

Reply for Pre bid Queries				
Tender No		TPSODL/OT/2023-24/095		
Package Name		Rate Contract for Automation Equipment and Services at TPSODL		
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	Annexure-II, Page 2 of 38, Specifications for Automation Equipment Services required:	1. Bidder shall undertake shifting of supplied material from location of unloading to the allocated location for installation	1. We understand that all the material has to be supplied directly to the S/s where material has to be installed and required storage space at each S/s will be provided by TPSODL. Kindly confirm. 2. We request TPSODL to kindly share the location list of the S/s where material has to be installed as same is required for costing of the freight charges.	1. Confirmed. All material need to be supplied directly to PSS where material to be installed. 2. Tentative PSS Location as per the attached Annexure-I
2	Annexure-II, Page 2 of 38, Specifications for Automation Equipment Services required:	3. Cable to be laid in the cable trays provided to C&R panel inside control room with cabling, termination and wiring including proper dressing of wiring	We understand that all cable trenches and cable trays required for laying of cable within the S/s will be provided by TPSODL. Kindly confirm.	Confirmed. Cable tray & trenches will be provided by TPSODL
3	Annexure-II, Page 2 of 38, Specifications for Automation Equipment Services required:	3. Required auxiliary AC/DC power cable, supply as well as laying from ACDB/DCDB inside control room (of max 20m x 20m area) to RTU panel, Cable to be laid in the cable trays provided to C&R panel inside control room with cabling, termination and wiring including proper dressing of wiring.	We understand any cabling outside the control room or Kiosk is not included in the scope of the bidder. Kindly confirm.	Required auxiliary AC/DC power cable, supply as well as laying from ACDB/DCDB inside control room (of max 20m x 20m area) to RTU panel & Communication network Cable supply as well as laying from C&R panel are included in the scope of bidder.
4	Annexure-II, Page 3 of 38, Specifications for Automation Equipment Services required:	5. Required ethernet cable (CAT-6) supply as well as laying from C&R panels to ethernet switches to RTU panel. Max no of panels will be 15 numbers. Cable (Double Run) for networking to be laid from C&R panels till Ethernet Switch in. Loop cables among Ethernet switches installed in C&R panels and the Ethernet Switches installed in RTU Panel also to be laid till RTU panel. 6. Required serial cable supply as well as laying from C&R panels to RTU panel for serial devices. Cable (Double Run) for networking from C&R panels till RTU Panel to be laid.	1. We understand that ethernet switches at RTU end or CRP end is in scope of TPSODL. Kindly confirm. 2. We understand the MFM/MFT and Numerical relays at substations is in scope of TPSODL. Kindly confirm.	1. Confirmed. Switches will be provided by TPSODL. 2. Confirm. MFM/MFT & Numerical relays at PSS are in scope of TPSODL.

5	Annexure-II, Page 3 of 38, Specifications for Automation Equipment Services required:	7. Earthing to be extended from RTU panel to the station earthing pit by the bidder.	1. We understand that existing station earthing pit has to be used which will be provided by TPSODL. Kindly confirm. 2. We request TPSODL to confirm the distance between the RTU panel and station earthing Pit.	1. Confirmed. Earthing pit will be provided by TPSODL. 2. Distance between RTU Panel & earthing pit will be 30 Mtr. Maximum.
6	Annexure-II, Page 3 of 38, Specifications for Automation Equipment Services required:	9. All connectivity and integration services for Relays/MFM/ any other available devices to RTU as well as integration with existing GE SCADA is in bidder's scope.	We understand that any configuration/changes to be done at GE SCADA/Relays/MFM/any third party devices will be done by TPSODL. Kindly confirm.	Confirmed. Any configuration/changes to be done at GE SCADA/Relays/MFM/any third party devices will be done by TPSODL.
7	Annexure-II, Page 5 of 38 4.0 General Technical Requirements	The BA should provide necessary training to the personnel recommended by TPSODL to maintain the system and troubleshooting reports.	We understand that contractor has to provide training for a batch (maximum of 10 people) for five days. Kindly confirm.	Contractor has to provide training for a batch (maximum of 20 people) for five days
8	Annexure-II, Page 5 of 38 4.2 General System Design	All IEDs must have conformal coating for protection against harsh environments.	All IEDs at substations are in scope of TPSODL. Kindly confirm.	Confirmed. All IEDs at substations are in scope of TPSODL.
9	Annexure-II, Page 5 of 38 4.3 System Architecture	The SAS shall be based on a decentralized architecture and on a concept of bay-oriented, distributed intelligence. Functions shall be decentralized, object-oriented and located as close as possible to the process. At Station Level, the entire station shall be controlled and supervised from the station Remote Terminal Unit/Data Concentrator Unit. It shall also be possible to control and monitor the bay from the bay level equipment at all times.	We understand that bidder scope is limited to supply of items mentioned in BoQ/Price Schedule only. Kindly confirm.	This is SITC (Supply, Installation, Testing & Commissioning) job for mentioned BOQ in Tender.
10	Annexure-II, Page 9 of 38 4.6 Communication Protocol	In addition, the RTU / Data Concentrator is expected to have serial ports RS 485 for communication to auxiliary devices such as MFMs, Meters, NIDSs, DCDBs, APFCs and other IEDs	We request TPSODL to kindly confirm the maximum serial ports RS 485 to be provided in each RTU as no details related to S/s, its feeders and auxiliary devices which needs to be integrated with RTU has been provided in the tender.	4 nos RS485 port
11	Annexure-II, Page 11 of 38 4.10 Remote Terminal Unit (RTU) OR Data Concentrator (DC)	5. It should have enough RS485 ports to communicate with all Modbus devices taking into consideration that each Modbus loop will not have more than 8 devices.	We request TPSODL to kindly confirm the maximum serial ports RS 485 to be provided in each RTU as no details related to S/s, its feeders and auxiliary devices which needs to be integrated with RTU has been provided in the tender.	4 nos RS485 port

12	Annexure-II,Page 12 of 38 4.10 Remote Terminal Unit (RTU) OR Data Concentrator (DC)	11. I/O requirement: 32 DI, 8 DO, 8 AI	1. As per price schedule "Pre-Wired RTU Panel I/O Requirement: with 16 DI, 8 DO, 8 AI with Auxiliary relay for each Digital Input & Output". We understand that 16DI, 8 DO, 8 AI needs to be provided in RTU. Kindly confirm. 2. Request TPSODL to confirm whether we can provide combo I/O module for the I/Os to be provided in RTU.	1. I/O requirement: 32 DI, 8 DO, 8 AI. 2. Combo I/O module will not be accepted.
13	Annexure-II,Page 11 of 38 4.10 Remote Terminal Unit (RTU) OR Data Concentrator (DC)	8. In addition to above, Bidder shall provide Industrial Grade Serial Server of 4 RS485 ports with two Ethernet copper port as an optional item. This server shall communicate with RTU on IEC61850/IEC104/Modbus TCP protocol.	1. We understand that in place of industrial grade server we can propose communication module (4 RS485 ports with two Ethernet copper port) which can be installed within RTU rack itself. Please confirm. 2. There is no provision in the Annexure-I Schedule for Items to quote for Industrial Grade Serial Server of 4 RS485 ports with two Ethernet copper port as an optional item. Request you to kindly amend annexure-I accordingly.	Serial server not required.
14	Annexure-II,Page 12 of 38 4.10 Remote Terminal Unit (RTU) OR Data Concentrator (DC)	13. Bidder shall consider Dual Input Source for energizing the RTU along with Diode-oring unit.	We request TPSODL to kindly confirm the Dual input source which will be provided by TPSODL at each S/s for the RTU as there is no redundancy requirement mentioned in the tender.	Standalone auxillary power source will be available in PSS. Dual input source with Diode Oring or DC changr over unit shall be provided in the RTU panel by bidder.
15	Annexure-II,Page 14 of 38 4.10 Remote Terminal Unit (RTU) OR Data Concentrator (DC)	37. It should have hardware design including CPU, Power Supply, Communication Modules and Bus Interface Unit/Card.	We understand that we need to provide single CPU, single PSU, single Serial Server of 4 RS485 ports with two Ethernet copper along with 16 DI, 8 DO, 8 AI in each RTU. Kindly confirm.	Bidder has to be provided Single CPU, Single PSU,4 RS485 ports with two Ethernet copper along with 32 DI, 8 DO, 8 AI in each RTU. Serial server not required.
16	Annexure-II,Page 14 of 38 4.10 Remote Terminal Unit (RTU) OR Data Concentrator (DC)	38. It should have enough RS485 ports to communicate with all Modbus devices taking into consideration that each Modbus loop will not have more than 8 devices.	We understand that Serial Server of 4 RS485 ports with two Ethernet copper needs to be provided in each RTU. Kindly confirm.	Confirmed. 4 RS485 ports with two Ethernet Copper need to be provided in each RTU by bidder. Serial server not required.
17	Annexure-II,Page 15 of 38 4.10 Remote Terminal Unit (RTU) OR Data Concentrator (DC)	51. Provisioning of RF receiver module or 3G/4G network module in RTU so that RTU shall integrate with FRTU/or other IEDs over RF or 3G/4G interface also.	We understand that 4G/3G modem cum router for each RTU location is in scope of M/s TPSODL. Kindly confirm.	Confirmed. Router will be in scope of TPSODL.
18	Annexure-II,Page 16 of 38 4.11 Contact Multiplier Relay with Mounting Base to be mounted inside the RTU panel	2. Contact Rating: 5 Amps. @ 24 V/48 V DC 14. Other Accessories: Necessary TB, Din Rail channel and other accessories to mount in CRP	1. Request TPSODL to confirm how many sub-stations will have 24V DC and 48V DC as same is required for proper estimation of cost. 2. We understand that 16 CMRs has to be provided with each RTU which will be mounted in CRPs. Kindly confirm. 3. We understand that cabling from CMR to RTU panel is in scope of M/s TPSODL. Kindly confirm.	1. Kindly consider all S/S will have 24 VDC 2. CMR relay quantities will be as same as DI quantities. 3. CMR will be installed in RTU panel and cabling is on bidder's scope.
19	Annexure-II,Page 16 of 38 4.12 Interposing Relay with Mounting Base for Digital Output to be mounted inside the RTU panel	1. Auxiliary Power. 24 V / 48 V DC	1. Request TPSODL to confirm how many sub-stations will have 24V DC and 48V DC as same is required for proper estimation of cost. 2. We understand that 8 interposing relay needs to be supplied with each RTU. Kindly confirm. 2. We understand that cabling from interposing relay to CRP panel is in scope of TPSODL. Kindly confirm.	1. Kindly consider all S/S will have 24 VDC 2. Confirmed. 8 interposing relay needs to be supplied with each RTU. 3. Confirmed. Cabling from interposing relay to CRP panel is in TPSODL scope.

20	Annexure-II, Page 17 of 38 4.15 RTU/IED Simulator & Protocol Analyzer software tool	RTU simulator tool shall be provided to test the communication interfaces of Master station, RTU and IEDs.	Only RTU configuration software is mentioned in Annexure-I Schedule for Items which needs to be supplied by Bidder. Kindly confirm.	Confirmed. RTU configuration software to be supplied by bidder. IED Simulator & Protocol analyser software tool not required.
21	Annexure-II, Page 17 of 38 4.16 Serial Server	Industrial grade Serial Server shall be used to communicate with additional numbers of serial devices with RTU. Serial Server shall have 4 Nos. RS485 serial ports and 2 Nos. Ethernet port.	We understand that serial server needs to be supplied with each RTU. Kindly confirm.	Serial server not required.
22	Annexure-II, Page 18 of 38 4.17 GPRS Modem	SITC of 5G/4G GPRS modem will be in the scope of the Bidder, however, SIM and subscription charges will be arranged by the purchaser.	1. There is no quantity of 5G/4G GPRS modem to be provided in Annexure-I Schedule for Items. Request you to kindly amend it accordingly. 2. We understand that bidder can provide inbuilt 4G modem in the RTU also. Kindly confirm.	5G/4G modem or Router will be in scope of TPSODL.
23	Annexure-II, Page 18 of 38 4.19 Fibre Optic Cable	Between Control Room and Switchyard/Switchgear Room: 4 Core, 62.5/125µm Multi-mode, Loose tube, Jelly filled, Armoured Fiber Optic Cable.	Since ethernet cable (CAT-6) supply as well as laying from C&R panels to ethernet switches to RTU panel is part of scope and no FO cable is required, we understand no FO cable needs to be supplied by bidder. Kindly confirm.	Confirmed. No FO cable is required.
24	Annexure-II, Page 18 of 38 4.22 Telephone Cable	1 Pair, 0.5/0.63 sqmm Solid Bare Copper Conductor, PE Insulation, Telephone Cable with PVC Outer Jacket	We understand that no telephone cable needs to be supplied by the bidder. Kindly confirm.	Confirmed. NO telephone cable is required.
25	Annexure-II, Page 20 of 38 4.27 Remote Monitoring and Maintenance	The vendor should provide a configuration and diagnostic software which should able to access the Data Concentrator and all the other IEDs using the TPSODL TCP/IP WAN network	Since IEDs are third party devices supplied by different vendor, configuration and diagnostic software for IEDs is not in the scope of the RTU vendor. Kindly confirm.	Confirmed. Configuration & diagnostic software for IED is not in scope of bidder.
26	Annexure-II, Page 21 of 38 4.28 Grounding	2 no. of pits required RTU panel connected separately which will be connected with the Grid Earthing mesh, supply of pits is not in manufacturer scope but connection to up to pits to be provided.	Request TPSODL to confirm the tentative distance between the earthing pit (Provided by TPSODL) and RTU panel.	Distance between RTU Panel & earthing pit will be 30 Mtr. Maximum.
27	Annexure-II, Page 22 of 38 4.35 Low Voltage Control Cables	Cables shall be laid in Cables trays and in indoor trenches as a complete system. Trays shall be supported properly from the building structure.	We understand that cable trays and trenches for cable laying will be made available in all the substations by TPSODL. Kindly confirm.	Confirmed. Cable tray & trenches will be provided by TPSODL

28	Annexure-II, Page 23 of 38 4.37 Cyber Security Audit	<p>i. Cyber Security Audit shall include all the system installed at Substation (Bidder's OWN and System Installed by TPSODL) the following indicative/tentative List of Equipment in the substation is mentioned below–</p> <ul style="list-style-type: none"> <li>• IEDs - BCPU, DC System Controller, TMU, RTU, FDS, Engineering Laptop etc.</li> <li>• Networking Equipment – Ethernet Switches, Firewalls, Routers, GPS receiver, etc.</li> <li>• Configuration software of RTU, BCPU, FDS, DC System Controller etc.</li> <li>• Other software components – Operating system, MS Office applications, Adobe, SQL, JAVA, Antivirus etc.</li> </ul>	Due to any of the third party equipments if any re-certification has to be done due to issues found out in cyber security audit, same will be paid extra by TPSODL. Kindly confirm.	Confirmed.
29	Annexure-II, Page 24 of 38 4.40 HDPE Pipe (50 mm Dia)	As per IS 4984:2016, Material Grade: PE 100, Size/Class: DN 50 mm/ PN 6, Wall thickness (mm): 2.4-2.8, SDR: 21	No HDPE pipe needs to be supplied by the bidder. Kindly confirm.	Confirmed. No HDPE pipe needs to be supplied by the bidder.
30	Annexure-II, Page 24 of 38 6.0 Name Plate & Marking	A sticker shall be fixed to each material like RTU/DCU, IEDs, Ethernet Switches, Firewall, TMU and Energy Meters in a visible position and shall carry all the information as specified in the standards.	Since IEDs, Ethernet Switches, Firewall, TMU and Energy Meters are not part of the RFP and are supplied by third party vendors, we request TPSODL to kindly amend the clause accordingly.	Sticker shall be fixed to each material supplied by bidder only.
31	Annexure-II, Page 24 of 38 7.0 Tests	An integrated-FAT shall be conducted as per the TPSODL I-FAT Document (ENG-EHV-1006 Rev. 00 -Annexure-III)	We request TPSODL to kindly share the FAT Document (ENG-EHV-1006 Rev. 00 -Annexure-III).	FAT Procedure Document can be approved later.
32	Annexure-II, Page 24 of 38 7.0 Tests	If the complete system consists of parts from various suppliers or some parts are already installed on site, in such case supplier will arrange the intra-communication between RTU/DC and such IEDs to meet the requirement.	<ol style="list-style-type: none"> <li>1. Request TPSODL to confirm that all required support for intra-communication between RTU/DC and such IEDs will be provided by TPSODL.</li> <li>2. Request TPSODL to confirm the make/model and protocol on which parts from various suppliers or some parts are already installed on site and which needs to be integrated with RTU to be supplied under this package.</li> </ol>	<ol style="list-style-type: none"> <li>1. Intra-communication between RTU and IED is in bidders scope. ICD/SCD file will be provided by TPSODL.</li> <li>2. Bidder can get all the details by site survey of each PSS.</li> </ol>
33	Annexure-II, Page 25 of 38 8.0 Type Test Certificate	For type test of Energy Meter, please refer Clause 4.14 Energy Meter.	Since Energy Meters are not part of the RFP, we request TPSODL to kindly amend the clause accordingly.	Confirmed. Energy meters are not part of RFP/\.

34	Annexure-II, Page 27 of 38 11.0 Guarantee / Warranty Details	In the event any defect is found by the Company up to a period of 60 months from the date of commissioning supplier shall be liable to undertake to replace such defects at his own costs within the mutually agreed timeframe,	We understand that warranty will be date of commissioning of individual substation. Kindly confirm.	Confirmed. Warranty will be date of commissioning of individual substation.
35	Annexure-II, Page 28 of 38 13.0 Delivery	For Supply: Within 16 weeks from the date of manufacturing clearance. For Service: Within 3 weeks from the date of site clearance.	We understand that delivery will be applicable RO wise. Kindly confirm.	Confirmed. Delivery will be applicable as per RO.
36	Annexure-II, Page 28 of 38 14.0 Training	The contractor shall arrange on its own cost all hardware training platform required for successful training and understanding in India at manufacturer's work	We request TPSODL to confirm all the training as per RFP has to be done at manufacturer's work. Kindly confirm.	Confirmed. All the training s per RFP has to be done at manufacturer's/bidder's work.
37	Annexure-II, Page 33 of 38 18.1 Support Services SLA	2. Vendor to share Spare parts cost for RTU which will be valid for next 10 years.	We need to quote for spares as per Annexure-I Schedule for Items. Kindly confirm.	Confirmed.
38	Annexure-II, Page 33 of 38 18.1 Support Services SLA	1. Tri-party agreement to be made to have protection against quitting of executing vendor.	1. We understand that tri-party agreement has to be made in case bidder is not the OEM but channel partner of OEM of the quoted RTU. Kindly confirm. 2. Also request TPSODL to share the format of the tri-party agreement.	1. The Bidder shall be an OEM or channel partner for RTU.
39	Annexure-II, Page 36 of 38 19.0 Drawing and Documents	15. ICD/CID Cite (IED capability description file) 16. SCD file (substation configuration description) 17. MIB Files of RTU, TMU, Ethernet Switches & Firewall	Since IEDs, Ethernet Switches, Firewall, TMU and Energy Meters are not part of the RFP, we request TPSODL to kindly amend the clause accordingly.	Confirmed. IEDs, Ethernet Switches, Firewall, TMU and Energy Meters are not part of the RFP.
40	ANNEXURE I Schedule of Items, Page 18 of 31	Integration services for IEDs (free issue) and RTU including communication connectivity from IED to RTU panel as well as SCADA integration at Control Centre.- Lot 720	1. We request TPSODL to confirm that all the required ICD/CID & SCD File and its configuration on BCPU/BPU will be in IED supplier scope. Kindly Confirm. 2. All required ICD/CID/SCD file required for integration of IED with RTU will be provided by TPSODL. Kindly confirm. 3. We understand that all required changes required at SCADA/ADMS end including database creation for integration of RTUs is in scope of M/s TPSODL. Kindly confirm.	1. Confirmed. All the required ICD/CID & SCD File and its configuration on BCPU/BPU will be in IED supplier scope. 2. Confirmed. All required ICD/CID/SCD file required for integration of IED with RTU will be provided by TPSODL. 3. Confirmed. All required changes required at SCADA/ADMS end including database creation for integration of RTUs is in scope of M/s TPSODL.
41	ANNEXURE I Schedule of Items, Page 17 of 31	Services of RTU Panel, Communication and Other Supplied System (Supply & services for communication cables not required)- Lot 40	Request TPSODL to confirm which all communication cables are referred to in this line item.	CAT-6 & RS485 communication cable.
42	ANNEXURE I Schedule of Items, Page 18 of 31	Services of RTU Panel, Communication and Other Supplied System (Supply & services for communication cables required, with in scope of BA)- Lot 20	Request TPSODL to confirm which all communication cables are referred to in this line item.	CAT-6 & RS485 communication cable.

43	Annexure-II, Page 11 of 38 4.10 Remote Terminal Unit (RTU) OR Data Concentrator (DC)	The RTU/Data Concentrator shall be assembled from modular units, for example, power supply module, CPU and communications module, communication interface modules and modules for input/output purposes. I/O and serial cards shall be able to be arranged in the RTU rack in any order	We understand that only rack based or DIN Rail mounted RTU are acceptable to TPSODL. Request TPSODL to confirm the same.	Confirmed. Only rack based or DIN Rail mounted RTU are acceptable to TPSODL
44	Annexure-II, Page 12 of 38 4.10 Remote Terminal Unit (RTU) OR Data Concentrator (DC)	9. Separate maintenance port shall be provided with RTU. Suitable adaptor or converter shall be provided to communicate with Engineering Laptop on Ethernet port.	1. Request TPSODL to confirm that maintenance port is separate from the ethernet and serial communication port asked in the tender document. Kindly confirm. 2. We understand no Engineering laptop is to be supplied by bidder in the present tender. Kindly confirm.	1. Confirmed. Maintenance port shall be separate. 2. Engineering laptop is not required.
45	Cl. 1.7 QR	The bidder should either be an OEM for tendered equipment's or an authorized channel partner of OEM. Authorization Letter along with MAF from OEM to be submitted in this regard	We understand that bidder shall be an OEM for Automation System and as well as Numerical Protection IEDs. Please confirm	The Bidder shall be an OEM or channel partner for RTU.
46	Cl. 7.1 SCC	Delivery of equipment /material shall be completed within 12 weeks from the date of manufacturing clearance.	We shall complete the delivery as mentioned in Clause no. 13.0/Annexure-II i.e. 16 weeks from Manufactutance Clearance for supply. Services timeline can be discused and finalized as per site clearance.	Delivery shall be complete within 12 weeks from manufacturing clearance.
47	13.0/Delivery/Annexure-II	For Supply: Within 16 weeks from the date of manufacturing clearance. For Service: Within 3 weeks from the date of site clearance.		Delivery shall be complete within 12 weeks from manufacturing clearance. ITC Service shall be complete within 2 weeks from the date of site clearance.
48	Cl. 7.1 SCC	Installation of delivered equipment/ material shall be completed within 2 weeks from the date of delivery or clearance from TPSODL whichever is later.		ITC Service shall be complete within 2 weeks from the date of site clearance.
49	General Commercial Terms	GRN at site	Payment cycle would start from receipt of Panels at stores. No interlock with GRN to be considered.	Payment cycle shall start from GRN date. Bidder can ensure that user should complete GRN soon after material received at site.
50	Cl. 7.1 SCC	The vendor should ensure supply of spare parts and service for the quoted system for at least another 10 years after completion of warranty.	We shall ensure availability of originally supplied or functionally equivalent spares (as applicable )on chargeable basis beyond warranty period	Agreed.

51	7.3 Drawing Submission and Approval	The relevant drawings and GTPs need to be submitted within two weeks of receipt of Rate Contract by the successful bidder to TPSODL for approval. In case, re-submission of drawings is required on request of TPSODL, same needs to be submitted back to TPSODL within 5 days of such request.	We shall be submitting drawing after 4-6 weeks from clear inputs from customer. The re-submission will be done within 2 weeks	As per RFP. Drawing & GTPs need to be submitted within 2 weeks of receipt of RO to TPSODL for approval.
52	7.3 Drawing Submission and Approval	The relevant drawings and GTPs need to be submitted within two weeks of receipt of Rate Contract by the successful bidder to TPSODL for approval. In case, re-submission of drawings is required on request of TPSODL, same needs to be submitted back to TPSODL within 5 days of such request.	There shall be drawing approval in one go. We are not considering any lotwise drawing approval	Confirmed.
53	7.0 Integration Services for IEDs/Annexure-I/Schedule of Items	Integration services for IEDs (free issue) and RTU including communication connectivity from IED to RTU panel as well as SCADA integration at Control Centre.	Pls share the make, Model & quantity of IEDs to be integrated with RTU at each RTU system. Any integration activity with control center is not considered.	IED details will be shared at the time of integration.
54	Mandatory Spares/Annexure-I/schedule of Items	1. RTU Rack without panel as per Proposed Solution with all Application s/w, licenses, accessories, cables etc. 2. RTU Chassis 3. Interface modules & cables for I/O cards	These items are not applicable for us for main as well as spares supply	Kindly quote as per BOQ.
55	1.0 Scope/Annexure-II/Spec for automation equipment	Bidder shall undertake shifting of supplied material from location of unloading to the allocated location for installation.	Pls share the site details	Site details will be shared with RO. Tentative PSS Location as per the attached Annexure-I
56	1.0 Scope/Annexure-II/Spec for automation equipment	Bidder shall undertake shifting of supplied material from location of unloading to the allocated location for installation.	We shall be delivering panels at TPSODL central store. Any movement, loading unloading, shifting to control room shall be done by TPSODL.	1. Confirmed. All material need to be supplied directly to PSS where material to be installed. Tentative PSS Location as per the attached Annexure-I
57	General	Responsibility of watch & ward	We understand that safe storage space with necessary security arrangement will be provided by the TPSODL, so	Storage space will be made available at each PSS by TPSODL.



58	Annx II, 1.0 Scope, 2.0 Applicable Standards, 4.3 Architecture and Elsewhere	Communication accessories including all works required for successful integration with all IED's, Meters etc. on Station Bus and Process Bus level & with Master SCADA.	We understand there is no requirement of Process Bus in this project and accordingly all clauses related to process requirement are not applicable in this tender. Please confirm.	Confirmed.
59	Annx II, 1.0 Scope, Services Required pt. 3	Required auxiliary AC/DC power cable, supply as well as laying from ACDB/DCDB inside control room (of max 20m x 20m area) to RTU panel,	We request to exclude the scope for supply of ACDB/DCDB Power cables from bidder's scope, as it is not possible to supply unquantified amount of cable and keeping the prices in a long duration tender.	Clause can not be changed. Required auxiliary AC/DC power cable, supply as well as laying from ACDB/DCDB inside control room (of max 20m x 20m area) to RTU panel.
60	Annx II, 1.0 Scope, Services Required	5. Required ethernet cable (CAT-6) supply as well as laying from C&R panels to ethernet switches to RTU panel. Max no of panels will be 15 numbers. Cable (Double Run) for networking to be laid from C&R panels till Ethernet Switch in. Loop cables among Ethernet switches installed in C&R panels and the Ethernet Switches installed in RTU Panel also to be laid till RTU panel. 6. Required serial cable supply as well as laying from C&R panels to RTU panel for serial devices. Max no of panels will be 15 numbers. Cable (Double Run) for networking from C&R panels till RTU Panel to be laid.	These cables must be quantified/grid for ease of cost calculation.	Bidder can get these through site survey.
61	Annx II, 1.0 Scope, Services Required	7. Earthing to be extended from RTU panel to the station earthing pit by the bidder.	Pls specify the cable details along with laying length/grid	Cable length 30 mtr. Maximum. Cable must be copper earthing cable.
62	Annx II, 1.0 Scope, Services Required pt. 9 & Part B	All connectivity and integration services for Relays/MFM/ any other available devices to RTU as well as integration with existing GE SCADA is in bidder's scope.	We understand the integrable ICD files of IEDs will be provided by TPSODL for integration of IED with RTU. For SCADA integration our scope will be limited to substation end.	ICD/SCD files of IEDs will be provided by TPSODL for integration of IED with RTU.
63	Annx II, 1.0/4.10 RTU	12. All the cards/modules of the RTU/DC must have conformal coating for protection against harsh environments.	We understand that RTUs designed and tested for harsh environment are acceptable without need of separate conformal coating	Need of conformal coating of all the modules/cards of RTU are must.
64	Annx II, 4.3 System Architecture	Integration & testing of remote end LDR with RTU shall be in Scope of Bidder	We understand in this project there are no LDR's applicable. Please confirm.	Confirmed.
65	Annx II, 4.10.8 Type A RTU and Type B RTU	Bidder shall provide Industrial Grade Serial Server of 4 RS485 ports with two Ethernet copper port as an optional item	Please provide separate line item in price schedule to quote Serial Server as optional item.	Serial server not required. The RTU should have 4 nos RS485 port.

66	Annx II, 4.12 Simulator Software	RTU/IED Simulator & Protocol Analyzer software tool	We understand that this clause is not applicable and Simulator software is not required to be provided. Please confirm, else please provide the separate line item to quote for this item.	Confirmed. IED simulator & protocol analyser software tool not required.
67	Annx II, 4.15 GPRS Modem	SITC of 5G/4G GPRS modem will be in the scope of the Bidder,	We understand any sort of 2G/3G/4G/5G Router is not in the scope of bidder under this project. Please confirm.	Confirmed. Router is not in the scope of bidder.
68	Annx II, 4.17 Optical Fiber Cable	Between Control Room and Switchyard /Switchgear Room: 4 Core, 62.5/125µm Multi-mode, Loose tube, Jelly filled, Armoured Fiber Optic Cable.	We understand any sort of optical fiber cable is not in the scope of bidder under this project. Please confirm.	Confirmed. Fibre optical cable is not in the scope of bidder.
69	Annx II, 4.20 Telephone Cable	1 Pair, 0.5/0.63 sqmm Solid Bare Copper Conductor, PE Insulation, Telephone Cable with PVC Outer Jacket	We understand any sort of telephone cable is not in the scope of bidder under this project. Please confirm.	Confirmed. Telephone cable is not in the scope of bidder.
70	Annx II, 4.26 Grounding	Separate trench for cable laying for communication, automation & IED equipment shall be provided.	We understand the required trenches with cable trays will be provided as part of site readiness by TPSODL. Please confirm.	Confirmed. Trenches with cable trays will be provided by TPSODL.
71	Annx II, 4.37 Cyber security audit	a. Bidder to carry out Cyber Security Audit by Third Party Auditor for 10 PSS of the TPSODL.	We understand that this quantity shall be in % basis for allotted grids for bidders	Cyber security audit by third party auditor for 10 PSS of TPSODL is fixed and not in % basis.
72	Annx II, 4.37 Cyber security audit	i. Cyber Security Audit shall include all the system installed at Substation (Bidder's OWN and System Installed by TPSODL) the following indicative/tentative List of Equipment in the substation is mentioned below– <ul style="list-style-type: none"> <li>• IEDs - BCPU, DC System Controller, TMU, RTU, FDS, Engineering Laptop etc.</li> <li>• Networking Equipment – Ethernet Switches, Firewalls, Routers, GPS receiver, etc.</li> <li>• Configuration software of RTU, BCPU, FDS, DC System Controller etc.</li> <li>• Other software components – Operating system, MS Office applications, Adobe, SQL, JAVA, Antivirus etc.</li> </ul>	Cyber security audit shall be applicable for main items(excluding Spares) supplied under present tender only.Th	Cyber security audit shall include all the system installed at PSS and not supplied spares.
73	Annx, 11.0 Guarantee/Warranty	In the event any defect is found by the Company up to a period of 60 months from the date of commissioning supplier shall be liable to undertake to replace such defects at his own costs	We are proposing warranty period of 60 months from commissioning or 66 months from supply whichever is earlier against manufacturing defects.This warranty shall be acceptable lotwise and not from last lot of supply.	Agreed.

74	Annx, 13.0 Training	Contractor personnel who are experienced instructors and who speak understandable English shall conduct training.	We shall be offering total 3 days of training under this package. Any lotwise training shall not be applicable	Contractor has to provide training for a batch (maximum of 20 people) for 5 days
75	Annx, 18.1 Support Services SLA	Services to be included during guarantee period	SLA terms need separate detailed discussion. Further, we shall try our level best to adhere to the services timeline during warranty period but any penalty shall not be applicable	Detailed SLA terms can be finalised later.
76	Annx, 18.1 Support Services SLA	2. Vendor to share Spare parts cost for RTU which will be valid for next 10 years.	The prices shall be fixed for Rate Contract period only	Agreed.
77	Annx, 18.1 Support Services SLA	3. Vendor need to provide life cycle support and supplies to ensure necessary support in terms of services and spares for next 15 years from date of Purchase Order. Vendor shall provide expected life of IEDs in writing.	We shall ensure availability of originally supplied or functionally equivalent spares (as applicable) on chargeable basis beyond warranty period	Agreed.
78	Corrigendum No. – 1 Page 2 Point No: 6	Services of RTU Panel, Communication and Other Supplied System (Supply & services for communication cables required, within scope of BA)	Kindly provide communication cable length.	Bidder can get these through site survey.
79	Corrigendum No. – 1 Page 2 Point No: 7	Integration services for IEDs (free issue) and RTU including communication connectivity from IED to RTU panel as well as SCADA integration at Control Centre.	Kindly provide details of work for IED integration.	Details are provided in Tender document.
80	Corrigendum No. – 1 Page 2 Point No: 8	Mandatory Spares	In point number 8-16. In that you have asked individual modules as well as RTU Rack. Kindly give clarity for that.	The mandatory spares shall be supplied in accordance with the applicable RTU type.
81	Specifications for Automation Equipment Point No: 4.18 Cybersecurity	g. In addition to above mentioned Standards, Bidder to ensure that all the product own and sub-vendor product offered are tested at CPRI Lab for cyber security as per the Guidelines of MoP Order No.25-L7 /6/2018-PG dated 2nd July, 2020.	Kindly provide who will bear CPRI lab charges.	CPRI charges shall be in bidder's scope.

82	Page 18 of 38 Clause-4.18	<p><b>Cyber Security</b> (f) RTU shall be NERC-CIP/NIST 7628, IEC 62351, IEC 62443 and IEEE 1686</p>	<p>It Should be read as :</p> <p><b>Cyber Security</b> (f) RTU shall be NERC-CIP/NIST 7628, IEC 62351, IEC 62443-4-2 and IEEE 1686</p> <p>The IEC 62443 standard is developed to secure industrial automation and control systems (IACS). The standard is divided into different sections and describes both technical and process-related aspects of automation and control systems for cybersecurity.</p> <p>The IEC 62443 covers multiple layers of security controls, whereas securing components is a critical layer in this strategy. Even if higher-level security measures</p>	<p>Noted. Please comply with the tender specifications.</p>
83	Page 23 of 38 Clause-4.37	<p><b>Cyber Security Audit</b> (f) RTU shall be NERC-CIP/NIST 7628, IEC 62351, IEC 62443 and IEEE 1686</p>	<p>To confirm the standards of Cyber Security in RTUs, Cyber Security compliance certificate/ document by manufacturer international agencies like KEMA/TuV is required. Compliances as per MoP and CEA is also required Refer attached Annexure A</p>	<p>Noted. Please comply with the tender specifications.</p>
84	Page 23 of 38 Clause-4.38	<p><b>Surge Protection Devices</b> Type 3 Pluggable Surge Protection Device in accordance with IEC 61643 with KEMA &amp; UL approval must be installed at the incoming power supply of RTU.</p>	<p>It Should be read as :</p> <p>Surge Protection Devices Type 2 Pluggable Surge protection devices shall be installed in the incoming power supply of RTU to provide adequate protection against current and voltage transients. These protection devices shall be in compliance with IEC 62305-4:2006, IEC 62305-1:2006 and VDE 0100-534 for following surges: a) Lightning Electromagnetic impulse and other High Surges (Class B): Between Requirement Ph &amp; N <math>I_{imp} \geq 25 \text{ kA}, 10/350 \mu\text{S}</math> for each phase N &amp; PE <math>I_{imp} \geq 100 \text{ kA}, 10/350 \mu\text{S}</math> <math>I_{imp}</math>= Value of Lightning Impulse Current a) Low Voltage Surges (Class C) Between Requirement R, Y, B &amp; N <math>I_n \geq 10 \text{ kA}, 8/20 \mu\text{S}</math> for each phase N &amp; PE <math>I_n \geq 20 \text{ kA}, 8/20 \mu\text{S}</math> <math>I_n</math>= Value of Nominal Discharge Current. For SPD, specific standard for testing is IEC 61643-11 with KEMA &amp; UL approval and proper selection and application of SPD the standard is IEC 61643-12.</p> <p>Type-3 Pluggabe Surge Protection Device is used for equipments only whereas Type-2 SPDs is used at the Incoming side of Equipment and Type-3 SPDs is used at output side of Equipment such as RS485, Profibus and RJ45. Detailed specification of SPDs with respect to its ratings is missing from specification , also attached specification of Power grid for reference. Refer attached Surge protection device specification of Power Grid</p>	<p>Noted. Same will used as specification for Surge Protection devices.</p>

85	Page 23 of 38 Clause-4.39	<p><b><u>DC-DC Converter (48Vdc to 48Vdc)</u></b>  DC-DC Industrial DIN rail converter; Input 34-67 Vdc; Single Output 48Vdc at 5A</p>	<p>It should be read as :</p> <p>DC-DC Converter (48Vdc to 48Vdc)  DC-DC Industrial DIN rail converter; Input 34-67 Vdc; Single Output 48Vdc at 5A with below parameters</p> <ul style="list-style-type: none"> <li>•Input voltage range: 48 V DC -40 % - +20 %</li> <li>•Mains buffering time: typ. 17 ms (48 V DC)</li> <li>•Nominal output voltage: 48 V DC</li> <li>•Nominal output current (IN): 5 A</li> <li>•Static Boost (IStat.Boost): 6.25 A</li> <li>•Dynamic Boost (IDyn.Boost): 10 A (5 s)</li> <li>•Selective Fuse Breaking (ISFB): 30 A (15 ms)</li> <li>•Ambient temperature (operation): -25 °C - 70 °C (&gt; 60 °C Derating: 2,5 %/K)</li> </ul> <p>Comprehensive signaling: Analog signal, digital signal, relay contact, LED bar graph</p> <p>DC-DC converter should have front LED indication for health, Boost etc. it should also have remote monitoring feature. It should be certified with 3rd party international agecny like UL, DNV, CSA.</p> <p>Detailed description &amp; Technical specification of DC-DC converter is missing from technical specification. Certification and standards are also missing from the specification.</p>	<p>Noted.  Please comply with the tender specifications.</p>
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86	General	Terminal Blocks	<p>It should be read as :</p> <p>Terminal Blocks (TBs)  The terminal block should be designed as per IEC 60947-7-1. Terminal block shall be having provision for disconnection (isolation), with full-depth insulating barriers made from moulded self-extinguishing material polyamide 6.6 V0 class according to UL 94 classification. Terminal blocks shall be appropriately sized and rated for the electrical capacity of the circuit and wire used. No more than two wires shall be connected to any terminal. Terminal block shall be Push-in type allowing wire termination without any tool, a pusher type actuator shall be used to release the wire. Required number of TB shall be provided for the common shield termination of each cable.</p> <p>All terminal block shall be suitably arranged for easy identification of its usage such as CT circuit, PT circuit, analog input, status input, control output, auxiliary power supply circuit, communication signal etc. TB for CT circuit shall have feature for automatic CT shorting facility (on CT side) and disconnection (from load side) to facilitate testing by current injection. Similarly TBs for PT circuit shall have feature of disconnection to facilitate voltage injection for testing.</p> <p>Detailed description of Terminal Block is missing from Technical Specification.</p> <p>Terminal block is the smallest but main component of any Electrical/RTU/FRTU panel where all the cable terminates whether cable is coming from field or from any equipment. Terminal blocks are mandatory in panel irrespective of cable type i.e Control cable or Power cable.</p> <p>Earlier Screw type terminal blocks are used which with some O&amp;M activity got damaged (due to improper tool usage). Now with Push-in Type</p>	<p>Noted.  Please comply with the tender specifications.</p>
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**Annexure-I**

<b>Tentative PSS Location</b>			
<b>S.No.</b>	<b>Circle</b>	<b>Division</b>	<b>PSS Name</b>
1	Bhanjanagar	BOED	Charichak
2	Bhanjanagar	BOED	Janapank
3	Bhanjanagar	BNED	Bhanjanagar
4	Bhanjanagar	BNED	K. B. Pur
5	Bhanjanagar	BNED	Sorada
6	Bhanjanagar	BNED	Tilisingi
7	Bhanjanagar	PED	Chakapada
8	Bhanjanagar	PED	Kalinga
9	Bhanjanagar	PED	Kotagada
10	Bhanjanagar	PED	Sankarakhola
11	Bhanjanagar	PED	Tikabali
12	Bhanjanagar	PED	Tumudibandha
13	Berhampur	GNED	KANHEIPUR
14	Rayagada	RED	DANGA SARADA
15	Rayagada	RED	HATA MUNIGUDA
16	Rayagada	RED	KUMAR DHAMUNI
17	Rayagada	RED	MITS MEGA FOOD PARK
18	Rayagada	RED	NUAPADA
19	Rayagada	RED	SORISAPADAR
20	Rayagada	RED	THERUBALI
21	Rayagada	GED	BIKRAMPUR
22	Rayagada	GED	GUMUDA
23	Rayagada	GED	MINAJHOLA
24	Rayagada	GED	RAMANAGUDA
25	Rayagada	GED	UKKUMBA
26	Rayagada	PKED	BRAHMANIGAM
27	Rayagada	PKED	CHHELIGADA
28	Rayagada	PKED	GARABANDHA
29	Rayagada	PKED	GUMMA
30	Rayagada	PKED	MOHANA
31	Rayagada	PKED	RAIGADA

32	Rayagada	PKED	UPALADA
33	Jeypore	JED	B.SINGPUR
34	Jeypore	JED	BAIPARIGUDA
35	Jeypore	JED	DANGAGUDA
36	Jeypore	JED	KUNDRA
37	Jeypore	JED	KUSUMI
38	Jeypore	KED	ANALA BADI
39	Jeypore	KED	BANDHUGAON
40	Jeypore	KED	BILEIGUDA
41	Jeypore	KED	DASMANTPUR
42	Jeypore	KED	KAKRIGUMA
43	Jeypore	KED	KOLAB NAGAR
44	Jeypore	KED	NARAYANAPATNA
45	Jeypore	KED	POTTANGI
46	Jeypore	MED	Chitrakonda
47	Jeypore	MED	K.M.GUMMA
48	Jeypore	MED	KHAIRAPUT
49	Jeypore	MED	KORUKONDA
50	Jeypore	MED	MV.79
51	Jeypore	MED	PANDRIPANI
52	Jeypore	NED	DABUGAON
53	Jeypore	NED	JHARIGAM
54	Jeypore	NED	KOSAGUMUDA
55	Jeypore	NED	NANDAHANDI
56	Jeypore	NED	PAPADAHANDI
57	Jeypore	NED	TANDAGUDA
58	Jeypore	NED	TENTULIKHUNTI
59	Berhampur	GNED	Humma