not available in the BOQ.	Refer revised BOQ

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41	Part- A (Annexure-1) (BoQ)	33KV & 11KV 3C x 400 mm ² XLPE Cable (Armoured), A2XWY	As per the BOQ, the total supply quantity of Cable is 67350 Mtr (33KV- 49140 & 11KV- 18210 . However, as per the BOQ, the HDPE pipe supply quantity is 44616 Mtr (200mm Dia- 36994 & 160mm Dia- 7622)	Refer revised BOQ
42	Part- A (Annexure-1) (BoQ)	3C x 400 mm ² 11KV XLPE Cable (Armoured), A2XWY	As per the BOQ the supply quantity of this material is 18210 mtr and (Service) Laying Quantity is 45377 Mtr	Refer revised BOQ
43	Part- A (Annexure-1) (BoQ)	Making Trenchless ducts upto 200 mm dia through Single Pipe by HDD method using HDD machine.Scope of work includes pulling of any grade of HDPE Pipe,Jointing of the pipes ,cable laying through HDPE Pipe and disposal of debris . Cable and HDPE pipe shall be free issued from DISCOM's store.	As per this line item TPSODL will free issue the Cable & HDPE Pipe for the HDD work.	Refer revised BOQ
44			ROW line item should be added	No change

Location of River Crossing under SDMF III

FY	Circle	Division	Sub-Division	Section	33 kV Feeder Name	11 kV Feeder Name	River Name	Proposal	Covered GP
SDMF FY 25	Aska	GSED	DIGAPAHANDI	PUDAMARI		Old Bhismagiri	GHODAHADA	13mtr FP	Chanamari, Patiguda, Phasiguda
SDMF FY 25	Berhampur	HED	Sheragada	Konkorda		Kurula	Ghorgada	13mtr FP	Alarigada
SDMF FY 25	Jeypore	NED	Umerkot	Chandahandi		Damdamura	Branch of Tel River	13mtr FP	Chandahandi, Dalabeda, Dhodipani, Kuhudi, Malgan, Patakhalla, Phatiki, Sardhapur
SDMF FY 25	Jeypore	NED	Umerkote	Chandahandi		Beheramura	Vascel River	13mtr FP	Beheramura, Gambhariguda, Jamadara pada, Malgan, Mohana, Sardhapur
SDMF FY 25	Berhampur	PSED	POLASARA	CHIRIKIPADA		BALICHHA	BAGHUA	13mtr FP	Hatiota
SDMF FY 25	Berhampur	PSED	POLASARA	CHIRIKIPADA		Kalama	BAGHUA	13mtr FP	Kalamba, Kanduru
SDMF FY 25	Aska	AED-II	Buguda	Buguda		Buguda Town	Baghua River	13mtr FP	Kanjipalli, Kadapada, KS Pur Sasan, Jagatpatna, HS pur Sasan, Gulamundala, BD Pur Sasan
SDMF FY 25	Bhanjanagar	BNED	SORODA	SORODA		KAITHAGUDA	JARAU	UR+6 Tower	Sarabadi, Amurutul, Borasingi, Hinjalkuda, Badabangi, Raibandha
SDMF FY 25	Bhanjanagar	BNED	SORODA	SORODA		LATHIPADA	Rushikulya	13mtr FP	Sasan, Palakatu, Lathipada
SDMF FY 25	Jeypore	KED	Sunabeda	Nandapur		Padua	Machkund reservoir	UR+6 Tower	Kulasing, Paraja, Badapur, Unduruguda, Chatua
SDMF FY 25	Rayagada	GED	GUMUDA	PADMAPUR	Padampur	KENDUGUDA	Khairaguda	UR+6 Tower	Akhusingi, Guluguda, Indupur, Jathili, Kadama, Likitipadar, Nuaguda

TPSODL	TP SOUTHERN ODISHA DISTRIBUTION LIMITED, BERHAMPUR	
	TECHNICAL SPECIFICATION	
Document Title	SPECIFICATION FOR GI PIPE 150mm Dia. NB Class-B	
Document No.	ENG-MCH-055 A	Issue Date: 25.07.2023
Revision No.	00	Page 1 of 8
Prepared by:	Reviewed By:	Approved & Issued By:

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TPSODL	TP SOUTHERN ODISHA DISTRIBUTION LIMITED, BERHAMPUR	
	TECHNICAL SPECIFICATION	
Document Title	SPECIFICATION FOR GI PIPE 150mm Dia. NB Class-B	
Document No.	ENG-MCH-055 A	Issue Date: 25.07.2023
Revision No.	00	Page 2 of 8
Prepared by:	Reviewed By:	Approved & Issued By:

1. SCOPE:

The specification covers technical requirements of design, Manufacturing, testing, Inspection, supply and transportation of Heavy type GI Earth Pipe Electrode. Scope also includes transportation & unloading at store / site.

2. APPLICABLE STANDARDS:

The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with the latest editions of the following Indian, International Standards and shall conform to the regulations of the local authorities:

IS 1239 (Part-1)	Specification of steel tubes, Tubular and other wrought steel fittings
IS 1239 (Part-2)	Specification of steel tubes, Tubular and other steel fittings
IS 10748	Hot- rolled steel strip for Welded Tubes and Pipes
IS: 228	Methods of Chemical analysis for steels
IS: 4759	Specification for Hot Dip Zinc Coating on structural steel and other allied products
IS: 4711	Methods for sampling of steel pipes, tubes, fittings
IS 3043	Code for practice of Earthing

3. CLIMATIC CONDITIONS OF THE INSTALLATION:

1	Maximum ambient temperature	50 deg C
2	Max. Daily average ambient temp	35 deg C
3	Min Ambient Temperature	0 deg C
4	Maximum Humidity	95%
5	Average Annual Rainfall	150cm
6	Average No. of rainy days per annum	120
7	Altitude above MSL not exceeding	1000m
8	Wind Pressure	300 Km/hr
9	Earthquakes of an intensity in horizontal direction	equivalent to seismic acceleration of 0.3g
10	Earthquakes of an intensity in vertical direction	equivalent to seismic acceleration of 0.15g (g being acceleration due to gravity)

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TPSODL service area has heavy saline conditions along the coast and High cyclonic Intensity winds with speed upto 300 Kmph. The atmosphere is generally laden with mild acid and dust in suspension during the dry months and is subjected to fog in cold months.

4. GENERAL TECHNICAL REQUIREMENTS:

SL. No	TECHNICAL PARTICULAR	Desired Value
1	Diameter of earthing Pipe	150 mm dia
2	Standard	IS 1239
3	Material	GI Pipe
4	Make	JINDAL /TATA
5	Class	Heavy
6	Outdoor diameter	163.9 mm min. to 166.5 mm max.
7	Wall thickness	5.4 mm
8	% of Elongation	20
9	Tensile strength	320 N/mm ²
10	Length of pipe earthing	As per RC/RO
11	Dimensions of holes	12 mm
12	Tolerance on dimensions/weight	+/-5 %
13	Galvanizing shall confirm	IS: 2633, IS: 2629
14	Weight	21.3 Kg/Mtr.
15	Tolerance	As per IS 1239 Latest Amd.

5. GENERAL CONSTRUCTION:


For welded and seamless plain end steel tubes intended for different use in electricity distribution utility shall comply IS 1239 (Part-1). Plain ends of the tubes are cleanly finished by normal deburring process. For tubes of any thickness the minimum mass of Zinc Coating is 360 gm Sq.mtr. The Zinc coating on the tube shall be uniform and tested in accordance with IS 4736. The welded tubes shall be manufactured from hot rolled steel strip for welded tubes and pipes confirming to IS 10748. Pipe shall be strictly from approved vendors i.e. TATA/JINDAL. The hot dip galvanization shall be done only after the all fabrication and welding done. Zinc electroplated/painted material will not be accepted. The nut bolt and washer s provided shall be as per the relevant IS. Chemical composition for GI earth pipe are in below:

Carbon: 0.20% (max.)

Manganese: 1.30% (max.)

Phosphorus: 0.04% (max.)

Sulphur: 0.04% (max.)

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6. MARKING:

The unit shall be appropriately marked as

- a) TPSODL
- b) Manufacture's name or trademark
- c) PO No.
- d) Year of Manufacturing

7. TESTS:

The bidder shall be required to submit complete set of the following test reports along with the offer:-

7.1 ACCEPTANCE TESTS

- i) Visual Inspection
- ii) Verification of Dimensions
- iii) Tensile Strength
- iv) Bend Test
- v) Hot Dip galvanizing
- vi) Determination of mass of Zinc coating on Zinc coated iron and steel

7.2 ROUTINE TESTS


Same as Acceptance Test

7.3 TYPE TESTS

- i) Visual Inspection
- ii) Verification of Dimensions
- iii) Tensile Strength
- iv) Bend Test
- v) Flattening test (dia.>50mm)
- vi) Hot Dip galvanizing
- vii) Determination of mass of Zinc coating on Zinc coated iron and steel

8. TYPE TEST CERTIFICATES:

The Bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at **CPRI / ERDA / Other Government Labs** as per relevant IS. Type tests should have been conducted during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports, i.e. any test report not acceptable, same shall be carried out without any cost implication to TPSODL.

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9. PRE-DISPATCH INSPECTION:

The material shall be subject to inspection by a duly authorized representative of the TPSODL. Inspection may be made at any stage of manufacture at the discretion of the purchaser and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Bidder shall grant free access to the places of manufacture to TPSODL's representatives at all times when the work is in progress. Inspection by the TPSODL or its authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TPSODL.

Following documents shall be sent along with material.


- a) Test reports
- b) MDCC issued by TPSODL
- c) TPSODL Invoice in duplicate
- d) Packing list
- e) Drawings & catalogue
- f) Guarantee / Warrantee card
- g) Delivery Challan
- h) Other Documents (as applicable)

10. INSPECTION AFTER RECEIPT AT STORE:

The material received at TPSODL, Odisha store will be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Engineering department.

11. GUARANTEE:

Bidder shall stand guarantee towards design, materials, workmanship & quality of process/ manufacturing of items under the contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the Company up to a period of 18 months from the date of commissioning or 24 months from the date of last supplies made under the contract, whichever is earlier, supplier shall be liable to undertake to replace/rectify such defects at his own costs. within mutually agreed timeframe, and to the entire satisfaction of the Company, failing which the Company will be at liberty to get it replaced/rectified at supplier's risks and costs and recover all such expenses plus the Company's own charges (@ 20% of expenses incurred), from the supplier or from the "Security cum Performance Deposit" as the case may be.

	TP SOUTHERN ODISHA DISTRIBUTION LIMITED, BERHAMPUR	
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12. PACKING:

Supplier shall ensure that all material covered by this specification shall be prepared for rail/road transport (local equipment) and be packed in such a manner as to protect it from damage in transit. The bidder shall provide instructions regarding handling and storage precautions to be taken at site.

13. TENDER SAMPLE:

Not Applicable

14. QUALITY CONTROL:

The bidder shall submit QAP indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. The Purchaser's engineer or its nominated representative shall have free access to the manufacturer's/sub-supplier's works to carry out inspections.

15. TESTING FACILITIES:

Supplier/ Manufacturer shall have adequate in-house testing facilities for carrying out all routine tests & acceptance tests as per relevant Indian standards.

16. MANUFACTURING FACILITIES:

The successful bidder shall submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart should be in line with the Quality assurance plan submitted with the offer.

17. SPARES, ACCESSORIES AND TOOLS

Not applicable.

18. DRAWINGS AND DOCUMENTS:

Following drawings and documents shall be submitted in line with the requirement of Tender specifications:

- Completely filled in Schedule "A" Guaranteed Technical Particulars & Schedule "B" Deviations
- Work Experience details
- Type test certificates
- Drawing 1 set of Hard Copy & Soft copy PDF File containing complete information about manufacturing

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Revision No.	00	Page 7 of 8
Prepared by:	Reviewed By:	Approved & Issued By:

19. SCHEDULE- "A" GUARANTEED TECHNICAL PARTICULARS: -

SL. No	TECHNICAL PARTICULAR	TO BE FURNISHED BY THE BIDDER
1	Diameter of earthing Pipe	150 mm dia
2	Standard	
3	Material	
4	Make	
5	Class	
6	Outdoor diameter	
7	Wall thickness	
8	% of Elongation	
9	Tensile strength	
10	Length of pipe earthing	
13	Galvanizing shall confirm	
14	Weight	
15	Tolerances	

20. SCHEDULE "B" DEVIATIONS:

(TO BE ENCLOSED WITH TECHNICAL BID)

All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the purchaser's specifications:

SL. No	Clause No.	Details of deviation with justifications

We confirm that there are no deviations apart from those detailed above.

Seal of the Company:

Signature

Designation

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1. SCOPE:

This specification covers technical requirements of design, manufacture, construction, performance, Supply Installation testing & commissioning (SITC) of Maintenance free earthing, at TPSODL's provided location. Ba should responsible for following activity as a part of ITC work:

- After selecting the designated site BA has to measure the earth resistance value of each earth pit & earth strip.
- New earth pit location Shall be decided on the mutual agreement of client & bidder.
- Transportation of earth electrode & GEM to the site is in the scope of BA
- All material should be verified by the EIC of TPSODL before the installation.
- BA should take care of every safety precaution as per TATA POWER safety measures
- BA should responsible for arranging all necessary testing equipment & all test reports like soil resistivity test etc.
- After installation of earth pit BA should produce records for earth resistance against newly constructed earth pit.
- BA should connect the earth pit though GI flats. Supply, transportation, loading & unloading at site is in bidder's scope.
- The earth resistance value of both earth pit & earth strip shall be below 2ohm for a time period of 15 years.
- The earthing system has been thoroughly inspected and tested to verify compliance with design specifications and safety standards. Test results are documented and provided as part of this guarantee.
- BA should deploy sufficient man power to complete the work with in the stipulated time. Client should not suffer delay in work due to insufficient or unskilled man power.
-

2. APPLICABLE STANDARDS

The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with the latest editions of the following Indian, International standards and shall conforms to the regulations of the local authorities:

Compliance to Covered

<i>S.no</i>	<i>Standard</i>
1.	IS 3043
2.	IEEE 80
3.	ANSI (American National Standards)
4.	IEC 62561-7
5.	Relevant BS (British Standard)
6.	UL 467
7.	EN-50164-2:2008
8.	IEC-EN 62561-2:2012

Initiator		Approval	
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9	IS 2069
10	IS 2633

3. CLIMATIC CONDITIONS OF THE INSTALLATION:

The service conditions shall be as follows:

1. Maximum altitude above sea level 1,000m
2. Maximum ambient air temperature 50°C
3. Maximum daily average ambient air temperature 35°C
4. Minimum ambient air temperature 0°C
5. Maximum relative humidity 95%
6. Average number of thunderstorm days per annum (isokeraunic level) 70
7. Average number of rainy days per annum 120
8. Average annual rainfall 150cm
9. Earthquakes of an intensity in horizontal direction - equivalent to seismic acceleration of 0.3g
10. Earthquakes of an intensity in vertical direction - equivalent to seismic acceleration of 0.15g (g being acceleration due to gravity)
- 11 Wind velocity: 300 km/hr, 200 km/hr and 160 km/hr. environmentally, some of the regions, where the work will take place includes coastal areas, subject to high relative humidity, which can give rise to condensation. Onshore winds will frequently be salt laden. On occasions, the combination of salt and condensation may create pollution conditions for outdoor insulators. Some places are in heavily industrial polluted areas. Therefore, Outdoor material and equipment shall be designed and protected for use in exposed, heavily polluted, salty, corrosive and humid coastal atmosphere

The design of equipment and accessories shall be suitable to withstand seismic forces corresponding to an acceleration of 0.1 g.

4. GENERAL TECHNICAL PARTICULARS & REQUIREMENTS:

a. For Earth Electrode & GEM:

S. No		Description
1.		COPPER BONDED EARTH RODS
	1.1	The Earth Rods shall have a nominal (actual) dia of 5/8" (14.2 mm) and Length of 10' (3 M). The Rods shall have a steel core with molecular bonding Of 250 micron of copper as per ANSI/UL 467, CSA-CS22.2 No. 41
	1.2	The core used shall be 1035 steel cold drawn with tensile strength of min. 90000 psi.

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	1.3	A nickel layer is applied to steel core (and subsequently copper) by an Electrolytic process forming a metallurgical bond between the three. The copper used shall be rated at 99.95% Copper. The thickness of copper layer shall be uniform 0.010" (250 micron) throughout the rod length.
	1.4	The Earth Rod shall be UL (Under writers Laboratory) listed and should have the UL mark, with UL Code Number, Company Name & Part Number. The Life Expectancy of Copper Bonding must be guaranteed for more than 35 Years.
	1.5	The Rods should be manufactured by a company of high repute to ensure Quality of Copper Bonding. Having a Minimum Experience of 20 years.
	1.6	The Ground Rod must be able to disperse/handle 30 KA, the bidder to Provide necessary test certificate from approved Laboratory.
	1.7	The Ground Rod must have passed the Bend Test for a minimum of 70 Degree bend.
	1.8	The Ground Rod Must be compliant to EN-50164-2:2008.
	1.9	The Ground Rod Must be compliant to IEC-EN 62561-2:2012.
2		GROUND ENHANCEMENT MATERIAL-GEM (25-A)
	2.1	GROUND ENHANCEMENT MATERIAL-GEM (25-A) shall be permanent and maintenance free (no Re-Charging with Salts or any other Chemicals) and shall maintain its earth resistance with time.
	2.2	It must set up firmly and should not dissolve or decompose or otherwise pollute the soil or local water table.
	2.3	GROUND ENHANCEMENT MATERIAL-GEM (25-A) must be suitable for use in dry form or slurry form.
	2.4	The GROUND ENHANCEMENT MATERIAL-GEM (25-A) shall not depend on the continuous Presence of water to maintain its conductivity. It shall not require any periodic Charging treatment or replacement.
	2.5	GROUND ENHANCEMENT MATERIAL-GEM (25-A) in its set form shall have a resistivity of not more than 0.12 ohm-m. The bidder shall provide Test Certificate in support of this.

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	2.6	The material should have been subjected to long term study to verify the Claims made by manufacturers about its soil resistivity reducing qualities.
	2.7	GROUND ENHANCEMENT MATERIAL-GEM (25-A) shall meet the specification as per IEEE 80 Para 14.5(d) to lower Soil Resistivity.
	2.8	The material shall conform to IEC-62561 Part-7 – Requirement of Earthing

b. For GI flat:

Sl no	Description	requirement
1	Size	i. 65x10 (5.1 Kg/M) ii. 50x8 (3.1 Kg/m)
2	Material	Hot-Dip Galvanized Flat
	Make	SAIL, TATA Steel, ESSAR, JSW Steel
	Grade of Steel	E 250 A
	Minimum Tensile Strength in Mpa	410
	Yield Stress in Mpa	250
	Percentage Elongation (Min.) at Gauge Length	23%
	Bend Test (Internal Dia	2t
	Mass of Zinc Coating	705 gm/m ²
	Zinc Coating Thickness & No of Dips	100 Micron (6 Dip)
	Chemical composition	Grade: E 250 A (As per IS: 2062)
	Standard length of supply	6 Metre Long
	Tolerances	As per IS 1852 latest Amendment

5. TEST REPORTS:

All routine, acceptance & type tests shall be carried out in accordance with the above relevant IS/IEC/EN/ASTM Standards. Routine / Acceptance tests may be witnessed by the purchaser / his authorized representative, if so desired. All the components as applicable shall be type tested as per the relevant standards. Following tests shall be necessarily conducted on the equipment in addition to the others specified in the relevant spec.

a. Type test for earth electrode & Ground enhancement material:

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The bidder shall furnish the type test certificates for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI / ERDA Labs, as per the relevant standards. Type test should have been conducted in certified Test Laboratories during the period not exceeding 5 years from the date of opening the bid. However, Type Test certificated which are older than 5 years from date of bid opening, may be accepted as a special case, provided there is no change in corresponding IS / IEC standards. In the event of any discrepancy in the test reports i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TPSODL, Odisha.

<i>S. No.</i>	<i>GEM & ROD TEST REPORTS / CERTIFICATIONS</i>
1)	CPRI REPORT for Short-Time Current Test Conducted on Copper Bonded Steel Earth Rod of 5/8 “(14.25 mm) Dia& 3.05 m long subjected to 14 KA rms for 1.0 S & 30 KA Peak.
2)	Test Reports for verification of Compliance to EN-50164-2:2008 & IEC-EN 62561-2:2012.
3)	UL CERTIFICATION (ANSI/UL 467).
4)	KEMA –KEUR.
5)	Leaching Test, Sulphur determination Test Report of GEM (IEC 62561- 7).
6)	GEM Resistivity Report & Marking Compliance as per (IEC 62561-7) .
7)	Test to prove thatGEM-25Ais Environment Friendly.
8)	Resistivity Test Report of GEM.

b. Type test for GI flat :

- 1)Test for Mechanical Properties (As per 1239 Part-1: 2004 or Latest Amendment clause no.14.1 & 14.1.1)
 - Percentage of Elongation.
 - Tensile strength.
- 2) Mass of zinc coating. (As per 4736:1986 or Latest Amendment clause no.5.1)
- 3) Chemical composition. (As per 1239 Part-1: 2004 or Latest Amendment clause no.6.1.1)

c. Routine & acceptance tests:

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The following tests shall be got conducted in presence of TPSODL representative as per IS: 1239 Part-1: 2004 (Latest Amendment) on the samples taken from the offered lot material for the purpose of acceptance of that lot of material.

- 1) Dimension of GI Flat. (As per IS 1239 Part-1: 2004 clause No.9.1 a&b)-Test shall be performed.
- 2) Chemical composition (Manufacturer's Test Certificate for raw material Document Review only.)
- 3) Mass of zinc coating. (As per 4736:1986 or Latest Amendment clause no.5.1)-Test shall be performed.
- 4) Test for mechanical properties (Manufacturer's Test Certificate for raw material-Document Review only.)
- 5) Galvanizing/Electroplating test
- 6) Visual Inspection test to confirm products free from any defects

In order to verify the performance of bidder's workmanship & quality of product, the earth resistance value should be monitored & recorded by TPSODL'S team. In case bidder will not able to provide earth resistance value as declared in declared time period, 20% cost of total project shall be penalize.

6. PRE-DISPATCH INSPECTION & DELIVERY:

Equipment shall be subject to inspection by a duly authorized representative of the TPSODL, Odisha. Bidder shall grant free access to the places of manufacture to TPSODL, Odisha representatives at all times when the work is in progress. Inspection by the TPSODL, Odisha or it's authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TPSODL, Odisha. Following documents shall be sent along with material

- a) MDCC issued by TPSODL, Odisha
- b) Invoice in duplicate
- c) Packing list
- d) Drawings & catalogue
- e) Guarantee / Warrantee card
- f) Delivery Challan
- g) Other documents (as applicable)

7. Guaranty Period:

Bidder shall stand guarantee towards design, materials, workmanship & quality of process/ manufacturing of items under the contract for due and intended performance of the same, as an integrated product delivered under this contract. The earthing system shall perform effectively under normal operating conditions, providing a low impedance path (earth resistance value shall be under 2ohm) to earth to safely dissipate electrical surges and faults, supplier shall be liable to undertake to replace/rectify such defects

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at his own costs, in case any earth pit resistance found above this value within mutually agreed timeframe, and to the entire satisfaction of the Company, failing which the Company will be at liberty to get it replaced/rectified at supplier's risks and costs and recover all such expenses plus the Company's own charges (@ 20% of expenses incurred), from the supplier or from the "Security cum Performance Deposit" as the case may be.

8. MINIMUM TESTING FACILITIES :

Bidder shall have adequate in-house testing facilities for carrying out all routine tests & acceptance tests as per relevant International / Indian standards.

9. MANUFACTURING ACTIVITIES :

The successful bidder will have to submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart should be in line with the Quality assurance plan submitted with the offer. This bar chart will have to be submitted within 15 days from the release of the order. Also BA should submit OEM (original equipment manufacturer) certificate at the time of bidding in case a supplier & submit manufacturing authorization form (MAF) in case bidder is a manufacturer.

10. TENDER SAMPLE: NA

11. NAME PLATE AND MARKING: NA

12. DRAWINGS AND DOCUMENTS :


Following documents shall be prepared based on TPSODL specifications and statutory requirements with complete BOM and shall be submitted with the bid:

- Completely filled in Technical Particulars.
- General description of the equipment and all components including brochures.
- Type test Certificate
- Experience Certificate

11. SCHEDULE OF DEVIATIONS (TO BE ENCLOSED WITH TECHNICAL BID)

All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the purchaser's specifications:

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S. No	Clause No.	Details of deviation with justifications

We confirm that there is no deviation apart from those detailed above.

Seal of the Company:

Signature:

Designation

Initiator		Approval	
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