

PI-240962166
PQR, Rev-00- (HT smart meter)

Annexure-1

1. Past Performance

The Bidder shall have supplied at least 50 nos. of meters as on the date of techno-commercial bid opening of this enquiry

Document required: Bidder to furnish unpriced P.O or Invoice copy or relevant documents in support of supply.

2. Experience Criteria

The offered/similar type of meters should be in successful operation for at least 2 year in last 7 years as on the date of techno-commercial bid opening date of this enquiry.

Document required: Bidder to furnish MOM with customer/ Site or Customer email/ letter or any customer document for commissioning status

3. Organizational Capability:

The Bidder/OEM shall have service support set-up for providing product repair/ rectification in India.

Bidder to furnish set-up details along with an undertaking in respect of above.

4. Bidder should be OEM/OEM Authorized representative.

Bidder to furnish certificate in case of OEM authorized representative.

ANNEXURE 'D'

TECHNICAL PARTICULARS OF THREE-PHASE 11kV, CT/PT OPERATED ALTERNATING CURRENT SMART METER OF ACCURACY CLASS 0.2S

Sl. No	Characteristics	REQUIREMENT	Vendor Compliance
1	Meter model	Bidder to inform	
2	Accuracy class	Class 0.2S as per IS 16444: Part 2	
3	CT, PT ratios	PTR: 11KV/110V CTR: For Item 1-400-200/5-5A Item 2: - 900-450/5-5A Item 3: - 1200-600/5-5A	
4	Guarantee the satisfactory performance of the meters	For a period of 60 months from the date of commissioning.	
5	Marking	To be informed during PO placement.	

(i) General Standards Applicable for Meter

The performance and testing of the meters shall conform to the following standards and amendments/revisions thereof.

Sl. No.	Standard No.	Title
1	IS 16444: Part 2 with latest amendments	AC Static Transformer Operated Watt-hour and VAR-Hour Smart Meters, class 0.2S, 0.5S and 1S
2	CBIP- Publication 325 with latest amendments	Standardization of AC Static Electrical Energy Meters
3	CBIP Technical report no. 111 with latest amendments	Specification for Common Meter Reading Instrument
4	IS:9000 with latest amendments	Basic Environmental Testing Procedures for Electronic & Electrical Items.
5	IS 12063 with latest amendments	Degrees of protection provided by enclosures of electrical equipment.
6	IS 14451, Part-2: 1999 with latest amendments	Telemetry for consumption and demand. Direct digital transfer of meter values.
7	IS 4905: 1999 with latest amendments	Methods for Random sampling.
8	IS 12346 with latest amendments	Specifications for Testing Equipment for AC Energy meter.
9	IS 15959 Part 3 (as applicable) with latest amendments	Data exchange for electricity meter reading, tariff and load control: Companion specification

(ii) Communication

Meter shall have ability to communicate with HES on any one of the technologies mentioned in IS 16444 (RF/Cellular/PLC) in a secure manner. The selection of communication technology should be as per the site conditions and as per design requirement of the AMISP to meet the Service Level Agreements (SLAs). In case of cellular based meter, the meter shall accommodate SIM Card / e-

SIM of any service provider. For installation on Feeders, if cellular, the meter shall accommodate dual SIM Card / e-SIM of any service provider/multinetwork or dual-profile SIM. The meter shall log the removal of the plug-in type communication module removal /nonresponsive event with snapshot.

(iii) Other Specifications

Particulars	Specifications
Applicable Standards	The meters shall comply with IS 16444: Part2 for all requirements except for those parameters which have been specifically mentioned to be otherwise in this specification.
Reference Voltage	[As per relevant IS]
Current Rating	Ib 5A/ 1A (as applicable)
Starting Current	As per IS 16444: Part2
Accuracy	Class 0.2S as per IS 16444: Part 2
Limits of error	As per IS 16444: Part 2
Operating Temperature range	As per IS 16444: Part 2
Humidity	As per IS 16444: Part 2
Frequency	As per IS 16444: Part 2
Influence Quantities	As per IS 16444: Part 2
Power Consumption of meter excluding communication module	As per I S 16444: Part 2
Currentand Voltage circuit	As per IS 16444: Part 2
Running at No Load	As per IS 16444: Part 2
Test output device	As per IS 16444: Part 2
Meter Display	As per IS 16444: Part 2
Time of Use (In case of net-meter both export & import parameters to be measured)	As per IS 15959: Part 3 (as applicable)
Parameters to be measured	As per IS 16444: Part 2 / IS 15959: Part 3 (as applicable)
Power Quality Information	As per IS 15959: Part 3 (as applicable)
Maximum Demand	As per IS 15959: Part 3 (as applicable)
Load Survey/Interval Data	As per IS 15959: Part 3 (as applicable)
LED/LCD Indicators	As per IS 16444: Part 2
Tamper/Event recording	As per IS 15959: Part 3 (as applicable)
Alarm	As per IS 16444 / IS 15959: Part 3 (as applicable)
Measuring Elements	As per IS 16444: Part 2
Anti-Tamper features	The meter shall continue working under tamper conditions as defined in IS 15959 Part 3 and would log the event and send alarm at HES after logging of the defined tamper features as per IS 15959 Part 3.
Programmability	As per IS 16444: Part 2
Communication	As per IS 16444: Part 2

Communication Protocol	As per IS 15959: Part 3 (as applicable)
Real time clock (RTC)	As per IS 16444: Part 2 / IS 15959: Part 3 (as applicable)
Data Retention	As per IS 16444: Part 2
Battery Backup	Meter shall be supplied with separate battery backup for RTC.
Data display facility (manual/Auto)	As per IS 16444: Part 2 (as applicable) However minimum requirement should include the following: Data Display shall have following features: • High Resolution (Shall display energy values with resolution of 2 digits before decimal and 5 digits after decimal. • The Push button for manual scrolling in addition to auto scrolling with a persistence time of 10 seconds for each parameter shall be provided. Display of data as per IS 16444 (Part 2)
Remote Firmware Upgrade	As per IS 15959: Part 3 (as applicable)

Digital Input (DI)	The Smart meter should have the provision of sensing digital inputs via DI (Digital Input) port provided at the terminal block. The smart meter should register the digital input(s) sensed, upon reaching respective threshold (configurable) and the event shall be communicated to HES. The OBIS code required for this shall be provided during detailed engineering. The requisite power supply requirement (AC to DC auxiliary supply/ charger) for the DI should be made internal to the smart meter itself. In case the same is not feasible to be provided, bidder should provide external power supply with following specifications. a) Input voltage: 63.5V AC b) Operating voltage: 12V DC c) Contact Rating: 5A Continuous @30V DC, 25A for 3 sec No. of DIs - 04 Nos. DI for 4V(DC), 10 mA
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Note: PSTCL shall reserve the right to get the entire requisite quantity of HT Smart Meters inspected at meter-manufacturer's works before dispatch to the works of successful bidder, in order to verify that the HT Smart Meters conform to the above specification.

SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS FOR 11kV HT SMART METER:-

Item Bidder's data

1. Type
2. Application
3. Rated Voltage
4. Rated Current
5. Frequency
6. Overload capacity
7. Minimum starting current in % of base current
8. Power loss in potential circuit
9. Power loss in current circuit
10. Change in error due to
 - a. Variation in frequency
 - b. Variation in temperature
 - c. Variation in voltage
11. Accuracy Class
12. Total Weight of meter
13. Details of case
14. H.V. withstand
15. Insulation Resistance
16. Standard to which the meter confirm
17. Type of Energy Registration Mechanism
18. MD Reset Mechanism
19. Insulation Test (Voltage 50Hz for 1Min)
 - i. Temperature co-efficient from 10% of rated load to 100 % rated load (5°C to 45°C)
 - ii. Working range
 - Voltage
 - Current
 - iii. Type of load (linear, non linear, balanced /unbalanced at any P.F.)
 - iv. Display details
 - i. Display Cycle (descriptive In order of display)
 - ii. Period of display of each parameter
 - iii. Display scroll-lock facility
 - iv. Backlit LCDP
 - v. Memory
 - vi. Power on in absence of mains
 - vii. Tamper data preservation capacity
 - viii. Load Survey
 - a. Parameter Logged
 - b. Logging interval
 - c. No. of days of Load Survey
 - ix. Time of the day Zone
 - x. Capability for fraud Prevention & detection
 - xi. Sealing and Locking Arrangement
 - xii. Type of communication
 - Local- Optical port

Additional Communication port
xiii. Real Time Clock

NOTE: The above information as mentioned from Sr. No. 1 to 32 must be furnished along with the tender.