

**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/24-25/1000000643 Dated. 29.04.2024****Corrigendum- I****NIT No. : TPCODL / CCG / 24-25 / 1000000643 Dated. 29.04.2024****Rate Contract - Supply of Three Phase HT Smart Energy Meters for Tata Power Odisha Discoms****Dated 20<sup>th</sup> May 2024****Following changes in Calendar of Events in page no 6 of tender document is made;****1.3 Revised Calendar of Events:**

(b)	Date by which Interested and Eligible Bidder to pay Tender Fee and confirm participation as mentioned in "Procedure to Participate in Tender"	<b>21.05.2024 [15:00 hrs]</b>
(e)	Due date and time of receipt of Bids	<b>28.05.2024 [15:00 hrs]</b>
(f)	Date & Time of opening technical bids	<b>28.05.2024 [15:30 hrs]</b>

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

**Yours faithfully,****-sd-****Head-Contracts  
CCG, Bhubaneswar**

**Format for Pre-Bid Queries**

**Tender No: TPCODL / CCG / 23-24 / 100000643**

**Tender Description: Rate Contract - Supply of Three Phase HT Smart Energy Meter for Tata Power Odisha Discoms**

**Bidder :**

Sr. No.	Detailed Reference to NIT. 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	Clause 1 , Scope, Page no. 29	This specification covers the technical requirements of design, manufacturing, testing at meter manufacturer's works ,packing, forwarding, supply and unloading at store/site of Three Phase Four Wire, HT (CT and VT operated) AC Static Smart Meters of accuracy class 0.5s (here after referred as meters) complete with all accessories for efficient and trouble free operation with network communication module (NIC) compatible with GPRS 4G fall back to 2G technology and NBIoT .	Kindly accept communication module 4G fall back to 2G technology .	Specification to be complied
2	Clause 4.23 , Self-Diagnostic feature, Page no. 32	The meter shall have logging with date and time in memory for un satisfactory / non-functioning of Real Time Clock RTC battery Non Volatile Memory Status of NIC (installed/ discovered/ normal)/Signal Strength	Status of Non Volatile Memory , Status of NIC (installed/ discovered/ normal)/Signal Strength is not available on Self-Diagnostic display. Meter have separate icon for indication of Communication status. Network signal strength status will be displayed as – Good, moderate, weak, no signal.	The meter will have indications on meter display & dump, for anomaly/ unsatisfactory / non-functioning of (i) Real Time Clock (ii) RTC battery.... single status of RTC OK/fail for Real time clock & RTC battery (iii) Memory status (iv) Battery status (v) NIC card status Signal strength Numerical Value to be available in display & HES.
3	Clause 4.38 , Harmonics recording, Page no. 34	The meter should record harmonics up to 20th harmonic Average THD of all phase for voltage THD and current THD.	Kindly accept harmonics up to 15th harmonic average THD	Specification to be complied
4	Clause 4.38 , Harmonics recording, Page no. 34	The terminal pin arrangement	Kindly accept terminal pin with 11 pin Zigzag / straight arrangement	Specification to be complied
5	Clause 4.1 , NIC MODULE DETAILS & INTEGRATION, Page no. 35	LED indication for System, Power ON indicator. Color coded LED (a) For latching on to the network (b) For latched on to the network (c) For data flow indication.	Meter display have separate icon for indication of communication status. Same shall be acceptable.	Specification to be complied
6	Clause 4.1 , NIC MODULE DETAILS & INTEGRATION, Page no. 35	Meter display should have provision for showing if NIC card if :Error Details Error ID All Good Err 00 Meter NIC communication failure Err 01 NIC initialization failure Err 02 SIM not detected Err 03 SIM invalid Err 04 No GPRS Network coverage Err 05 GPRS Network registration failure Err 06 GPRS registration denied Err 07 APN not configured Err 08 GPRS connection not established Err 09 HES IP/Port not configured Err 10 HES port not open Err 11	Provision for Error code is not available however , Meter display have separate icon for indication of communication status. Same shall be acceptable.	Specification to be complied

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7	Clause 4.2 , Communication capabilities and software feasibilities, Page no. 36	4.2.1 The meter shall have facilities for data transfer locally through Meter Reading Instrument (MRI) (Using optical port/NIC card) and remotely by 4G /NBIoT with proper security via Plug in type NIC.	For local communication kindly accept BCS in place of CMRI application.	BCS Software & CMRI Software to be provided by bidder
8	Clause 4.2 , Communication capabilities and software feasibilities, Page no. 36, 37	4.2.2 Meter should be capable for sending all data from 4G NIC , optical port and RJ11 . 4.2.8 The bidder shall supply software required for local (MRI) & remote (AMI) connectivity including required training to use the software free of cost.	Smart meter does not have provision for additional RJ11 port. Kindly accept the same.	Noted
9	Clause 4.2 , Communication capabilities and software feasibilities, Page no. 37	Meter should be able to change to prepaid mode if required with firmware upgrade.	Not applicable for HT smart meters.	Prepayment mode is not applicable for HT SMART Meters.
10	Clause 4.3 , Immunity against external influencing signals, Page no. 40	4.3.1. Magnetic Field: Meter shall log the event in its memory as "Magnet" with date and time stamp along with snapshot and the event logging threshold values as per table no.1 in 4.5	Meter will log suitable abbreviation for Magnet event in meter memory. Kindly accept the same.	Specification to be complied
11	Clause 4.3 , Immunity against external influencing signals, Page no. 40	4.3.2 Electrostatic Discharge (ESD) a. Meter shall be immune up to 50 kV and shall record accurate energy as per IS- 14697:1999/CBIP-325. Meter shall log the event into memory as 'ESD' with date& time stamp for any ESD greater than 50 kV with snap shot, the event logging threshold values as per table no. 1 in 4.5. b. The shielding around the meter 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. Meter should immune to high/ low frequency jammer devices. Meter shall log the event in its memory as" JAMMER" with date and time stamp along with snap shot, the threshold values as per table no. 1 in 4.5.	a. Meter is immune up to 35 kV ESD however event logging is not available. b. Event logging for Jammer is not available.	As per CBIP 325
12	Clause 4.3 , Immunity against external influencing signals, Page no. 40	4.4.2 The meter shall not saturate on passage of direct current, which can cause the meter either to stop recording/ record inaccurately. DC injection shall be tested both in phase and neutral. Measurement by meter shall not get influenced by injection of Chopped signal/ DC signal/ DC pulse up to 330V (both + & - DC) and for any value beyond this, of any low frequency and harmonics. Meter shall log the event into memory as 'Neutral Disturbance' with date & time stamp the thresholds are as per table no. 1 in clause 4.5 below.	In such condition meter will be either immune or log the ND event.	Specification to be complied
13	Clause 4.5 ,Abnormal Tamper conditions, Page no. 41	4.5.2 For all tamper events the time stamp and snapshot parameters shall be recorded at the start time of event for occurrence (T1) and for restoration the time stamp and snapshot parameters shall be recorded at the end time of the event (T3).	Snapshot will be recorded after confirmation of event (Persistence time) of occurrence and restoration.	Specification to be complied

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14	Clause 4.5 .Abnormal Tamper conditions, Page no. 41	4.5.3 During abnormal & tamper conditions, the current shall be recorded as active current and line current.	4.5.3 During abnormal & tamper conditions, the current shall be recorded as active current only. Kindly accept the same.	Specification to be complied
15	Table No.1, Page no. 41	ESD/JAMMER : For Occurrence : Immunity up to 50 KV with NIC and logging of event >50 KV For Restoration : Removal of ESD/JAMMER signal	Meter is immune up to 35 kV ESD however event logging is not available.	As per CBIP 325
16	Table No.1, Page no. 41	Magnet For Occurrence : a) Permanent magnet > 0.5 Tesla b) DC magnetic induction > 0.2Tesla C) AC magnetic induction > 10 mT (of any frequency) For Restoration : a) permanent magnet < 0.5 Tesla B DC magnetic induction < 0.2T c) AC magnetic induction <10 mT	For Occurrence : Whenever the meter functionality gets affected on account of magnetic field, meter log it as an event and recording starts on I <sub>max</sub> or it remains immune. For Restoration : On removal of magnetic field	Specification to be complied
17	Table No.1, Page no. 41	Voltage Unbalance For Occurrence : 20% or more between the phases and current > 2% I <sub>basic</sub> For Restoration : Shall be less than 10 % between the phases and current > 2% I <sub>basic</sub>	For Occurrence and Restoration : No check on current	Specification to be complied
18	Table No.1, Page no. 41	CT Open For Occurrence : Phase Current < 1% of I <sub>basic</sub> AND Current on other phases > 10% of I <sub>basic</sub> with all current positive For Restoration : Phase Current > 10% of I <sub>basic</sub> with all current positive	For Occurrence : Phase Current < 1% of I <sub>basic</sub> and Residual current (L <sub>n</sub> ) >10% of I <sub>basic</sub> For Restoration : Phase Current > 1% of I <sub>basic</sub> and Residual current (L <sub>n</sub> ) < 10% of I <sub>basic</sub>	Specification to be complied
19	Table No.1, Page no. 41	Current Unbalance For Occurrence : Current difference > 10% between Phases and I <sub>min</sub> 10% of I <sub>basic</sub> For Restoration : Current difference < 5% between the phases and I <sub>min</sub> >5% of I <sub>b</sub>	For Occurrence : Current difference > 10% between Phases and I <sub>min</sub> 10% of I <sub>basic</sub> For Restoration : Current difference < 5% between the phases and I <sub>min</sub> >10% of I <sub>b</sub>	Specification to be complied
20	Table No.1, Page no. 41	Low PF For Occurrence : Power Factor ≤ 0.5 in any phase For Restoration : Power Factor ≤ 0.7 in respective phase	For Occurrence : Power Factor < 0.5 in any phase For Restoration : Power Factor > 0.5 in respective phase	Specification to be complied
21	Table No.1, Page no. 41	Neutral Disturbance For Occurrence : Voltage >145% of V <sub>ref</sub> & Current >10% I <sub>b</sub> OR Frequency < 47Hz OR Frequency > 53Hz OR DC voltage / signal/ pulse/chopped signal injection For Restoration : Voltage <115% of V <sub>ref</sub> & Current > 10% I <sub>b</sub> AND Frequency > 47 Hz OR Frequency < 53 Hz	For Occurrence : In case any spurious signal injected to the neutral of meter, than meter will be either immune or log the event in its memory. In case meter log the event then energy registration will be done on reference voltage, actual current & UPF. For Restoration : on removal of spurious signal.	Specification to be complied
22	Table No.1, Page no. 41	Microwave	Meter does not have provision for event logging of Microwave. Kindly accept the same.	This clause is deleted
23	Clause 4.5.6, Page no. 44	The meter shall accurately distinguish between actual CT reversal and condition due to faulty reactive power compensation devices/ capacitor banks. Appropriate logics for the same shall be provided in meter.	For Occurrence : CT polarity reversal For Restoration : Correct CT polarity Kindly accept the same.	Specification to be complied

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24	Clause 5, Page no. 45	GENERAL CONSTRUCTIONS : Makes and Origin 1. Measurement/ computing chips : USA: Analog Devices, Cyrus Logic, Atmel, Phillips, Free scale semiconductor, Texas Instruments, South Africa: SAMES, Japan: NEC	NXP or any reputed make may also be accepted.	Specification to be complied
25	Clause 5, Page no. 45	2. Memory chips/NVM : USA: Atmel, National, Semiconductors, Texas Instruments, Phillips, Microchip	NXP or any reputed make may also be accepted.	Specification to be complied
26	Clause 5, Page no. 45	8. Microcontroller and RTC having separate battery : USA: Philips , Dallas, Atmel, Motorola, Texas Instruments, Japan: Renesas, NEC or Oki	NXP, EPSON or any reputed make may also be accepted.	Specification to be complied
27	Clause 5.1, Page no. 46	Meter Body : 5.1.1 Meter body shall be made of unbreakable, high grade, fire retardant reinforced Insulating virgine material (protective Class II) with FV0 Fire Retardant, self - extinguishing, UV stabilize, recyclable and Anti oxidation properties.	Meter body is complying with V2 grade however terminal block is complying with FV0 grade	Specification to be complied
28	Clause 5.1, Page no. 46	Meter Body : 5.1.2 The minimum thickness of the meter enclosure shall be 2mm.	Thickness of the meter enclosure shall be 2±0.2 mm.	Specification to be complied
29	Clause 5.1, Page no. 47	5.1.5 Meter cover & base shall be provided with continuous and seamless Ultrasonic welding such that it cannot be opened without breaking the enclosure. 5.1.8. Unidirectional screws to be used on meter covers where ever required.	5.1.5 Meter cover and base will be chemically welded with break to open feature. Kindly accept the same. 5.1.8 Not applicable for our design.	Specification to be complied
30	Clause 5.2, Page no. 48	5.2.3 The material of which the terminal block is made shall be capable of passing the Heat Deflection temperature test given in ISO 75 for temperature of 135°C and pressure of 1.8 MPa as mentioned in IS 14697.	Kindly accept material with HDT 125±10°C	Specification to be complied
31	Clause 5.2, Page no. 48	5.2.11 Meter terminal should have 10 terminals arrangement. The terminals should have center to center distance of min. 11.5mm. Terminal configuration shall be R-Cin,R volt, R-Cout, Y- Cin, Y volt, Y-Cout, B-Cin, B-volt, B-Cout, Neutral.	5.2.11 Meter terminal should have 11 terminals arrangement. The terminals should have center to center distance of min. 11.5mm. Terminal configuration shall be R-Cin,R volt, R-Cout, Y- Cin, Y volt, Y-Cout, B-Cin, B-volt, B-Cout, Neutral-in, Neutral-out	Specification to be complied
32	Clause 5.2, Page no. 49	5.3.3 The terminal cover design should be such that the sealing screw locking provision on cover should have min dimension of 3mmx3mm. (Excluding seal lock hole)	Kindly explain the requirement	Specification to be complied
33	5.4, Sealing of meter, terminal cover and NIC cover, page no. 49	5.4.2 For this, one no. Polycarbonate seal and three no. Hologram seal with unique serial numbers (on Left, Right & Top side) shall be provided by the bidder.	5.4.2 For this, one no. Polycarbonate seal and two no. Hologram seal with unique serial numbers (on Left, Right side) shall be provided by the bidder.	Specification to be complied
34	5.7.1 Load survey (for post-paid& NET meter mode)	Temperature near terminal block (°C)	Not available in load survey. Kindly remove the requirement.	Specification to be complied
35	5.7.1 Load survey (for post-paid& NET meter mode) page no. 50	Meter shall be capable of recording daily Energy and Demand 00:00 to 24:00 Hrs kWh/kVAh, kW/kVA for 45 days. Midnight energy value of cumulative kWh, KVAh along Signal Strength with H1 KW and KVA along with daily consumption kWh & kVAH should be available in meter memory for last 45 days. Load survey data should be at least with 5 decimal place.	Signal strength is not captured along with load survey parameters. Kindly remove the requirement. Daily consumption kWh & kVAH is not available in midnight energy however same will be logged in meter billing parameters. Load survey data with 2 decimal place is available in meter.	Specification to be complied

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36	5.7.2 Instantaneous Parameters, page no. 51	Meter Sr.No. : TPNODLXXXXXXXX	Kindly accept meter serial no with 8/10 digit alphanumeric numbers.	Specification to be complied
37	5.7.2 Instantaneous Parameters, page no. 51	Meter Type: 3P4W HTTP	Kindly accept Meter Type: 3P4W	Specification to be complied
38	5.7.2 Instantaneous Parameters, page no. 51	Voltage -R : 000.000V Voltage -Y : 000.000V Voltage -B : 000.000V Line Current -R : 00.000A Line Current -Y : 00.000A Line Current -B : 00.000A Active Current -R : 00.000A Active Current -Y : 00.000A Active Current -B : 00.000A Reactive Current-R : 00.000A Reactive Current-Y : 00.000A Reactive Current-B : 00.000A Power factor-R : 0.000 Power factor-Y : 0.000 Power factor-B : 0.000 Average Power factor : 0.000 Instantaneous Frequency : 00.000Hz	Kindly accept the parameters with two decimals.	Specification to be complied
39	5.7.2 Instantaneous Parameters, page no. 51	Cumulative Power Off Duration : 00000 Cumulative Power ON Duration : 00000	Cumulative Power Off Duration : YY DDD HH MM Cumulative Power ON Duration : YY DDD HH MM Kindly accept the same.	Specification to be complied
40	5.7.2 Instantaneous Parameters, page no. 51	Terminal Block Temperature (°C)	Meter does not have provision to log temperature.	Specification to be complied
41	5.7.3 General Information, page no. 53	Meter shall be capable for providing below mentioned general parameters in memory: Manufacture Date (DD/MM/YYYY) TOD profile showing timing NIC make	Manufacture year will be available TOD profile will be available NIC make will be same as of meter and same is mentioned on meter case.	Specification to be complied
42	5.7.4 Billing Parameters, page no. 54	7. TOD details with day time	TOD wise parameters available however day time is not available	Specification to be complied
43	5.8 Display units, Page no. 55	For IMPORT Mode: Current Sequence (R-Y-B) Latest Magnetic tamper occurrence date Latest Magnetic tamper occurrence Time ESD Tamper count Latest ESD tamper occurrence date Latest ESD tamper occurrence time TC Open tamper count TC Open occurrence date of very first event TC Open occurrence time of very first event	These display parameters are not available however meter have provision to log such events with date and time.	Specification to be complied
44	5.8 Display units, Page no. 58	For IMPORT-EXPORT Mode: Current Sequence (R-Y-B)	These display parameters is not available however voltage sequence is available on display.	Specification to be complied

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45	5.9 Output Device, Page no. 59	5.9.2 Communication LCD indicator-Meter display shall have indication in context to NIC. The blinking should be slow when NIC is detected; blinking should be fast when NIC had searched the network and it should be stable when it is successfully latched to the HES.	Meter display have separate icon for indication of communication status. Same shall be acceptable.	Specification to be complied
46	6.0 NAME PLATE AND MARKING, Page no. 60	<p>The base color of Name plate shall be blue (Pantone 2727C) indelibly and distinctly marked with all essential particulars as per relevant standards along with the following: Communication Tech for WAN and NAN( with carrier frequency)</p> <p>Content Format for bar code: TPNODL MMYX XXXXXXXXXX (9-digit Serial no.)</p> <p>Bidder should ensure that each NIC provided in meters are having laser printed Sr. No., MFG date, 'Property of TPNODL' marked, PO date and no. (same as that of meter PO)</p>	<p>The name plate information is laser printed on meter case . In black color. Communication Tech for WAN ( with carrier frequency) will be printed on comms module. Barcode will have meter serial number only.</p> <p>NIC have following information printed in it's body: 1. Type Code 2. Gateway Number 3. Communication technology with carrier frequency.</p> <p>Communication Technology IHD supported (with carrier frequency) is not available as meter does not support IHD.</p>	Specification to be complied
47	6.0 NAME PLATE AND MARKING, Page no. 60	The PCB Serial number should be printed on the PCB instead of sticker.	There is no provision of printing PCB serial no.	Specification to be complied
48	7.0 TESTS, Page no. 60	Following tests shall be necessarily conducted in addition to the tests specified in IS/IEC from CPRI/ERDA.	Please specify the test to be conducted.	Specification to be complied
49	7.1 TYPE TEST, Page no. 60	Test against abnormal magnetic influence as per CBIP TR 325.	The test method and limits specified in IS and CBIP are same . May please remove the requirement of type test as per CBIP325.	Specification to be complied
50	7.2 ROUTINE TEST, Page no. 60	Communication check of NIC	Such test will not be part of routine test.	Specification to be complied
51	8.0 TYPE TEST CERTIFICATE, Page no. 61	All the tests shall be conducted at CPRI/ ERDA as per BIS 16444 part-2.	Kindly accept type test certificate from any NABL accredited Lab (i.e. YMPL)	Noted
52	11.0 GUARANTEE, Page no. 63	In the event any defect is found by the TPNODL up to a period of at least 60 months from the date of commissioning or 66 months from the date of last supplies made under the contract whichever is earlier, Bidder shall be liable to undertake to replace/rectify such defects at its own costs, within mutually agreed time frame, and to the entire satisfaction of the Company, failing which the TPNODL will be at liberty to get it replaced/rectified at bidder's risks and costs and recover all such expenses plus the Company's own charges (@ 20% of expenses incurred), from the bidder or from the " Security cum Performance Deposit" as the case may be.	Warranty of meters will be 66 month from the date of supply.	Warranty of meters will be 66 month from the date of supply.
53	12.0 PACKING, Page no. 63	On back side of routine test certificate (RTC) the bidder shall print a picture of the meter with its small details like for consumer to know about meter or display parameters sheet.	RTC dos not have any picture however it have information about meter serial no.	Specification to be complied
54	13.0 SAMPLE, Page no. 64	Bidders are required to manufacture 03 numbers of sample meters( Two 11 KV, One 33 KV) as per the TPNODL specification	Kindly provide details for accuracy class and CT ratio for 33kV sample.	Specification to be complied (0.5s & 0.2s)

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55	15.0 QUALITY CONTROL, Page no. 65	Prior to final testing and calibration, sample meters shall be subjected to aging test (i.e. meters will be kept in ovens for 24 hours at 55 Deg. C temperature and atmospheric humidity under real-life condition at its full load current. After 24 hours meter should work satisfactorily.	Aging test is not performed in our manufacturing process. However we are following our standard manufacturing practices for production.	Specification to be complied
56	18.0 SPARES, ACCESSORIES AND TOOLS, Page no. 65	Bidder to provide free of cost 02 nos. of jig (irrespective of order lot) for retrieving data from memory of meter with every new design of meter in which previous jig is supplied cannot be used. Jig should be such that NVM can be push fit on this jig and data can be retrieve from this NVM. Five (5) nos. of optical cord against each 100 meter lot on pro-rata basis for retrieving the data of meter through optical port should be provided, if design of optical port is changed from those of previously supplied meters. 10 Lug & ferrule per meter , 5 NIC card per 100 Meter .	We are not recommending opening of meters on field and we will not providing zig to TPNODL. Data retrieval can be done at our works.  Lug and ferrule are not required in our design. Kindly accept the same.	Specification to be complied
57	1.0 SCOPE	Three Phase Four Wire, HT (CT and VT operated) AC Static Smart Meters of accuracy class 0.5s (here after referred as meters) complete with all accessories for efficient and trouble free operation with network communication module (NIC) compatible with GPRS 4G fall back to 2Gtechnology and NBIoT	<b>You are requested to kindly accept</b> network communication module (NIC) compatible with <b>GPRS 4G</b> , as per TRAI guideline 2G network not availability in field.	Specification to be complied
58	Cl 4.23 Self Diagonostic Feature	The meter shall have indications on meter display, for anomaly/ unsatisfactory / non-functioning of (i) Real Time Clock (ii) RTC battery (iv) NIC card status	The meter will have indications on meter display, for anomaly/ unsatisfactory / non-functioning of (i) Real Time Clock (ii) RTC battery.... single status of RTC OK/fail for Real time clock & RTC battery (iii) Memory status (iv) Battery status As per CBIP-325	The meter will have indications on meter display & dump, for anomaly/ unsatisfactory / non-functioning of (i) Real Time Clock (ii) RTC battery.... single status of RTC OK/fail for Real time clock & RTC battery (iii) Memory status (iv) Battery status (v) NIC card status
59	Cl 4.26 Alternate mode of supply to the meters	In case of meter power failure, the reading/data should be retrieved with the help of battery or other power source	In case of Power failure, the meter data will be retrieved on battery by downloading through optical port only.	Noted
60	Cl 4.27 Minimum Internal diameter of the terminal holes & minimum Depth of the terminal holes	5mm(minimum) 20mm (minimum)	Minimum Depth of the terminal holes : 17mm+-1mm	Specification to be complied



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61	Cl 4.32 Calibration	<p>There shall be provision for firmware update to change payment mode from Prepaid to Postpaid and vice versa; similarly for metering mode from Import only to Export-Import (NET mode) and vice versa, through proper authentication process remotely over the air (OTA). The change should be recorded as Transaction event.</p> <p>Billing should be done at that time of firmware upgrade so that readings at which this upgrade has happened are logged in meter and system.</p>	<p>Both payment method and metering mode will be configurable as per IS 16444. Firmware upgrade will not be required for this requirement. On doing the configuration, the event will be recorded the programming count will increase.</p> <p>Billing should not be done at the time of firmware upgrade because the firmware upgradation will not effect the recording of meter.</p>	Specification to be complied
62	Cl 4.34 Ultrasonic welding / Chemical Bonding	Meter cover and body should be continuous and seamless ultrasonically welded with an overlapping of 5 mm (min.) or should be seamlessly chemically bonded, so that meter should not open without leaving clear mark.	Meter will be chemically welded break to open type.	Specification to be complied
63	Cl 4.38 Harmonics recording	The meter should record the current and voltage THD. The meter should record harmonics up to 20th harmonic Average THD of all phase for voltage THD and current THD. THD values shall have 30/15 minutes (as applicable) integration period in load survey. Accuracy of harmonics recording shall be as per meter accuracy class. The meter shall generate a flag whenever the threshold (user configurable) of the 5% THD of the load current and voltage is breached..	You are requested to the meter should record the current and voltage THD. The meter should record harmonics up to 11 <sup>th</sup> harmonic Average THD.	Specification to be complied
64	Cl 4.39 Terminal Arrangement	The terminal pin shall be 10 pin Zigzag / straight arrangement with phase voltage terminal in between current terminals as mentioned in clause no. 5.2.11	The terminal pin shall be 11 pins with straight arrangement for Phase Voltage terminals in between current.	Specification to be complied
65	Cl 4.1 NIC MODULE DETAILS & INTEGRATION	With the service providers offering 4G /NBIoT services, TPNODL intends to leverage 4G as the primary communication technology with hot swappable 2G Interface Card as a fall back for meter data acquisition. The Network Interface Card for 4G shall be modular and pluggable. The NIC shall be interoperable for service provider	Meter communication module will be 4G network. The communication module can not be interchanged with any other interface card.	Specification to be complied
66	Cl 4.1 NIC MODULE DETAILS & INTEGRATION	(q) Meter display should have provision for showing if NIC card if: 1. Installed, 2. Getting Network, 3. Latched with HES, 4. Communicating with HES.	Signal Strength on display and LED's on module will be provided for the communication status	NIC error codes -12nos. To be provided. Signal strngth (numerical value should be available in display & profile data
67	4.2.2 Communication capabilities and software feasibilities	It should be the responsibility of the bidder to ensure integration of meter into HES. For cellular fallback, the Module should have backward compatibility. The fall back provision shall be taken through optical port with external modem by TPNODL. Meter should be capable for sending all data from 4G NIC , optical port and RJ11	We will provide two communication port....(i)optical (ii)4G module	Noted

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68	Cl 4.2 Communication capabilities and software feasibilities	4.2.3 It shall be possible to reconfigure the meters for RTC,TOD slots reprogramming, DIP (Demand Integration period), billing date ,display parameters etc. through proper authentication process locally through MRI and remotely over the air (OTA). Meter data should remain intact with timings. And billing should be done whenever any above mentioned attribute is changed. The change should be recorded as upgrade event.	Billing will be done in case of TOD slots reprogramming only as the other parameters will not effect the calculation of the meter	Specification to be complied
69	Cl 4.2 Communication capabilities and software feasibilities	4.2.5 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. The complete data shall be downloaded within 5 minutes OTA.	The timing of Data download over the air depends on the network capability	Specification to be complied
70	Cl 4.2 Communication capabilities and software feasibilities	4.2.17 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.	Meter immunity will be as per CBIP325	As per CBIP 325
71	Cl 4.2 Communication capabilities and software feasibilities	4.2.20 Meter display should have provision for showing if NIC card if :	kindly give the permission error code will be provide bidder standard.	NIC error codes -12nos. To be provided. Signal strngth (numerical value should be available in display & profile data
72	Cl 4.3 IMMUNITY AGAINST EXTERNAL INFLUENCING SIGNALS	4.3.1 Abnormal Magnetic field is defined as below; a) Continuous DC magnetic induction: >0.20 Tesla $\pm$ 5% (Value of the magneto motive force to be applied shall be generally >10000 AT. b) AC magnetic induction: >10 milli Tesla ( if produced with circular metal core with square cross section as specified in CBIP latest report with 2800 AT) c) Permanent Magnet: Immune up to 0.5T and Event logging >0.5T.	Meter will comply the magnet clause as per CBIP325	As per CBIP 325
73	Cl 4.3 IMMUNITY AGAINST EXTERNAL INFLUENCING SIGNALS	4.3.2(a) Electrostatic Discharge (ESD) :Meter shall be immune up to 50 kV and shall record accurate energy as per IS- 13779:1999/CBIP-325. Meter shall log the event into memory as 'ESD' with date & time stamp for any ESD greater than 50 kVwith snap shot the event logging threshold values as per table no. 1 in 4.6  4.3.2(b) Meter 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 4.5	Meter will be immune as per CBIP-325  Meter will be immune as per CBIP-325	As per CBIP 325

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74	Cl 4.4 Neutral Disturbance & other tampers	4.4.2 The meter shall not saturate on passage of direct current, which can cause the meter either to stop recording/ record inaccurately. DC injection shall be tested both in phase and neutral. Measurement by meter shall not get influenced by injection of Chopped signal/ DC signal/ DC pulse up to 330V (both + & - DC) and for any value beyond this, of any low frequency and harmonics. Meter shall log the event into memory as 'Neutral Disturbance' with date & time stamp the thresholds are as per table no. 1 in clause 4.5 below.	Pls provide the testing circuit diagram for chopping and this meter current	This shall be shared during detailed engineering
75	Cl 4.5 ABNORMAL TAMPER CONDITIONS	4.5.3 During abnormal & tamper conditions, the current shall be recorded as active current and line current. 4.5.5 All tamper/event logging thresholds values shall be configurable from remotes.	During abnormal & tamper conditions, the current will be recorded as per IS15959 Part-3 Tamper threshold will be factory configurable	Specification to be complied
76	Table No.1 Tamper table	ESD/JAMMER	Meter immune as Per CBIP 325 , No tamper logging in this condition	As per CBIP 325
77	Table No.1 Tamper table	Microwave immediate	Not applicable as per IS 15959 Part-3	This clause is deleted
78	Table No.1 Tamper table	Invalid Phase Association	Not applicable as per IS 15959 Part-3	Specification to be complied
79	Table No.1 Tamper table	Meter shall be provided with feature for terminal cover opening with time Stamping.	Terminal cover Open tamper not applicable as per IS15959 Part-3	Noted
80	Table No.1 Tamper table	Tampers Compartment Size	Tamper Compartment size will be 80+80+40 events for voltage related, current related and other events	This shall be shared during detailed engineering
81	Cl 5 General Constructions component	Components make list	Component make list will be as per the the attached sheet in the mail.	Specification to be complied
82	Cl 5.1 Meter Body	5.1.5 Meter cover & base shall be provided with continuous and seamless Ultrasonic welding such that it cannot be opened without breaking the enclosure.	Meter cover & base shall be provided with continuous and seamless Ultrasonic/ chemical welding such that it cannot be opened without breaking the enclosure.	Specification to be complied
83	Cl 5.1 METER BODY	5.1.9 The Meter body shall be such that the liquid or chemical shall not reach the electronic parts if liquid is injected from meter body such as meter terminals, push button, display, NIC card casing etc. Necessary protection and water tight sealing to be provided at terminals and Push buttons etc.	Pls mention the testing procedure of water/chemical injection test.	This shall be shared during detailed engineering
84	Cl 5.2 TERMINALS, TERMINAL BLOCK	5.2.8 Internal diameter of the terminal holes shall be minimum 5 mm; minimum clearance between adjacent terminals shall be 10 mm. Minimum Depth of the terminal holes shall be of 20 mm.	Minimum Depth of the terminal holes : 15mm minimum	Specification to be complied
85	Cl 5.2 TERMINALS, TERMINAL BLOCK	5.2.11 Meter terminal should have 10 terminals arrangement. Terminal configuration shall be R-Cin, R volt, R-Cout, Y-Cin, Y volt, Y-Cout, B-Cin, B-volt, B-Cout, Neutral.	5.2.11 we will provide Meter terminal have 11 terminals arrangement. Terminal configuration shall be R-Cin, R volt, R-Cout, Y-Cin, Y volt, Y-Cout, B-Cin, B-volt, B-Cout, N-in, N-out	Specification to be complied
86	Cl 5.3 TERMINAL COVER	5.3.1 Terminal cover shall be short type and transparent with polycarbonate LEXAN 143R/943A or equivalent on prior approval from the TPNODL.	Terminal cover shall be short/ <b>extended type</b> and transparent with polycarbonate LEXAN 143R/943A or equivalent on prior approval from the TPNODL.	Specification to be complied

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87	Cl 5.6 MD Integration	The MD integration period shall be 15 minutes (integration period programmable by MRI at site and also thru AMR with adequate security level). The MD resetting shall be automatic at the 1st of the month i.e. 0000 hours of 1st day of the month. Manual MD reset button shall not be available. Last six MD values shall be stored in the memory and one to be displayed in the Auto scroll mode. MD shall be recorded and displayed with minimum three digits before decimal and minimum two digits after decimal points. MD integration shall be of sliding Type at an interval of 10 min.	Sliding interval should be 5 minutes for 15 minutes MD IP and if sliding interval of 10 minute is required then the MD IP should be 30 minutes	MD Integration period 15mins/30mins programmable. In case of sliding interval is 5 minutes for 15 minutes MD IP and sliding interval of 10 minute for MD IP 30 minutes
88	Cl 5.7.1 Load Survey parameters	Load Survey parameters for prepaid & postpaid mode	Parameters will be as per IS15959 Part-3	Specification to be complied
89	Cl 5.7.2 INSTANTANEOUS PARAMETERS	INSTANTANEOUS PARAMETERS	The Instantaneous profile parameters will be as per IS15959 Part-3 or running supply GTPC project.	Specification to be complied
90	Cl 5.7.4 BILLING PARAMETERS	BILLING PARAMETERS	Parameters will be as per IS15959 Part-3 or running supply GTPC project.	Specification to be complied
91	Cl 5.8.1 AUTO SCROLL/PUSH BUTTON MODE DISPLAY	Display for ESD Tamper Count Latest ESD tamper occurrence date Latest ESD tamper occurrence time	we will not provide Logging for ESD tamper; therefore the display will not be applicable	Logging not required if immune
92	Cl 5.9 Output devices	5.9.2 Communication LCD indicator-Meter display shall have indication in context to NIC. The blinking should be slow when NIC is detected; blinking should be fast when NIC had searched the network and it should be stable when it is successfully latched to the HES.	We will provide the status LED on module.	Specification to be complied
93		Meter base shall be opaque with VIRGIN POLYCARBONATE LEXAN 500R or Lexan (i.e. chart of Meter base shall be opaque with virgin polycarbonate LEXAN 500R or equivalent(i.e. chart of Lexan 500R compared with the alternative material) on prior approval from the TPNODL. (If different material offered the bidders should submit material data sheet in technical bid )	<b>Comment:</b> - Please also accept equivalent material like, LEXAN 143/143R for Meter base also. Since, the same material grade is also accepted for Meter cover. Since, it is also a superior grade material if using same material we can achieve good ultrasonic welding. Request you to please also consider the same.	Specification to be complied
94				
95	Please refer, Clause no. 5.1.3, 'METER BODY'	And in clause 5.1.4 it has been mentioned that the Meter cover shall be transparent with virgin polycarbonate LEXAN 143R/943A or equivalent (i.e. chart of Lexan 500R compared with the alternative material) on prior approval from the TPNODL. (If different material offered the bidders should submit material data sheet in technical bid )		
96		Clearance between adjacent terminals is <b>10 mm (minimum).</b>		
97		Similarly in clause no. 5.2.8 "Terminals, Terminal Block" it is mentioned that minimum clearance between adjacent terminals shall be 10 mm.		
98	Please refer clause no.4.27, GENERAL TECHNICAL REQUIREMENTS	Also in Clause no. 5.2.11, it is mention that the terminals should have center to center distance of min. 11.5mm.	<b>Comment:</b> We request you to kindly also accept clearance and crepage distance between adjacent terminals as per clause no. 6.60 of IS 13779 /CBIP 325. Please confirm the acceptability of the same.	Specification to be complied

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99	Please refer, Clause no. 5.3.3, 'Terminal Cover'	The terminal cover design should be such that the sealing screw locking provision on cover should have min dimension of 3mmx3mm. (Excluding seal lock hole)	<b>Comment:-This requirement is not very clear to us, please clarify it.</b>	Specification to be complied
100		Address for Sample submission		Please submit the samples at below address; MRT Division, TP Central Odisha Distribution Limited Power House Colony, Unit-8, Bhubaneswar, Pin-751012, Odisha