

TPCODL

TP Central Odisha Distribution Limited

TPNODL

TP Northern Odisha Distribution Limited

TPSODL

TP Southern Odisha Distribution Limited

TPWODL

TP Western Odisha Distribution Limited

CENTRALIZED CONTRACTS GROUP**NIT No.: TPCODL / CCG / 2024-25 / 1000002006****Corrigendum- I****NIT No.: TPCODL / CCG / 2024-25 / 1000002365****Rate Contract - Supply of Single-Phase Smart Meter (5-30 Amp) with Boxes for Tata Power Odisha DISCOMs****Dated 07th April 2025****Following changes in tender document is made;****1.3 Calendar of Events (Page No. 6)**

(b)	Date by which Interested and Eligible Bidder to pay Tender Fee and confirm participation as mentioned in "Procedure to Participate in Tender"	08-04-2025
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Pre-bid response as attached below;

All other terms and conditions of the above tender shall remain unaltered.

Yours faithfully,**-sd-****HoD - Contracts (TPCODL) & CCG**

Format for Pre-Bid Queries				
Tender No: TPCODL / CCG / 2024-25 / 1000002365				
Tender Description: Rate Contract - Supply of Single Phase Smart Meter (5-30 Amp) with Boxes for Tata Power Odisha Discoms				
Sr. No.	Detailed Reference to Tata Power Technical Document. Please specify Document No / Clause No / Page No	Description as per Bid Document	Remarks - Query / Clarification	Tata Power Response
1	2	3	4	5
1	4.0 GENERAL TECHNICAL REQUIREMENTS:	4.04 Reference Conditions for testing the performance of the meter Vref = 230 V Frequency = 50Hz Temperature = 27 0C is mentioned in clause 1 (Scope) - 230V	The offered meterv will have Vref:240V(complies with 230V)	Refer Annex-A
2		4.11 Rated Impulse withstand voltage 10kV (shall be applied ten times with one polarity and then repeated with the other polarity.)	As per Annexure -A, we believe limit is now 6KV	Refer Annex-A
3		4.27 Minimum Internal diameter of the terminal holes Depth of the terminal holes 5.5 mm (minimum) 22 +1 mm	As per Annexure -A, we believe depth as per IS is acceptable	Refer Annex-A
4		4.30 Security feature mid night data CKWh, CKVAh, MD KW(Current-Rising), MD KVA (Current-Rising), TOD KWH(both off peak and peak) and TOD KVAh (both off peak and peak)	MD KW (current - Rising), MD KVA (Current-Rising) - Rising Demand by definition applicable for running DIP only. It can not be provided in midnight snaps.	mid night data CKWh, CKVAh, MD KW(Current), MD KVA (Current), TOD KWH(both off peak and peak) and TOD KVAh (both off peak and peak)
5		4.33 Communication module of meter for AMI All the NICs should be same & compatible with all types of meters (single phase/PPWC/LTCT/HT) & should be hot swappable.	As per Annexure-A, we believe that comment is applicable for repeat supplier.- "Bidder to ensure NIC card compatibility with already supplied meters to Discoms of same make."	Refer Annex-A
6	4.1 DISCONNECTOR SWITCH	Double pole relay for phase & neutral	We request you to accept the offered meter with single pole relay as it will not affect the meter functionality.	As Per Tender
7	4.2.1 NIC MODULE DETAILS & INTEGRATION FOR 4G BASED COMMUNICATION	4.2.2.12 Bidders to ensure NIC card compatibility with existing meters as well.	As per Annexure-A, we believe that comment is applicable for repeat supplier.- "Bidder to ensure NIC card compatibility with already supplied meters to Discoms of same make."	Refer Annex-A
8	4.3 a) Communication capabilities and software feasibilities	4.3.3 It shall be possible to reconfigure the meters for RTC, TOD slots reprogramming, DIP (Demand Integration period), billing date, display parameters etc. billing should be done whenever any above mentioned attribute is changed except RTC. change should be recorded as upgrade event. 4.3.23 Following parameters may be updated multiple times during life cycle of meters over the air: Accordingly Display parameters shall be updated remotely.	Display parameters (other than specified) can be configured through FoTA. Hope this is acceptable. However display will be configured automatically as per specs on mode change or TOD changes.	This shall be shared during detailed engineering . The display parameters shall be changed in programming of events such as Metering mode change/MD reset etc. Billing shall be done. If only Display is changed without making any other change in metering mode, no billing to be done.
9		4.3.4 Optical Communication port shall be available for communication. Communication ports shall not be affected by any type of injection / unauthenticated signals and having proper sealing arrangement. 4.3.16 Communication of the meter at optical port / OTA (WAN) should be as per IS 15959 (Part- 2):2016. The optical port should be with proper locking arrangement.	As meter will be supplied with fit-in meter box, sealing arrangement is available at meter box.	specification to be complied
10		4.3.18 Meter once powered up with NIC card should be self-detected and its basic name plate details & current readings are transferred to HES.	First breath on communication establishment pushed to HES and then HES will query for required information.	specification to be complied
11	4.4.1 Magnetic Field:	4.4.1 c) Permanent Magnet: Immune up to 0.5T and Event logging >0.5T.	As per Annexure-A, we believe it is as per IS13779:2020	Refer Annex-A
12		4.4.2 Electrostatic Discharge (ESD) Meter shall log the event into memory as 'ESD' with date & time stamp for any ESD greater than 35 kV with snap shot the event logging threshold values as per table no. 1 in 4.6.	The offered Meter will be immune but logging is not provided.	specification to be complied

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13	4.4.2 Electrostatic Discharge (ESD) TABLE NO.1	4.4.4 Meter inside meter box should be immune to high / low frequency Jammer devices. Meter shall log the event in its memory as 'JAMMER' with date and time stamp, the threshold values as per table no. 1 in 4.6.	The offered Meter will be immune but logging is not provided.	specification to be complied
14		4.4.5 The meter inside meter box should be immune or log the tamper on application of any other higher magnetic field of any frequency waves, micro waves like magnetron etc. the threshold values as per table no. 1 in 4.6.	As per Annexure-A, we believe the clause is deleted	Refer Annex-A
15	4.6 ABNORMAL AND TAMPER CONDITIONS:	4.6.7 All tamper/event logging thresholds values shall be configurable remotely over the air (OTA).	All tamper/event logging thresholds values will be configurable through FoTA is available.	specification to be complied
16		Table 1 - Magnet logic - occurrence & restoration at fixed threshold	We assume that the Tamper threshold, Persistence time and compartment size should be as per Annexure D tamper table at page 76 - 78	This shall be shared during detailed engineering .
17	4.7 EVENT COMPARTMENTS	4.7.1 The size of the event compartments should be such that, all above events (in table no.1 and other required events defined in various clauses of this documents) are accommodated in the assigned event category compartment i.e. if in case of voltage compartment assigned to 4 number of events, then the minimum size of this compartment should be such that, it should accommodate sum of all maximum number of events as marked above table no. 1. 4.7.2 Transaction events compartment size shall be minimum 100 events.	We assume that the Tamper threshold, Persistence time and compartment size should be as per Annexure D tamper table at page 76 - 78	This shall be shared during detailed engineering .
18	5.1 METER BODY	5.1.1 Meter body shall be made of unbreakable, high grade, fire retardant reinforced Insulating material (protective Class II) with FVo Fire Retardant, self-extinguishing, UV stabilize, recyclable (first use) and Anti oxidation properties.	In the offered meter, meter body will be FV2 complied, kindly accept the same	specification to be complied
19		5.1.3 Meter base shall be opaque with polycarbonate LEXAN 500R or equivalent (i.e chart of Lexan 500R compared with the alternative material) on prior approval from the TP(C/N/S/W)ODL. (the bidders should submit material data sheet in technical bid)	The Meter base and cover will be opaque in nature and will be of High grade Polycarbonate material.	As Per Tender
20		5.1.4 Meter cover shall be transparent with polycarbonate LEXAN 143R / 943A or equivalent on prior approval from the TP(C/N/S/W)ODL. (the bidders should submit material data sheet in technical bid)	The Meter base and cover will be opaque in nature and will be of High grade Polycarbonate material.	As Per Tender
21		5.1.7 Unidirectional screws with sealing arrangement through the screw (upside down)to be used on meter covers where ever required.	The offered Meter is an screwless design as the meter base and cover are seamlessly chemically welded.	specification to be complied
22	5.2 TERMINALS, TERMINAL BLOCK	5.2.3 Terminal block and terminal cover shall be of a material which complies with the requirements of IS11731 (part 1) method FH1	The Terminal block will be FV0 complied.	specification to be complied
23		5.2.6 The Size of the screw shall be 6mm dia. The material and plating details of terminals screw shall be provided. MS screws shall not be accepted. To get the desired temperature rise & avoid hot spots the design of the each terminal screw shall be Allen head screw & shall be operated with Allen key. Nickle plated brass screws to be provided.	The offered meter will be provided with SS Allen head screw with 6 mm dia, kindly accept the same	specification to be complied

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24	5.6 LOAD SURVEY (FOR PRE-PAID, POST-PAID & NET METER MODE):	NIC serial number shall be recorded and communicated for all profiles of data. Meter shall be capable of recording daily Energy and Demand 00:00 to 24:00 Hrs kWh and kW, kVAh and kVA in BCS for 35 days. Midnight energy value of cumulative kWh, KVAh along with Current (Rising Demand) KW and Current (Rising Demand) KVA along with daily consumption kWh should be available in meter memory for last 35 days.	1) As per parameter list shared on page no. 67-78, NIC sr. no. will be provided with Name plate details only, however it can be available in all report through BCS & HES. 2) Can you please clarify the difference between 2 profile mentioned - Daily snap and midnight snap?	This shall be shared during detailed engineering
25	5.7 INSTANTANEOUS PARAMETERS:	Instantaneous profile	We are considering the parameter list mentioned on Pg no. 67-78, against Instantaneous profile. Meter temperature in place of terminal temp. is provided, as no sensor on TB is required.	This shall be shared during detailed engineering
26	5.7.4 DISPLAY UNITS	The LCD display shall have a wide viewing angle of 120 degree.	Display type: STN, Y-G Viewing Direction: 6 O' Clock Viewing angle: -60 deg to +60deg (Up-Down & Left-Right)	specification to be complied
27	5.8.2 Output Device:	Load Switch LED indicator-The meter shall be provided with suitable LED indication for condition of load switch (Close / open). LED should show when load switch is open. (Red Colour LED) 5. Phase Indication – Power on indication shall be provided as icon on the LCD.	Suitable annunciator on LCD is available for Load switch. LCD backlight will glow during power on condition	Refer Annex-A
28	5.8.3 NAME PLATE AND MARKING	The base color of Name plate shall be blue (as of TP(C/N/S/W) ODL logo)Indelibly and distinctly marked with all essential particulars	Name plate information is laser printed on Meter cover and meter cover will be opaque in nature.	specification to be complied
29	7.2 METER BOX	Meter box shall be of polycarbonate transparent type (Degree of protection-IP55) Cable entry to meter box should be from side and gland should be such aligned that cable should enter meter box in upward direction to ensure that in case of rain water does not enter meter box by flowing along the cable. Box should have optical port groove in line with meter optical port slot. There should be locking provision available for meter optical cord. The arrangement should be such that meter can be read through optical cord without opening the meters box. Meter Should be pre-fitted in meter box when supplied.	Offered Meter box is complied with IP55, with meter box top cover transparent and meter base will be opaque.	Noted
30	Annexure-A	Annexure-A	Mode of operation of load switch profile (Pg 72) - other tamper profile parameters will be shared, in place of billing profile. Programmable parameters (pg 74) - Utility specific programmable parameters support will be provided by meter manufacturer own method i.e. FOTA	specification to be complied
31	Tender_Smart Meter/ 4.0 / 33 of 321	4.37 Meter cover and body should be continuous seamless welded only through chemical bonding.	Please accept ultrasonic welding as an alternative option to chemical welding. Ultrasonic welding, unlike chemical welding, is suitable for our meter's continuous (non-snap-fit) design. For this type of design, we utilize ultrasonic welding which is a standard industry practice, and unsuitable for chemical welding	specification to be complied
32	Tender_Smart Meter / 5.8.3 / 56 of 321	Name plate and Marking: iv. Serial number (Meter serial number shall be laser printed on name plate instead of sticker). However the following shall be printed in bar code on the meter nameplate (shall be laser printed on name plate instead of sticker). All data shall be laser printed on meter along with Sr. NO and date of manufacturing. No sticker to be used to avoid loss of data in event of fire.	We propose using indelible pad printing for the nameplate details as an alternative. We request your acceptance of this method.	Noted

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33	Tender_Smart Meter / 5.8.3 / 56 of 321	Bidder should ensure that each NIC provided in meter is having laser printed Sr. No., MFGdate, 'Property of TP(C/N/S/W)ODL' marking, PO / RO no.& date (same as that of meter PO / RO)	Kindly accept details on NIC with indelible pad printing as an alternative.	Noted
34	Pre-Qualification Criteria, Cl. No. 2.0(2), Performance	Atleast two (02) Performance Certificate by any DISCOMs/ PSUs/ Reputed companies is to be submitted. The work against these issued certificates should be completed in 7 years from the date of bid submission. In case the bidder has got previous association with TP DISCOMs for supply of similar product, performance feedback of the same.	As procurement of smart meters by Indian Power Distribution Utilities has been taken up in the recent past years so this clause may please be amended to the extent as under : "Atleast one (01) Performance Certificate by any DISCOMs/ PSUs/ Reputed companies is to be submitted. The work against these issued certificates should be completed in 7 years from the date of bid submission. In case the bidder has got previous association with TP DISCOMs for supply of similar product, performance feedback of the same".	As Per Tender
35	Pre-Qualification Criteria, Cl. No. 2.0(B)(1), Commercial Capability	The bidder should have average annual turnover of at least Rs. 200 Cr. for last 3 Financial Year (FY).	The FY 2024-25 as recently been closed and balance sheet is yet to be finalized, so for the purpose of average annunal tuover, the last 3 FY shall considered 2021-22, 2022-23 & 2023-24. Also the average tuover of Rs. 200 Cr. is very high so it is requested to consider average annunal tuover of atleast Rs. 150 Cr. for the last 3 years.	As per Tender
36	Date of bid submission	11-04-2025	It is requested to extend the date of submission of the bid and samples by 2-3 weeks as the time given is very short.	As per Tender
37	2.0 Pre- Qualification Criteria B- Financial Pre- Qualification Requirements 1. Commercial Capability	The bidder should have Average Annual turnover of at least Rs. 200 Cr. for last 3 Financial Year (FY). Qualification Requirement of Financial Turnover for MSME registered in the State of Odisha shall be reduced to 20% of the existing criteria	We shall consider the Financials for FY 24-25 (Unaudited, CA Certified), 23-24 and 22-23.	As per Tender
38		2.0.- B.1 Financial Pre-Qualification Requirements – “	As per RDSS tenders & In SBD IV also Bidder can use their parent/affiliate company's credential to meet the qualification criteria. We are also executing Smart metering project in India under Make in India & meeting the utility requirements.	As per Tender
39		The bidder should have Average Annual turnover of at least Rs. 200 Cr. for last 3 Financial Year (FY).”	We humbly request to allow us to participate in the above bid using our Parent company credential for financial qualification.	As per Tender
40		13.1 Special Conditions of Contract – “In case bidder is not able to integrate their Meter with existing HES within 4 (four) months, DISCOM reserve's the right to reduce the Contract Value (up to Zero) and same can be reallocated to other performing bidders.	We hereby confirm that our smart meter will be as per IS 15959 part 2 & IS 16444 part 1. For that HES integration we require the support from HES provider also.	specification to be complied
41		This specification covers the technical requirements of design, manufacturing, testing & integration with Network Integration Card (NIC) for communication over 4G for communication network provider, at meter manufacturer's works, packing, forwarding, supply and unloading at store, of Single Phase Two Wire, 230V, 5-30 A static smart energy meters of accuracy class 1.0 (here after referred as meters) complete with all accessories and meter box for efficient and trouble-free operation.	We will offer meter with Vref as 240V which is as per standard. Kindly revise the clause.	Refer Annex-A
42		As per clause no. 1.2 (b) of IS 16444 PART- 1 Meter should have provision of communication module compatible with both the variant mentioned in IS 16444 PART-1. This module should be able to get connected to the WAN network of service provider [4G of TP(C/N/S/W)ODL]. Meter should be able to provide required power supply to NIC provided by communication provider, if separately required, recommended / finalized by TP(C/N/S/W)ODL. All the NICs should be same & compatible with all types of meters (single phase/PPWC/LTCT/HT) & should be hot swappable.	All the NICs will be same & compatible with all types of our meters (single phase/PPWC/LTCT/HT) & is hot swappable. Kindly revise the clause.	Refer Annex-A
43		Meter cover and body should be continuous seamless welded only through chemical bonding.	Please accept meter with ultrasonically welding.	specification to be complied

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44		Double pole relay for phase & neutral	Single pole relay is also widely used in smart meter. We request you to accept single pole relay.	specification to be complied
45		Unidirectional screws with sealing arrangement through the screw (upside down)to be used on meter covers where ever required.	Screw arrangement is tightened from top. Kindly revise the clause.	specification to be complied
46		The terminals and connections shall be suitable to carry up to 120 % of I _{max} continuously. The size, design & material of Bus-bar / Shunt / Terminal shall be with suitable cross sectional area, so that temperature rise at the terminal block will not be more than 35°C above ambient temperature of 45°C at 120% of I _{max} loading for 6 hours continuous. This test shall be repeated at CPRI / ERDA on any meter per every 25000 meters or whenever required, without any cost implications towards TP(C/N/S/W)ODL. It shall also be done on tender sample & on pre- manufacturing sample.	Please accept temperature rise test as per IS 16444 Part 1.	specification to be complied
47		The Size of the screw shall be 6mm dia. The material and plating details of terminals screw shall be provided. MS screws shall not be accepted. To get the desired temperature rise & avoid hot spots the design of the each terminal screw shall be Allen head screw & shall be operated with Allen key. Nickle plated brass screws to be provided.	M4 cheese head screw is widely used for 5-30A meters. Kindly revise the clause.	Noted
48		Bidder shall provide Routine test report (hard copy A5 size) along with each meter inside the box as well as soft copy.	Kindly accept routine test report in soft copy.	specification to be complied
50		Load survey data should be at least with 3 decimal place	Kindly accept load survey parameters with below resolutions.	specification to be complied
51			1. Voltage - 1 decimal	
52			2. Current - 2 decimal	
53			3. Energy - 2 decimal	
54			4. Temperature - without decimal	
55		Meter serial number and NIC serial number shall be recorded and communicated for all profiles of data. Both Export-Import mode, below mentioned parameters should be for both	Please accept the ollowing parameters to be calculated at BCS/HES end.	specification to be complied
56		Export and Import.	1) Consumption (Reading date, Current Month &12 History, time zone register wise) kWh and kVAh	specification to be complied
57		1) Maximum Demand (Reset date, Current Month &12 History, time zone register wise)	2) Average Power factor (12 History)	specification to be complied
58		a) MD - Abs Active Load/kW		specification to be complied
59		b) MD - Abs Apparent		specification to be complied
60		2) Billing Dates (12 History)		specification to be complied
61		3) Cumulative Energy (Reading date Current Month&12 History, time zone register wise) kWh and kVAh		specification to be complied
62		4) Consumption (Reading date, Current Month &12 History, time zone register wise) kWh and kVAh		specification to be complied
63		5) Average Power factor (12 History)		specification to be complied
64		6) Mode of operation of dis-connector switch		specification to be complied
65		7) Monthly power ON/OFF hours		specification to be complied
66		Last five modes with date & time of switching with cumulative energy parameters of kWh,TOD1 kWh, TOD2 kWh, kVAh, TOD1 kVAh, TOD2 KVAh		specification to be complied
67		There should be minimum 20 mm spacing between meter and meter box from bottom sides and 10 mm from all other sides. From front it should be minimum 10 mm and behind it should be minimum 5 MM.	Please accept meter box with minimum 10 mm spacing between meter and box on all other sides. From terminal block it will be minimum 50mm.	specification to be complied
68		Configurable Parameter		
69		Display Parameter		

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70		LS Capture Object	Display, load survey parameters will be configured by FOTA	The data sheet shall be shared during detailed engineering
71		Display Parameters Auto Scroll		
72		Load control parameters		
73		Single Action Schedule for schedule for push		
74		Single Action Schedule for Daily data push		
75		Single Action Schedule for billing data push		
76	9.5 (GCC)	The vendor shall also dispose off the e-waste generated at the end of the product life cycle at its own costs and risk as per the MoEF guidelines/ Orders-	Please delete this clause	Specification to be complied
77	13.3 (GCC)	If during the Warranty/ Guarantee period some parts of the supplies are replaced owing to the defects/ damages under the Warranty, the Warranty period for such replaced parts shall be until the expiry of twelve months from the date of such replacement or renewal or until the end of original Guarantee period, whichever is later.	Please amend as the Warranty period for such replaced parts shall be until the end of original Guarantee period	Specification to be complied
78	8 (GCC)	SECURITY CUM PERFORMANCE DEPOSIT: 5% of the RC value in case of Rate Contract. This shall remain valid till the Guarantee period plus one month	Please amended as 1% of the RC value at time of contract in case of Rate Contract & 4 % at time of individual RO	As Per Tender
79	14 (GCC)	LIQUIDATED DAMAGES For delay of each week and part thereof from the delivery schedule specified in the contract, 1% of contract value corresponding to undelivered quantity, provided full quantity is supplied within 130% of the original contract time. If full contractual quantity is not delivered within 130% of contract time for delivery, TPSODL has the right to levy LD on the entire contract value, subject to a maximum of 10% of the total contract value.	Please amended as For delay of each week and part thereof from the delivery schedule specified in the contract, 0.5 % of contract value corresponding to undelivered quantity, provided full quantity is supplied within 130% of the original contract time. If full contractual quantity is not delivered within 130% of contract time for delivery, TPSODL has the right to levy LD on the entire contract value, subject to a maximum of 10% of the total contract value.	As Per Tender
80	4.3 (Technical Specification)	Bidder to provide any support on a later stage on the request of TP(C/N/S/W)ODL without any cost implication till the useful life of meter which is considered as 10 years from the date of supply	Please get amended all type of support on FOC basis shall be limited to up to meter guarantee period (5/5.5 year) instead of up to product life cycle (10 year).	Specification to be complied
81	4.3.8 (Technical Specification)	Bidder shall provide the communication protocol /APIs for communication with meter through local (MRI) /Mobile app/BCS remote (AMI) as and when required by TP(C/N/S/W)ODL free of cost during life time of meter.		
82	4.3.15 (Technical Specification)	The required firmware and any required support for integration with HES shall be provided free of cost till the useful life of the meter		
83	4.30 (Technical Specification)	Security feature: Facility for Upgradation / Modification of Firmware shall be provided Following parameters shall be updated multiple times during life cycle of meters over the air : TOD Update Post Paid to Prepaid mode and vice versa Import mode to export Mode and vice versa. Accordingly Display parameters shall be updated TOU shall be updated in meter.	Please get amended all type of Facility for Upgradation / Modification of Firmware shall be limited to up to meter guarantee period (5/5.5 year) instead of up to product life cycle (10 year).	specification to be complied
84	5.3 Safety Performance Evaluation	Safety Performance Evaluation :	We understand that Safety Performance related penalties are not applicable on us as our scope is limited to supply of meter only	specification to be complied
85		Bidder should also provide base computer software (BCS) for viewing the data downloaded through HES / MRI / laptop / HHU in separate PC/laptop. Android based or windows based HHU shall be preferred.	We understand that supply of / MRI / laptop / HHU in separate PC/laptop is not in bidders scope	Refer Annex-A
86		Reverse Auction shall be as per the below approach: No of bidders allowed to participate in RA process shall be: Total No of bidders on whom tender would be split PLUS 2 more bidders CCG reserves the right to split the order quantity wise / Line item wise among 4 Nos Bidders	We understand that only L1-L6 bidders will be allow to participate in Reverse Auction	Yes

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87	1. Scope	This specification covers the technical requirements of design, manufacturing, testing & integration with Network Integration Card (NIC) for communication over 4G for communication network provider, at meter manufacturer's works, packing, forwarding, supply and unloading at store, of Single Phase Two Wire, 230V, 5-30 A static smart energy meters of accuracy class 1.0 (here after referred as meters) complete with all accessories and meter box for efficient and trouble-free operation	Please accept voltage rating with 240 V, 5-30 A, Cl-1.0 with 4G cellular WAN technology as per IS 16444 Part 1	Refer Annex-A
88	4.23 Self-Diagnostic feature	The meter shall have indications on meter display, for anomaly/unsatisfactory / non-functioning of (i) Real Time Clock (ii) RTC battery (iii) Non Volatile Memory (iv) NIC Status of NIC (installed / discovered /normal) / Signal Strength	Please accept meter indications on meter display will be like (i) Real Time Clock (ii) RTC battery (iii) NVM (iv) NIC Signal strength will be display in the meter in Test mode as RSSI. NIC status will be shown in the meter in Test mode as error – 00 to 11	Refer Annex-A
89	4.25 Alternate mode of supply to the meters	In case of power failure, reading / data should be retrieved with the help of battery or other power source.	In case of power failure, reading / data should be retrieved with the help of battery through optical communication.	specification to be complied
90	4.27 Minimum Internal diameter of the terminal holes Depth of the terminal holes	5.5 mm (minimum)22 +1 mm	Please accept depth of terminal holes - 17.5 mm ± 1 mm	Refer Annex-A
91	4.31 Software and communication compatibility	The bidder shall supply software required for local HHU & Remote (AMI) connectivity including required training to use the software free of cost as required by utility or HES / Communication service provider. If this software can be used in a device readily available in market and can connect to meter through optical port or other communication port without any security checks / or with MR securities which OEM will provide; then, OEM can provide only software, else the device on which this software will run is also to be provided along with technical specification of this device	Please accept the Android-based mobile application, which will be compatible with Android-based devices	Refer Annex-A
92	4.31 Software and communication compatibility	BCS, mobile application with all the features including meter reading, connection/disconnection, firmware update, ToD update, etc will be required.	Firmware upgradation will be done by HES only.	specification to be complied
93	4.33 Communication module of meter for AMI	All the NICs should be same & compatible with all types of meters (single phase/PPWC/LTCT/HT) & should be hot swappable	The single-phase meter NIC will be different from the three-phase NICs, and the single-phase NIC can be compatible with single-phase meters of the same make only.	Refer Annex-A
94	4.1 Disconnecter Switch	4. No. of poles - Double Pole relay for phase & neutral	Two relays will be provided—one for shunt and the other for CT—and they will work simultaneously	As per Tender
95	4.3 (a) Communication capabilities and software feasibilities	4.3.1 The meter shall have facilities for data transfer locally through Meter Reading Instrument (MRI)/Mobile app/BCS (Using optical port) and remotely by 4G with proper security via Plug in type NIC. Data transfer locally through optical port via MRI is desired along with data transfer through NIC card. The data downloaded in MRI / Hand Held Device shall be integrated to HES data base	Please accept the Android-based mobile application, which will be compatible with Android-based devices that will be download the meter via optical port.	Refer Annex-A
96	4.3 (a) Communication capabilities and software feasibilities	4.3.17 Communication NIC / network should be immune with any external Magnetic field / ESD/ Jammer/ HV voltage influence such that it shall not affect the normal overall functionality	Please accept as per CBIP-325	Refer Annex-A
97	4.3.8	The bidder should provide DLMS compliance as per conformance test tool for Communication with the meter at Optical port and at HES.	Please share the test cases and procedures for performing the test on the HES for DLMS CTT. We conducts the compliance test using the optical port only.	specification to be complied

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98	4.4 b) IMMUNITY AGAINST EXTERNAL INFLUENCING SIGNALS (to be attained with meter box):	4.4.1 Magnetic Field and abnormal magnetic field 4.4.2 ESD 4.4.3 High Voltage and High Energy or Low Energy Impulse 4.4.4 JAMMER	Please accept as per CBIP-325.	Refer Annex-A
99	4.4.3 Electrostatic Discharge (ESD)	The shielding around the meter inside meter box, shall be such that it does not get affected by high Voltage and high energy or low energy impulse when comes in contact with meter from any side.	We will be provided a suitable arrangement as per design for the compliance of ESD test.	Refer Annex-A
100	4.5 (c) NEUTRAL DISTURBANCE & OTHER TAMPERS	4.5.4 Defraud Metering is not required if all the connections are intact & supply voltage is low. There is no external interference	During Neutral disturbance (ND) conditions, if the meter is powered on, it will record energy based on the actual electrical conditions as per measured its terminals. If the meter is in power-off (sleep) mode, it will record energy using rated voltage and unity power factor (UPF), proportional to the drawn current, and log an ND tamper event.	Refer Annex-A
101	4.6.3	Meter should have break to open design and cover open tamper snapshot should be with Kwh and Kvah reading. Meter should have a permanent indication in its display as well as logging of tamper in case of removal of top cover, even in power off condition.	As per IS 15959 Part 1, meter top cover open tamper is non rollover tamper that is logged with date and time with event ID.	specification to be complied
102	4.6.3 Abnormal Tamper conditions	The Cover Open tamper detection should be through heavy duty, sturdy micro switches such that it should not log false event on vibration or impact during handling or testing.	For the Cover Open tamper detection, We will provide Carbon Pad.	specification to be complied
103	Tamper Table No. 1	Neutral Disturbance = 0 Hr 01 Min 0 Sec (ND) Voltage > 145%of Vref, Current >10% Ib and Frequency <47 Hz OR Frequency > 53Hz OR DC voltage / signal/ pulse/ chopped signal injection / as per the conditions of Clause 4.5.4	Case 1: Voltage >145% of Vref & Current >10% of Ib Case 2: 47Hz > Frequency >53Hz Case 3: DC Voltage/signal/pulse/chopped signal injection. Case 4: Voltage <115V and earth load condition present & Current >10% of Ib.	specification to be complied
104	Tamper Table No. 1	Voltage <115% of Vref Current > 10% Ib AND Frequency > 47 Hz OR Frequency < 52 Hz	115V<Voltage <276V & both current(Ip & In) >10% Ib and Frequency >47Hz & Frequency <52 Hz	specification to be complied

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105	4.7.1 Event Compartment	The size of the event compartments should be such that, all above events (in table no.1 and other required events defined in various clauses of this documents) are accommodated in the assigned event category compartment i.e. if in case of voltage compartment assigned to 4 number of events, then the minimum size of this compartment should be such that, it should accommodate sum of all maximum number of events as marked above table no. 1	The event compartments as per DLMS IS 15959 Part 2	specification to be complied
106	5.1 Meter Body	5.1.3 Meter base shall be opaque with polycarbonate LEXAN 500R or equivalent (i.e chart of Lexan 500R compared with the alternative material) on prior approval from the TP(C/N/S/W)ODL. (the bidders should submit material data sheet in technical bid)	Please accept superior material like 503R, or equivalent for meter base also. Since the same material grade is also accepted for meter cover	Noted
107	5.1.4 Meter Body	Meter cover shall be transparent with polycarbonate LEXAN 143R / 943A or equivalent on prior approval from the TP(C/N/S/W)ODL. (the bidders should submit material data sheet in technical bid)	Meter top cover opaque and LCD Window transparent	Noted
108	5.1.7 Meter Body	Unidirectional screws with sealing arrangement through the screw (upside down)to be used on meter covers where ever required.	Screws will be tightened from top side with Sealing from top side	specification to be complied
109	5.1.8 Meter Body	The Meter body shall be such that the liquid or chemical shall not reach the electronic parts if liquid is injected from any side of meter body such as meter terminals, push button, display, NIC card casing Necessary protection and water tight sealing to be provided at terminals and Push buttons etc.	As per specification clause no. 4.16 Comply with IP 51 Protection against penetration of dust and water with IS 13779	specification to be complied
110	5.2.4 Terminals and Terminal Block	The terminal block shall be of opaque with polycarbonate LEXAN 500R or equivalent on prior approval from the TP(C/N/S/W)ODL. (the bidders should submit the relevant material data sheet in technical bid).	PBT 30% G.F. material will be provided which is passing the test given in ISO 75 for temperature of 180°C and pressure of 1.8 M Pa.	specification to be complied
111	5.2.6 TERMINALS, TERMINAL BLOCK	5.2.6 The Size of the screw shall be 6mm dia. The material and plating details of terminals screw shall be provided. MS screws shall not be accepted. To get the desired temperature rise & avoid hot spots the design of the each terminal screw shall be Allen head screw & shall be operated with Allen key. Nickle plated brass screws to be provided	Ni Plated Cheese head brass screws will be provided as the brass Allen screws head get damaged after several times tightening of the screw	Noted
112	5.3 TERMINAL COVER	5.3.3 The terminal cover shall be short: 25 mm length from bottom of terminal block in line with meter base	Please accept 20 mm extended type terminal cover.	Noted
113	5.6	LOAD SURVEY (FOR PRE-PAID, POST-PAID & NET METER MODE)	We will provide TP C/N/W/S ODL data models based on existing supplies that are already integrated with their respective HES	This shall be shared during detailed engineering'
114	5.7	Instantaneous Parameters	We will provide TP C/N/W/S ODL data models based on existing supplies that are already integrated with their respective HES	
115	5.7.1	General Information	We will provide TP C/N/W/S ODL data models based on existing supplies that are already integrated with their respective HES	
116	5.7.2	Billing Parameters	We will provide TP C/N/W/S ODL data models based on existing supplies that are already integrated with their respective HES	
117	5.7.3	TRANSACTIONS: All the changes in software of meter to be logged along with date & time stamp and readings. Meter should do billing if any billing related transaction is done.	We will provide TP C/N/W/S ODL data models based on existing supplies that are already integrated with their respective HES	
118	Clause No. 5.8.3 Page No.54	<u>NAME PLATE AND MARKING</u> Meters shall have a name plate clearly visible and effectively secured against removal. The name plate data should be laser printed. The base colour of Name plate shall be blue(as of TP(C/N/S/W)ODL logo)Indelibly and distinctly marked with all essential particulars as per relevant standards along with the following.	We request you to kindly accept printing details will be laser printed on meter top cover, because meter top cover will be opaque with viewing window.	noted

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119	Downloadable Parameters:-	6. Following annexures are added in this document a. Push data list – Annexure-A 1) Instant profile four times a day ie. 05:00am, 11:00am, 05:00pm, 11:00pm) 2) Daily Energy Profile every day at 03:00am 3) Monthly energy profile (as and when MD reset occurred) at 03:00am 4) Event flag once daily at 05:00am	We will provide TP C/N/W/S ODL data models based on existing supplies that are already integrated with their respective HES	This shall be shared during detailed engineering
120	Downloadable Parameters:-	e. All data should be in format ddmmyyyy	We will provide TP C/N/W/S ODL data models based on existing supplies that are already integrated with their respective HES	This shall be shared during detailed engineering
121	Annexure B	Name Plate Profile : 13 SIM Sl. No. 0.0.96.1.9.255 TP(C/N/S/W)ODL	We will provide TP C/N/W/S ODL data models based on existing supplies that are already integrated with their respective HES	This shall be shared during detailed engineering
122	Annexure C	Single phase Common Display list Inst. Power Factor (Lag/Lead)	In case of Lead power factor meter display of PF value with '-'	Noted
123	General Queries	Data models - Annexure - A (Push Data) Annexure - B (Profile Sheets) Annexure - C (Display Parameters) Annexure - D (Tamper Sheets)	We will provide as per TP C/N/W/S ODL data models from existing supplies, which are already integrated with their respective HES	Specification to be complied. Any deviation in component prior approval to be taken.
124	General Queries	Component Sheet	Latest component sheet will be share at the time of GTP submission.	Specification to be complied. Any deviation in component prior approval to be taken.
125	General Queries	Data models in this tender - Annexure - A (Push Data) Annexure - B (Profile Sheets) Annexure - C (Display Parameters) Annexure - D (Tamper Sheets)	There is a distinct and independent requirement of all 4 utilities, but in the tender specification common data models are given. Please add the separate data models based on the requirement of each utility in this tender. It is always making confusion to meter OEMs.	Specification to be complied. The data model sheet is for reference only
126	Annexure -A (Page 82)	Earthing bolt on meter box Unidirectional earthing bolt required on one side	Hex type earthing bolt will be provided.	Specification to be complied
127	(4) GENERAL TECHNICAL REQUIREMENTS: (4.33) Communication module of meter for AMI Page No. 33 of 317	All the NICs should be same & compatible with all types of meters (single phase / PPWC / LTCT / HT) & should be hot swappable.	We request you to kindly elaborate the requirement as the NIC card Form Factor is different for different Make Meters and Manufacturer specific. Kindly note that the plug-in module shall be field replaceable with same Make of Meter / same Type of Meter. We request you to kindly amend the clause accordingly.	It is prefered that NIC Card should be replace with same make of meter
128	(4.2.1) NIC MODULE DETAILS & INTEGRATION FOR 4G BASED COMMUNICATION Page No. 35 of 317	(4.2.1) Bidders to ensure NIC card compatibility with existing meters as well.		It is prefered that NIC Card should be replace with same make of meter
129	(4.1) DISCONNECTOR SWITCH Page No. 34 of 317	(6) Utilization Categories: UC2 or better	As per IS16444 (Part 1):2015 Standard the Category UC 1 is applicable to Smart Meters rated at maximum Current up to 100A. In support, we have enclosed a copy of BIS Amendment No. 2 to IS:16444 (Part 1) stating 'Category UC 1 is applicable to Smart Meters rated at maximum Current up to 100A'. We request you to kindly amend the clause.	UC1 is accepted

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130	(5.2.5) TERMINALS, TERMINAL BLOCK Page No. 45 of 321	The terminals and connections shall be suitable to carry up to 120 % of I _{max} continuously. The size, design & material of Bus-bar / Shunt / Terminal shall be with suitable cross sectional area, so that temperature rise at the terminal block will not be more than 35°C above ambient temperature of 45°C at 120% of I _{max} loading for 6 hours continuous. This test shall be repeated at CPRI / ERDA on any meter per every 25000 meters or whenever required, without any cost implications towards TP(C/N/S/W)ODL. It shall also be done on tender sample & on pre- manufacturing sample. The process for the same shall be: The energy meter shall be supplied at reference voltage with actual heating load of 120% of I _{max} on both phase & neutral circuits.	Kindly clarify whether this test has to conducted additionally on tender samples and report to be submitted along with sample Meters. Please clarify.	The test to be conducted at the time of factory inspection