RUBBER PARK INDIA (PVT) LTD

(*A Joint Venture of KINFRA & Rubber Board*)

2 A, "Kautileeyam", Rubber Park, Valayanchirangara,P.O, Ernakulam, Kerala-683 556.
Tel: (0484) 2657218/ 2655548 |Email: md@rubberparkindia.org | Web: www.rubberparkindia.org

Notice Inviting Re-Tender (NIT)

Tender No	:	**RP/E/T-04/R-2/2025-26**
Name of the Work	:	**Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram**
EMD	:	**Rs. 9000/-**
Period of Completion	:	**75 days**
Tender Fee	:	**Rs. 750/- (Including GST)**

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Locality	:	**Rubber Park India (P) Ltd.,** **2 A,** Kautileeyam, Irapuram, Valayanchirnagara P O, Ernakulam- 683 556.
Last date of Submission	:	20.01.2026 at 2:30 PM
Name of Bidder	:	……
Address of Bidder	:	…… …… ……

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Tender Notice

Rubber Park India (P) Ltd., 2 A, Kautileeyam, Irapuram **Valayanchirangara P O, Ernakulam- 683 556**

Re Tender

Rubber Park India (P) Ltd. (RPIPL) invites sealed, unconditional item rate tenders from competent manufacturers /dealers /suppliers /agents for the following work:

Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram.

Tender fee	EMD	Period of Completion	Last Date of submission
750/- (Inclusive of GST)	Rs.9,000/-	75 days	20.01.2026 at 2:30 PM

Tender document (Non-transferable) can be downloaded from the website, www.rubberparkindia.org. *Enquires can be made from the office* of Rubber Park India (P) Ltd., Irapuram, Ernakulam **(Tel: 0484 2657218/2655538)**, *from 6.01.2026 to 20.01.2026.*

Place: Irapuram
Date: 06.01.2026

Sd/-
Managing Director
Rubber Park India (P) Ltd.

Notice Inviting Re-Tender

Rubber Park India (P) Ltd. (RPIPL) invites sealed, unconditional item rate tenders, from competent manufacturers/dealers/suppliers/agents for the following work of "**Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram.**", who has to fulfil the eligibility criteria prescribed hereunder**.**

NIT No	Name of work& Location	EMD (Rs.)	Period of completion	Last date of submission of Tender document	Time & Date of opening of Technical bid	Tender Fee (Rs.)
1	2	4	5	6	7	8
RP/E/T-04/R-2/2025-26	Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram	9,000/-	75 days	20.01.26 at 2.30 PM	20.01.26 at 3.00 PM	750/- (Inc.GST)

1. **Eligibility Criteria:**

Bidders who fulfil the following requirements shall be eligible to apply.

a. The Bidder should be either an **A grade electrical contractor having EHT license** issued by Kerala State Electricity Licensing Board **or** the **original equipment manufacturer of Approved Makes/ an authorized dealer/agent/ distributor/channel partner** of the OEM.

b. The Bidder shall have valid GST registration.

2. The time for carrying out the work of supply, installation, testing and commissioning of the SAMAST Compliant ABT meter & Metering cubicle and dismantling of old metering cubicle at Rubber Park India (P) Ltd. located at Irpauram Village in Kunnathunadu Taluk of Ernakulam District in Kerala State shall be **75 days** from the date of issue of work order.

3. Tender document can be download from the official website of RPIPL, *www.rubberparkindia.org* Enquires can be made from the office of Rubber Park India (P) Ltd., Irapuram, Ernakulam **(Tel: 0484 2657218/2655538)**, *from 06.01.2026 to 20.01.2026.*

4. Documents to be submitted: -

   (i) Copy of **A grade electrical contractor having EHT license** issued by Kerala State Electricity Licensing Board if applicable, in support of the eligibility criteria specified in Sl. No.01 (a).

   (ii) The bidders other than **A grade electrical contractor and OEM** shall submit proof of authorized dealer/agent/ distributor/channel partner of the OEM, in support of the eligibility criteria specified in Sl. No.01 (a).

   (iii) The bidders should submit the copy of GST registration.

   (iv) The bidders should submit the tender document duly filled and signed on all pages.

   (v) The bidders should submit the DD or payment receipt for EMD and Tender fee.

5. Tender Submission: Tender shall be submitted in sealed envelope, duly super scribed **"Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram."** with the tender fee (Rs. 750/-) and EMD (Rs. 9,000/-) as Demand Draft in favour of Managing Director, Rubber Park India (P) Ltd., payable at Valayanchirangara.

   The tender in the prescribed format along with Tender fee, EMD and other required details, in sealed cover should reach **The Managing Director, Rubber Park India (P) Ltd, 2A Kautileeyam, Valayanchirangara, Ernakulam 683 556** on or before 20.01.2026, 2.30 PM.

6. The bid submitted will be opened on 20.01.2026 at 03.00 PM in the office of Rubber Park India (P) Ltd, 2A Kautileeyam, Valayanchirangara, Ernakulam 683 556.

7. Earnest Money Deposit (EMD) of the unsuccessful bidders will be refunded without any interest on finalization of the contract with the successful bidder or on the expiry of the firmperiod of tender plus 60 days whichever is earlier.

   EMD deposited with the client will be forfeited / enca

shed under the followingcircumstances.

- If the bidder withdraws his bid during the firm period specified.
- If the successful bidder fails within the time limit to sign the contract agreement σ fails to furnish the required performance security deposit.

8. The bid submitted is treated as invalid if the bidder does not submit all the documents (as stipulated in the bid document).

9. The competent authority on behalf of Managing Director, Rubber Park India (P) Ltd. does not bind itselfto accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in whichany of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.

10. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.

11. The competent authority on behalf of Managing Director, Rubber Park India (P) Ltd. reserves to himselfthe right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.

12. The contractor shall not be permitted to bid for the work if he/she is the near relative of an officer of Rubber Park India (P) Ltd.

13. The bid for the work shall remain open for acceptance for a period of 90 days from the date of opening of bids. If any bidder withdraws his bid before the said period or issue of work order, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to Rubber Park India (P) Ltd., then Rubber Park India (P) Ltd. shall, without prejudice to any other right or remedy, be at liberty to forfeit 100% ofthe said earnest money as aforesaid. Further the bidders shall not be allowed to participate in the rebidding process of the Purchase and will be blacklisted.

14. The intending bidders shall ensure that the equipment offered are fully met with the technical specifications mentioned in the tender and submit the guaranteed technical specification compliance undertaking as per **Annexure-1 A** along with the bid.

15. The intending bidders have to quote their corresponding item rates in schedule of quantities in the price bid. The quoted price will be considered as all-inclusive rate inclusive of cost of all materials, labour charges, transportation, packing, freight and

insurance charges, all overheads, contingencies, profits, taxes (ie., Income tax etc.), duties/ levies, cost of scaffoldings, tools for dismantling, supply, installation and commissioning, loading and unloading charges etc., complete for the dismantling, supply, installation, testing and commissioning of the SAMSAT compliant ABT meters and metering cubicle at Rubber Park India (P) Ltd, located at Irapuram, Ernakulam but only exclusive of GST. The rates quoted by the Contractor shall be firm throughout the contract period and there shall be no upward revision of the rates quoted by the Contractor for any reasons whatsoever. **The price bid shall be evaluated based on the Total Price excluding GST for all the items.**

16. The successful bidder on receipt of the Work Order, shall deposit an amount equal to 5 % (Five percent) of the contract value, as Performance Guarantee in the form of of DD in favor of **the Managing Director, Rubber Park India (P) Ltd. payable at Valayanchirangara** or online transfer to the account (**Account No. 00000038377727468, Name of Account holder: Rubber Park India (P) Ltd., Bank & Branch: State Bank of India, Valayanchirangara., IFSC Code: SBIN0070558**) within 7 days from the date of Work Order. All the deposits of EMD, performance guarantee will not bear any interest whatsoever.

17. **The bidder other than 'A grade electrical contractor (EHT license)' should have appoint a person having valid EHT supervisor license issued by the Kerala State Electricity Licensing Board at site before commencement of the work. A Copy of the license shall be submitted before commencement of work for verification and approval of the client**.

18. **Defect Liability Period (DLP)**: - All the items of works shall be guaranteed to be free from defective workmanship or materials for a period of **60 Months** from the date of successful completion of the work. The Contractor at his own cost shall rectify any defect that may appear during this period.

19. This notice inviting Tender shall form a part of the contract document. The successful bidders / contractor, on acceptance of his bid by the Accepting Authority shall within 7 days from the date of purchase order/letter of award, sign the contract consisting of the notice Inviting Bid, all the documents including additional conditions and specifications, if any, form part of the bid and the rates quoted at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

20. If the successful bidder fails to complete the dismantling, supply, installation, testing and commissioning in time specified, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as agreed compensation the amount calculated **at the rates 1% per week or** part of the week on the total contract value of the order subject to a maximum of 10% of the contract value. The successful bidder shall not be liable

for delays in performing his obligations resulting from any force majeure cause as referred to and/or defined below. Force majeure is herein defined as any cause which is beyond the control of the Contractor or the Owner as the case may be, which they could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affects the performance of the Contract, such as:

a. Natural phenomena, including but not limited to floods, droughts, earthquakes and epidemics;

b. Acts of any Government, domestic or foreign, including but not limited to war, declared or undeclared, priorities, guarantees, embargoes.

Then upon the happening of any such event causing delay, the contractor shall within 07 days give notice thereof in writing to the authority, but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of Rubber Park India (P) Ltd, to proceed with the supply.

21. Payment Terms for Supply & Installation

The Payment for the work, shall be released within 10 days after the successful commissioning of the total item as per the schedule of quantities to the satisfaction of the Engineer in Charge, against the submission of GST invoice. **The GST portion of the invoice would be released only after reflection of GST amount in our GSTR 2B**. TDS as per rules shall be deducted from the bills.

22. **Scope of Work:** -

Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram. The rate quoted is inclusive of cost of transportation, packing, freight and insurance charges, all overheads, contingencies, profits, taxes (ie. Income tax etc.), duties/ levies, loading and unloading charges, installation etc. for dismantling, supply, installation, testing, and commissioning of the equipment at Rubber Park India (P) Ltd, Irapuram, but only exclusive of GST.

ANNEXURE –I

A. TECHNICAL SPECIFICATION FOR ABT METER

1 SCOPE

1.1 This specification covers the design, manufacturing, testing, supply of 3 phase, 4 wire, EHT, CT and PT operated, ABT class interface energy meters of accuracy class 0.2 S for both Active and Reactive energy. The meter shall be DLMS compliant & AMR compatible.

1.2 Facilitation for reprogramming of CT and PT ratio if necessary and supervision for commissioning after the installation is also scope of the project.

1.3 The specification contains only the major aspects of the meter to be supplied as per this tender. Any item left out in this document, but which are essential for the satisfactory performance of the meter and the implementation of AMR through third party shall be deemed to be included in the scope.

2 APPLICABLE STANDARDS

1. CBIP Guide on Static Energy Meter - Specifications & Testing Pub No.325,January 2015.
2. AC Static Transformer operated Whr and VARhr. Meters, Cl.0.2 S - IS 14697/ 99 Re affirmed 2004/IEC 62016-21
3. Degree of Protection - IS 12063.
4. Testing equipment for AC Electrical Energy meter- IS 12346.
5. Assembling Standard of Electronic components- ANSI/IPC-A-610.
6. EMC- Testing and measurement techniques, Surge immunity test- IEC 61000-4-5/ 2001- 04.
7. Basic environmental Testing procedures for electronic and electric items- IS 9000 and latest amendments thereof.
8. Guidelines on Data exchange for electricity Meter reading, Tariff & Load control Companion specification - IS 15959-Part 1 and its latest amendments thereof. The requirement is for Grid meter with Ethernet port as primary communication interface.
9. Data security - IEC 62056-51/IS 15959
   i. IS15959-Parts 1and its amendments,
   ii. Cyber security guidelines issued by the Central Government, time to time &
   iii. The technical standards for communication system in Power Sector laid down by the Authority
10. Meter Accuracy- IEC-62053-22:2003/IEC 62053-23:2003/IS16444

In case of any conflict or discrepancy, the order of precedence shall be

1. IS

2. Manual on Standardization of AC Static Electrical Energy Meters, CBIP 325
3. IEC

In case of any difference between provisions of these standards and the provisions of this specification, the provisions contained in this specification shall prevail.

3 CLIMATIC CONDITIONS

1) Maximum Annual Rainfall (mm)	5000
2) Average Annual Rainfall (mm)	3107
3) Average no. of thunderstorm days/annum (Iso ceraunic level)	50
4) Average number of dust storm days per annum	5
5) Average number of rainy days per annum	120-140
6) Specified operation range of temperature	-10^0 C to 55^0 C
7) Limit of range of operation of temperature	-25^0 C to 60^0 C
8) Limit of temperature range for storage and transport	-25^0 C to 70^0 C
9) Relative humidity (%)	50-99
10) No. of months during which tropical monsoon conditions prevail	5
11) Moderately hot and humid climate, conducive to rust and fungus growth	
12) Seismic level (Horizontal accn)	0.3 g
13) Iso-ceramic level (days per year)	50
14) Maximum Wind Pressure	150 kg sq mt

4 SYSTEM PARAMETERS

1) Voltage rating - 110V between phases and 110/√3 V between phase and neutral
2) Voltage variation **-** +20% to -40%
3) Standard Basic Current Ib**-** 1A (for EHT)
4) Rated maximum current Imax**-** 200% of Ib
5) Standard frequency **-** 50Hz +/-5%
6) Power Factor **-** should work for zero to UPF (lag and lead)
7) Class of accuracy **-** 0.2S for both kWh & kVArh
8) System of measurement **-** The meter is intended for 3 phase 4wire method under balanced and unbalanced load.
   Maximum Demand-MD1 forward KVA
9) Type of installation – Indoor panel or cubicle mounted
10) Earthing system – Solidly grounded
11)Auxiliary Power supply-AC/DC

5 GENERAL REQUIREMENTS: -

5.1. Meter shall bear ISI mark

5.3. The standard reference temperature for performance shall be 27^oC +/- 2^0 C. If tests are made at a temperature other than that of reference temperature, the results shall be corrected by applying the appropriate temperature coefficient of the meter.

5.4. Unless otherwise specified, the meter should conform to all applicable clauses of standards specified above.

5.5. The meter should start registering the energy at 0.1 % of basic current.

5.6. The meter shall withstand and operate satisfactorily without loss of accuracy under the most hazardous tropical climatic conditions including that specified above.

5.7. Along with each meter, inside the packing, leaflet/manual of meter which shall strictly match with the specification of the meter supplied shall be provided. It shall include the list of full display parameters with same legends and order as appear in the meter supplied. Also the list of all anomalies/events legends shall be provided as in the meter supplied.

5.8 Class of accuracy:

5.8.1. The class of accuracy of meter should be 0.2S for both kWh and kVARh.

5.8.2. The meter should show the readings having an error within the permissible limits for all values of current between 5% of basic current and of the maximum current for all power factor as stipulated in standards when it is under balanced loads and under reference conditions.

5.8.3. The accuracy shall not drift with time.

5.8.4. The meter shall be able to carry a current equal to 20 times the maximum current for 0.5 seconds and the variation in percentage error shall not exceed $\pm$0.1%.

5.8.5. Voltage dips and interruptions shall not produce a change in register of more than 0.002 kWh/0.003 kVAh.

5.8.6. The accuracy of the meter shall not be affected with the application of abnormal voltage/frequency generating device. The meters shall safely withstand the usual fluctuations arising during faults etc. In particular, VT secondary voltages 115% of Vref applied continuously and 190% of Vref for 3.0 seconds, and CT secondary current 150% of Iref applied continuously and 30 times of Iref applied for 0.5 seconds shall not cause any damage to or maloperation of the meters

5.9. Power consumption: -

The total burden imposed by a meter for measurement and operation shall be defined as per IS 14697 and its amendments. An automatic backup for continued operation of the meter's calendar- clock, and for retaining all data stored in its memory, shall be provided through a long- life battery, which shall be capable of supplying the required power for at least 2 years. The meters shall be supplied duly fitted with the batteries, which shall not require to be changed for at least 10 years, as long as total VT supply interruption does not exceed two years.

5.9.1. Voltage Circuit: The active & apparent power consumption of voltage circuit including power supply of meter at reference voltage, reference temperature and frequency shall not exceed 1.0 Watt & 4.0 VA per phase.

5.9.2. Current Circuit: The apparent power taken by current circuit at basic current, reference frequency & reference temperature shall not exceed 1.0 VA/phase.

5.9.3. The apparent and active power consumption of each circuit of a meter at reference voltage/ current mentioned above is for reference frequency and reference temperature.

6 DESIGN AND CONSTRUCTIONAL REQUIREMENTS: -

6.1. The meters shall safely withstand, without any damage or mal operation, reasonable mechanical shocks, earthquake forces, ambient temperature variations, relative humidity etc. in accordance with IS-14697(and its amendments) & CEA (Installation and Operation of meters) Regulations 2006 (and its amendments).

6.2. Meters shall be projection type and shall have IP 51 degree of protection.

6.3. Direct Sun rays may be falling on the Energy Meter and it shall be designed to withstand the temperature.

6.4. Unless otherwise specified, features of meter should be that of insulating encased meter of protective class II as elaborated under CBIP Guide No.325.

6.5 Design

6.5.1. All insulating materials used in the construction of the meter shall be substantially non-hygroscopic, non-aging and of tested quality.

6.5.2. Parts and surfaces which are subjected to corrosion, shall be provided with protective coating to achieve durable results.

6.5.3. The meter shall have a wireless design.

6.5.4. The meter shall have a Test Output (kWh & kVArh), Operation Indicator. The operation indicator must be visible from the front and test output device shall be provided in the form of LED.

6.5.5. Meter shall be designed with application specific integrated circuit (ASIC) or micro controller, shall have no moving part, electronic components shall be assembled on printed circuit board using surface mounting technology (SMT).

6.5.6. Factory calibration using high accuracy software-based test bench shall be used considering the error of standard in overall accuracy as per table 1 of IS 12346.

6.5.7. Assembly of electronic components shall be as per ANSI/IPC-A-610 standard.

6.5.8. Internal power supply circuit shall be designed using highly reliable components. Critical components such as metering ICs (ASIC), Micro controller etc. shall be procured from STACK or IECQ registered suppliers.

6.5.9. The measurement by meter shall not get influenced by injection of high frequency AC Voltage/chopped signal / DC signal and harmonics on the terminals of the meter.

6.5.10. The meter's accuracy shall not be affected at all by magnetic field from all sides of the meter i.e. front, sides, top and bottom of the meter.

6.5.11. The meter shall record total energy including harmonic energy and record both total and fundamental energy.

6.5.12. The meter shall not generate conducted or radiated noises, which could interfere with other equipment in the system.

6.5.13. Meter shall have in built facility to display phase sequence of voltage and current and power flow direction to ensure correctness of CT/PT connections during meter installation.

6.5.14. Under normal conditions of use, electrical circuits and insulation shall not reach a temperature which might adversely affect the operation of the meter. The temperature rise at any point of the external surface of the meter should not exceed 20^0 C at an ambient temperature at 25^0 C to 45^0 C.

6.5.15. Meter shall withstand an impulse voltage of 10 kV peak. The waveform and the generator characteristics used for testing shall be in accordance with IEC 62052-11, clause 7.3.2.

6.5.16. kVAh measurement should be the vector sum of active and reactive energy

6.6 **Manufacturing Process, Assembly, Testing**: -

6.6.1. Meters shall be manufactured using latest and 'state of the art' technology and methods prevalent in electronics industry. All inward flow of major components and sub assembly parts (CT, PT, RTCs/Crystals, LCDs, LEDs, power circuit electronic components etc.) shall have batch and source identification.

6.6.2. Multi-layer 'PCB' assembly with 'PTH' (Plated through Hole) using surface mounted component shall have adequate track clearance for power circuits.

6.6.3. SMT component shall be assembled using automatic 'pick-and-place' machines within process 7 stages, Re-flow Soldering oven, for stabilized setting of the components on 'PCB'. For soldered PCBs, cleaning and washing of cards, after wave soldering process is to be carried out as a standard practice.

6.6.4. Assembly line of the manufacturing system shall have provision for testing of sub-assembled cards. Manual placing of components and soldering is to be minimized to items, which cannot be handled by automatic machine.

6.6.5. Handling of 'PCB' with ICs/C-MOS components is to be restricted to bare minimum and precautions to prevent 'ESD' failure to be provided.

6.6.6. Complete assembled and soldered PCB should undergo functional testing using computerized automatic test equipment.

6.6.7. Test points should be provided to check the performance of each block/stage of the meter circuitry.

6.6.8. Testing at intermediate and final stage is to be carried out with testing instruments, duly calibrated with reference standard, with traceability of source and date.

6.7 Construction

6.7.1. Meter Base &Cover: -

6.7.1.1. The meter case and cover should meet UV aging test as per ASTM standards.

6.7.1.2. The manufacturer shall indicate hardness, melting temperature and tensile yield strength of the material and necessary test certificate of the same shall be furnished.

6.7.1.3. The Meter case (base and cover) shall be made of Unbreakable Flame retardant High grade UV stabilized Poly Carbonate with minimum thickness of 2 mm and of good dielectric and mechanical strength.

6.7.1.4. Meter case (base and cover) and extended terminal block cover should be injection moulded in UV stabilized poly carbonate. The meter base shall be opaque. The meter cover and extended terminal block cover shall be kept fully transparent. The moulded meter case should withstand glow wire test as per IS 14697 and heat deflection test as per ISO:75.live screws shall be of nickel/tin plated brass

6.7.1.5. The meter cover should be ultrasonically/chemically welded with meter base.

6.7.1.6. Polycarbonate or acrylic or holographic seals shall be used. Lead seals are not permitted at all.

6.7.1.7. The meter shall be provided with adequate shielding to withstand external magnetic influence from all directions as per CBIP guide No.325/Jan 2015.

6.7.1.8. The meter body shall be type tested for IP51 degree of protection as per IS:12063 against ingress of dust, moisture & vermin. Dust proof window of transparent material (toughened) glass or UV stabilized poly carbonate) shall be provided to permit a clear view of the display. The fixing arrangement shall be such that the window glass cannot be removed without breaking the seal.

6.7.2. **Terminal Arrangement, Terminal Block and Cover**: -

6.7.2.1. Terminals may be grouped in terminal block(s) having adequate insulating properties and mechanical strength.

6.7.2.2. The terminal arrangement and connection diagram shall conform to IS: 14697. Terminal arrangement shall be marked on terminals as well as in the connection

diagram. The diagram shall show the phase sequence for which the meter is intended.

6.7.2.3. Terminals shall be designed to carry Imax continuously and under this condition the temperature at the terminal block shall not exceed 70^0 C with ambient temperature of 45degree C within operating temperature range as defined by IS 14697.

6.7.2.4. Minimum two Clamping screws should be provided along with each meter.

6.7.2.5. The terminal block shall be made from best quality non- hygroscopic, flame-retardant polycarbonate material or any other superior industrial plastic material (capable of passing the flammability tests given in IS: 11731) with nickel-plated brass inserts for connecting terminals. The material shall be capable of passing the test given in ISO: 75 for temperature of 135 0C and pressure of 1.8 MPa.

6.7.2.6. The termination arrangement shall be provided with high quality transparent cover with screws.

6.7.2.7. The internal diameter of the terminal holes should be minimum 5.5 mm +/_0.2mm as per CBIP 325, Table 2 and shall be capable of carrying continuous current of Imax. The holes in the insulating material of the terminal block shall be of sufficient size to accommodate the insulation of conductors also.

6.7.2.8. The meter terminal block shall have tin-plated brass inserts. The terminal screws shall have flat bottom so as not to pierce the external conductors. All electrically live screws shall be of nickel/tin plated brass. The fixing screws used on the terminal cover for fixing and ceiling shall be held captive in the terminal cover

6.7.3) **Sealing Arrangement**: -

6.7.3.1. There shall be provision for sealing by the utility in such a way that the internal parts of the meter are accessible only after breaking such distinctive seals.

6.7.3.2 There should be provision for sealing by the utility. Required number of seals with serial number on one side and KSEBL logo on the other side should be supplied along with each meter.

6.7.3.3. There shall be provision for sealing the optical port also.

6.7.4. **Real Time Clock**: -

6.7.4.1. The real time clock (RTC) used in the meter for maintaining time (IST) and calendar shall be quartz type. The time accuracy shall be as per provision of CBIP 325.

6.7.4.2. RTC shall be pre-programmed for 30 Years Day / date without any necessity for correction. Maximum drift shall not exceed +/- 2 Min/year. The crystal should be temperature compensated for entire working temperature range when powered by internal battery or supply

6.7.4.3. The uncertainty of setting initial time shall not be more than +/- 30 seconds from Indian Standard Time as maintained by NPL, New Delhi.

6.7.4.4. The RTC shall have long life (10 Years) non-rechargeable battery.

6.7.4.5. Time & date setting shall be possible through Common Meter Reading Instrument (CMRI), laptop or base computer.

6.7.4.6. Synchronization of energy meter 'RTC' Time / Date shall be protected through password / Key code enabled command from CMRI and Laptop. There shall be provision for remote time synchronization through optical port / RS 485

communication port and ethernet port using SNTP protocol/ DLMS manufacturer specific OBIS Code

6.7.4.7. The RTC battery and battery for display in the case of power failure shall be separate. All clock corrections shall be registered in the meter's memory and suitably shown on print out of collected data.

7 OPERATIONAL REQUIREMENTS

7.1. **Measurement of active energy**: -

The active energy (kWh) measurement shall be carried out on 3-phase, 4-wire principle, with an accuracy as per class 0.2 S of IS 14697. In EHT meters (for CT secondary rating 1 A), the energy shall be computed directly in CT and VT/CVT secondary quantities and indicated in kilo watt-hours. The meter shall compute the Forward, Reverse and the net active energy (kWh) during each successive 5/15 (configurable)minutes block and store it in its memory along with plus/minus sign. It shall also display on demand the net kWh sent out during the previous time block, with a minus sign if there is net kWh export.
Further, the meter shall continuously integrate and display on demand the net cumulative active energy.

The meter shall be capable of programming the 15 minutes time block to 5 minutes time block at site without any additional cost.

The register shall move backwards when direction of active power flow reverses.

7.2. **Computation of Average Frequency**: -

The meter shall compute the average frequency during each successive 5/15 (configurable) minute block and store in its memory and shall be displayed preferably with 3 decimal digits. The average frequency of the previous 5/15-minutes block shall also be displayed, on demand in Hertz. The accuracy of frequency shall be less than 100 ppm. The meter shall be capable of programming the 15 minutes time block to 5 minutes time block at site without any additional cost.

7.3. Measurement of System Voltage: -

The meter shall continuously compute the average of the RMS values of the three line-to neutral VT/CVT secondary voltages as a percentage of 63.51 V and display the same on demand. The accuracy of the voltage measurement/computation shall be at least 0.2%, or a better accuracy for voltage variation as specified in the IS:14697. The meter shall compute the average voltage during each successive 5/15 (configurable) minute block and store in its memory

7.4. Measurement of Reactive Energy: -

The measurement shall compute the reactive power (VAR) on 3 phase 4 wire principle and integrate the reactive energy (VARh) algebraically into two separate registers, one for the above power forward and the other for the active power reverse direction. Also, algebraic resultant of block wise reactive energy for both forward and reverse active power flow for the periods for which the average RMS voltage is 103% or higher and the other for the period for which the RMS voltage is below 97% are also to be computed and to be registered in cumulative registers along with net reactive energy above RMS voltage of 103% or above and RMS voltage below 97% for the block wise 4 quadrant operation also.
The current reactive power (VAR) with a minus sign if negative, and cumulative reactive energy (VARh) readings of the above registers shall be displayed on demand.
The RMS voltage % limits shall be reprogrammable. The limits of error shall conform to IS 14697 for class 0.2 S. The readings of the two registers at each midnight shall also be stored in the meter's memory. In EHT meters (1 A) the reactive power and reactive energy transmittal shall be computed in VAR/VARh directly calculated in CT and VT secondary quantities. When lagging reactive power is being sent out, VAR display shall have a plus sign or no sign and VARh registers shall move forward.
When reactive power flow is in the reverse direction, VAR display shall have negative sign and VARh registers shall move backwards.

7.5. Measurement of Power factor: -

The metering system shall be suitable for full power factor range from zero (lagging) through unity to zero (leading). The metering module shall work as an active energy import and export meter along with reactive (lag& lead) meter. Energy measurement should be true four quadrant type.
Both instantaneous and block wise Power Factor for active power forward flow and active power reverse flow is to be computed and displayed.

7.6. Harmonic measurement: -

The meter should be capable of measuring fundamental energy as well as total energy, i.e., fundamental plus harmonics energy up to the 29th harmonic. Total energy should be made available on meter display. The total energy (fundamental plus harmonic energy) and fundamental energy shall be logged in the meter memory and be capable of downloading. However, the percentage total harmonic distortion of current and voltage and individual higher harmonic shall be measured in the meter and downloadable along with other parameters.

7.7. Voltage failure indication: -

The three line-to-neutral voltage shall be continuously monitored and in case any of these falls below about 70%, suitable indication shall be provided on meters' front. The time blocks in which such a voltage failure occurs/persists shall also be recorded in the meter's memory.

7.8. Power supply: -

The meters shall operate with the power drawn from the VT secondary circuits.
An automatic backup for continued operation of the meter's calendar-clock, and for retaining all data stored in its memory, shall be provided through a long life battery, which

shall be capable of supplying the required power for at least 2 years, under meter un-powered condition. The meters shall be supplied duly fitted with the batteries, which shall not require to be changed for at least 10 years, as long as total VT supply interruption does not exceed two years.

7.9 Maximum Demand (MD) Registration: -

The maximum demand (apparent/active) shall be computed on fixed block principle. The maximum registered value shall be made available in meter readings. The integration period shall be set as 30 minutes that shall be able to be changed to 5/15 minutes integration period if required, through suitable high-level software/ MRI as an authenticated transaction.

7.9.1 Maximum Demand Reset: -

Following provisions shall be available for MD reset in the meter –

i. Auto reset at predefined date and time (24.00 hrs. of the last day of every month)
ii. Authenticated transaction through suitable high-level software/ CMRI
iii. Facility shall also be provided for remote MD reset from a base station computer with password protection.
iv. Manual Reset

For EHT meters, all energy values & MD shall be recorded in Mega range and for HT meters, all energy values & MD shall be recorded in Kilo range. CT & PT ratios shall be programmed according to the field requirements.

7.10. Time Synchronization: -

The time synchronization shall be possible from remote through communication ports of the meter using time synchronization signal received from HES through SNTP protocol / DLMS manufacturer specific OBIS Code. Only limited clock (Maximum 1 minute once in a week) adjustment shall be possible at site. When an advance or retard command is given twelve subsequent time blocks shall be contracted or elongated by five seconds each. The meter shall not accept another clock correction command for next seven days. All clock correction shall be registered in the meter's memory and shown in the downloaded meter data.

Synchronization of Energy Meter 'RTC' Time/Date shall be possible/ Protected through password/Key code enabled command from CMRI and Laptop. There shall be provision for remote time synchronization through optical port, RS 485 communication port and ethernet port using SNTP protocol/ DLMS manufacturer specific OBIS Code

7.11. Data Storage: -

Each meter shall have a non-volatile memory in which the following shall be automatically stored:

i. Average frequency for each successive 5/15-minute (configurable)block up to third decimal
ii. Net kWh transmitted during each successive 5/15-minute (configurable)block up to two decimals, with plus/minus sign
iii. Cumulative kWh transmitted at each midnight, with minimum two decimal.

iv. Cumulative kVARh transmitted for voltage high condition, at each midnight, with minimum two decimal.
v. Cumulative kVARh transmitted for voltage low condition, at each midnight, with minimum two decimal.
vi. Date and time blocks of failure of VT supply on any phase, as a star (*) mark.
The meters shall store all the above listed data in their memories. The memory shall be sufficient for storing 5 minutes time block data for a minimum period 65 (sixty five) days. The data older than 65 (sixty-five) days shall get erased automatically (in FIFO).

7.12. **Communication Capability**: -

The meter shall have communication facilities as per IS 15959- 2011part 1 with latest amendments.
Meter shall be capable of communicating with DLMS compliant AMR solutions with maximum possible security with Head End Systems. The requirement is for ABT type grid meter, any specific features not included in DLMS protocol shall be implemented using manufacturer specific OBIS codes. Manufacturer shall provide all necessary settings /configuration, detailed document of manufacturer specific OBIS codes if any with reasoning for using such OBIS codes, associated details, passwords/ keys and any other information necessary to establish communication with maximum security offered by DLMS protocol to a DLMS compliant AMR solution.

***Meter Manufacturer shall provide all technical support for interfacing with a DLMS compliant AMR solution without any additional cost*.**

It shall be capable of simultaneous communication via different ports and communication media.

The meter shall have the following communication ports
1) RS 485 for remote communication,
2) Ethernet port (RJ 45) for remote communication and
3) optical port for communication and data downloading. It shall be possible to retrieve online data through the above ports. All ports shall be AMR capable. Physical access to the communication port shall be restricted with sealable shrouding. The ports shall be configurable independently for communication to different systems on different protocols using different communication mediums like GPRS/ GSM, VSAT/FO link, etc. The meter shall have the facility to be connected over a networked environment.
Meter manufacturer shall provide a diagnostic software (base computer software (BCS) for communication testing. All the ports shall be fixed.
Each meter shall have a galvanically isolated optical port on its front for tapping all data stored in its memory using universal Portable or handheld data collection devices (Common Meter Reading Instrument 'CMRI') and Laptops. Necessary software and optical adapter for data downloading to Laptops shall be provided. There shall be a log indicating the time stamped communication activity of each port. The meter shall support open protocol communication conforming to DLMS/COSEM so that third party data acquisition software from a central control center shall communicate with the meter. A test certificate from an accredited lab in this regard shall be furnished.
Login security for sending data remotely shall be as per the standards. The software should have programmable facility to restrict the access to the information recorded at basic security level as per clause 7.3.1 of CBIP Guide 325. Meter shall have a unique IEM Serial

number in a read only location in the memory location which can be accessible through communication from head end server (HES) of automated meter reading system

7.13**Display Parameters and Type of Display**:

7.13.1. The meter shall have minimum 8 digits with parameter identifier and bright LCD electronic display with green back lit. The size of the digit should be minimum 10 X 5 mm. The nonvolatile memory should retain data for a period not less than 10 years under unpowered condition.
7.13.2. LCD shall be suitable for temperature withstands of 70^0 C
7.13.3. While displaying zone wise related parameters, proper display indication may be provided for identifying the zones.
7.13.4. All the displays available in Auto Scroll Mode shall be made available in the battery mode.
7.13.5. The LCD display should have a wide viewing angle of 45^0 to 60^0 cone up to 1 meter distance. For a clear visibility of the display of the meter reading at a distance large viewing area with large icons is preferred.

7.13.6. **Following measuring parameters should be displayed**:

I.**Auto Scroll Mode**

Auto Scroll Parameters shall be rolled over every 10 seconds each

1. Self-Diagnostic
2. Meter Sl. no.
3. LCD Segment Check
4. Anomaly String.
5. Real Date and Time
6. Instantaneous R-Phase Voltage (Phase to neutral voltage)
7. Instantaneous Y-Phase Voltage (Phase to neutral voltage)
8. Instantaneous B-Phase Voltage (Phase to neutral voltage)
9. Instantaneous R-phase Current
10. Instantaneous Y-phase Current
11. Instantaneous B-phase Current
12. Frequency
13. Phase Sequence (Voltage and current) (both should be displayed Simultaneously.
14. Instantaneous three phase power factor with sign for lag / lead
15. Instantaneous signed Active Power (KW)
16. Instantaneous Apparent Power (kVA)
17. Instantaneous signed reactive power (KVAr)
18. Cumulative kWh (Import)
19. Cumulative kWh-ToD Zone 1 (Import)
20. Cumulative kWh-ToD Zone 2 (Import)
21. Cumulative kWh-ToD Zone 3 (Import)
22. Cumulative kWh (Export)
23. Cumulative kWh-ToD Zone 1 (Export)
24. Cumulative kWh-ToD Zone 2 (Export)
25. Cumulative kWh-ToD Zone 3 (Export)

26. Cumulative Net Active Energy (Import-Export)
27. Cumulative KVArh lag while Active Import
28. Cumulative KVArh Lag while Active Export
29. Cumulative KVARh Lead while Active Import
30. Cumulative KVArh Lead while Active Export
31. Cumulative kVAh (Import)
32. Cumulative kVAh (Export)
33. Rising Demand in KVA (Import) with elapsed time
34. Rising Demand in KVA (Export) with elapsed time
35. Maximum Demand in kVA for the current month (Import)
36. Maximum Demand in KVA - TOD - Zone1
37. Maximum Demand in KVA - TOD - Zone2
38. Maximum Demand in KVA - TOD - Zone3
39. Maximum Demand in kVA for the current month (Export)
40. Maximum Demand in KVA - TOD - Zone 1
41. Maximum Demand in KVA - TOD - Zone 2
42. Maximum Demand in KVA - TOD - Zone 3
43. Cumulative Maximum Demand (Import)
44. Cumulative Maximum Demand (Export)
45. Present Status of PT related tamper
46. Present Status of CT related tamper
47. Present Status of other tamper
48. % THD of Voltage harmonics Phase wise (R, Y, B)
49. % THD of Current harmonics Phase wise (R,Y,B)
50. % THD above the threshold value with date and time
51. MD Reset Count
52. Program Count
53. Power ON Time.
54. Programmed PT ratio
55. Programmed CT ratio

II. **Push Button Mode (Display 1)**

All Auto scroll parameters shall be available in this mode

III. **Push button mode (Display 2)**

1. Cumulative Reactive Energy for voltage High condition (ie net KVArh when RMS voltage is > 103 % Vn)
2. Cumulative Reactive Energy for voltage Low condition (ie net KVArh when RMS voltage is < 97 % Vn)
3. Last 5/15 minutes block average frequency in Hz.
4. Last 5/15 minutes block average of active import energy
5. Last 5/15 minutes block average of active export energy
6. Last 5/15 minutes block average of net active (Import-Export) energy

IV. **High Resolution Mode (2+6 digits) (Display 3)**

1. High Resolution Display Cumulative kWh (Import)
2. High Resolution Display Cumulative kVArh Lag (Import)
3. High Resolution Display Cumulative kVArh Lead (Import)
4. High Resolution Display Cumulative kVAh (Import)
5. High Resolution Display Cumulative kWh (Export)

6. High Resolution Display Cumulative kVArh Lag (Export)
7. High Resolution Display Cumulative kVArh Lead (Export)
8. High Resolution Display Cumulative kVAh (Export)

V. **Billing Parameters (Display 4)**

1. History1: Cumulative KWh (Import)
2. History1: Cumulative kWh - TOD Zone1 (Import)
3. History1: Cumulative kWh - TOD Zone2 (Import)
4. History1: Cumulative kWh - TOD Zone3 (Import)
5. History1: Cumulative KWh (Export)
6. History 1: Cumulative kWh - TOD Zone1 (Export)
7. History1: Cumulative kWh - TOD Zone2 (Export)
8. History1: Cumulative kWh - TOD Zone3 (Export)
9. History1: Cumulative Net Active Energy (Import-Export)
10. History 1: Cumulative KVArh Lag (Import)
11. History 1: Cumulative KVARh Lag (Export)
12. History 1: Cumulative KVArh Lead (Import)
13. History 1: Cumulative KVArh Lead (Export)
14. History1: Maximum Demand in KVA (Import)
15. History1: Maximum Demand in KVA - TOD Zone1 (Import)
16. History1: Maximum Demand in KVA -TOD Zone2 (Import)
17. History1: Maximum Demand in KVA- TOD Zone3(Import)
18. History 1: maximum Demand in KVA (Export)
19. History1: Maximum Demand in KVA - TOD Zone1 (Export)
20. History1: Maximum Demand in KVA -TOD Zone2 (Export)
21. History1: Maximum Demand in KVA- TOD Zone3 (Export)
22. History1: Cumulative kVAh (Import)
23. History 1: Cumulative KVAh - TOD Zone 1 (Import)
24. History1: Cumulative KVAh - TOD Zone 2(Import)
25. History 1: Cumulative KVAh - TOD Zone 3 (Import)
26. History1: Cumulative KVAh (Export)
27. History 1: Cumulative KVAh - TOD Zone 1 (Export)
28. History1: Cumulative KVAh - TOD Zone 2(Export)
29. History 1: Cumulative KVAh - TOD Zone 3 (Export)
30. History1: Average Power Factor (Import)
31. History 1: Average Power Factor (Export)
32. History 2: Cumulative KWh (Import)
33. History 2: Cumulative KWh (Export)
34. History 2: Cumulative KVArh Lag (Import & Export)
35. History 2: Cumulative KVARh Lead (Import Export)
36. History 2: Cumulative KVAh (Import)
37. History 2: Cumulative KVAh (Export)
38. History 2: Maximum Demand in KVA (Import)
39. History 2: Maximum Demand in KVA (Export)
40. History 3: Cumulative KWh (Import)
41. History 3: Cumulative KWh (Export)
42. History 3: Cumulative KVArh Lag (Import)
43. History 3: Cumulative KVARh Lead (Import)
44. History 3: Cumulative KVAh (Import)

45. History 3: Cumulative KVAh (Export)
46. History 3: Maximum Demand in KVA (Import)
47. History 3: Maximum Demand in KVA (Export)

7.13.7. There shall be provision for locking and unlocking of any desired display parameter in all the modes by the user.
7.13.8. The maximum demand shall automatically be reset at 24:00 hours of the last day of each calendar month. Manual reset push button shall be provided to reset the meter at any time by the utility personnel. There shall be provision for sealing the manual reset push button.
7.13.9. The meter shall be supplied with battery backup feature for displaying the parameters during power OFF condition. It shall be possible to download data to a laptop or CMRI on battery without PT supply. Battery life shall be minimum ten years. Battery backup shall be provided internally. While taking reading in battery mode, the battery push button need not be pressed continuously. The meter should continue in battery mode while taking reading using UP/DOWN scroll key. Once the push button is released, the parameter shall be displayed for a sufficient duration for taking readings without any interruption.
7.13.10. kWh, kVArh and kVAh should have high resolution display to facilitate testing with desired accuracy within reasonable time. It shall be possible to read these high-resolution values using CMRI and laptop.
7.13.11. Manual scroll mode shall be selectable from any point during the auto scroll mode. If no manual keys are pressed for 5 minutes the display shall automatically return to auto scroll mode. When manual key is pressed the display mode shall go to the manual mode with the same display parameter in auto mode from where the push button is pressed.

7.14 Anti tamper Features: -

The meter shall detect and register the active and reactive energy correctly in both directions under the following conditions:

1. Change of phase sequence when that of voltage and current are changed simultaneously.
2. The meter should work accurately even without neutral.
3. The meter should work in the absence of any one or two phases. It should show the readings accurately for the phases having connection.
4. All the above tampers will be verified at basic current at reference voltage.
5. Visual indication shall be provided to show tamper conditions stated above.
6. In the event the meter is forcibly opened, even by 2 mm displacement of the meter cover, same should be recorded as tamper event with date & time stamping and the meter should continuously display that the cover has been tampered. This display shall toggle with the normal display parameter.

Sl No.	Tamper Name	Occurrence condition	Restoration condition	Persistence time for occurrence (Logging)	Persistence time for restoration (Logging)
1	Missing potential	Any phase voltage (Vx) falls below 70%	If Vx > or = 70% of Vref	5 minutes	3 minutes

		of Vref irrespective of any other phase voltages (Vref = 63.5 V)			
2	Voltage unbalance	(Vmax-Vmin) > 20% of max of 3 phase voltages	(Vmax-Vmin) < 20% of max of 3phase voltages	5 minutes	3 minutes.
3	Neutral disturbance	Any phase voltage is more than 150% of Vref	When all the phase voltages are below 150% of Vref	5 Minutes	3 Minutes
4	Current missing/ Current open	When any phase Iph< 1% of Ib	Iph> 1% of Ib	5 Minutes	3 Minutes
5	Current unbalance	(I max- I min) > 30% of max of 3 phases of currents	(I max- I min) < 30% of max of 3 phases of currents	5 Minutes	3 Minutes
6	Current reversal	Reversal of current in any phase	Normal connection	5 Minutes	3 Minutes
7	Magnetic tamper	Record at Imax as per CBIP 325.	Not influenced by magnetic field.	Immediate	Immediate
8	Cover open tamper	When top cover is opened even by 2 mm displacement	Non roll over tamper	Immediate	-
9	Wrong phase association	Voltage and current sequence are different	Voltage and current sequence are the same	5 Minutes	2 Minutes

7.15. Self-diagnostic Tests:-

The meter shall be capable of performing complete self-diagnostic check to monitor the circuits for any malfunctioning to ensure integrity of data memory location at all time. The meter shall have indication for unsatisfactory/nonfunctioning/malfunctioning of the following:

a) Time and date on meter display
b) All display segments (all alpha numeric) on meter display
c) RTC Battery
d) Non-Volatile Memory

7.16 Provision for accuracy tests after commissioning:

The meter shall be provided with separate flashing LED's for active and reactive energy to represent the pulse output for testing the meter by suitable testing equipment. The operation indicator must be visible from the front.
Presence of voltage and current shall be displayed in the Form Display.

CT ratio of 1A or 5A shall be user configurable. Actual CT/PT ratio shall be programmable

It shall be possible to check the accuracy of active/ reactive energy measurement of the meter on site by means of LED output. Resolution of the test output shall be sufficient to enable the starting current test in less than 10 minutes and accuracy test at the lowest load shall be completed with desired accuracy within 5 minutes.

17 Auxiliary Supply to IEM- The meters shall normally operate with the power drawn from the VT secondary circuit (line-to line voltage of 110V); provided that there shall be provision to operate the meters from AC and DC (Range 110V to 220V DC) auxiliary power supply.. Necessary isolation and/or suppression shall also be built-in as per IS 14697 and its amendments, for protecting the meters from surges and voltage spikes from extra high voltage switchyards. The reference frequency shall be 50Hz. Also, the meter shall have suitable of ±15% tolerance for DC supply.
7.18 Abnormality of Events: -The meter should have features to detect the occurrence and restoration of the following abnormal events:

7.18.1. Missing potential and potential imbalance: - The meter shall be capable of detecting and recording occurrence and restoration with date and time the cases of potential failure (one phase or two phases) and low potential, which could happen due to disconnection of potential leads (one or two), even at zero current. Meter shall also detect and log cases of voltage unbalance (20% or more for 5 Minutes.) Higher of the 3 phase voltages shall be considered as reference for this purpose. The meter shall log as missing potential event if the respective voltage is <70 % of V ref.

7.18.2. Neutral Disturbance: -Meter shall record the event when any phase voltage is more than 150% of V_{ref}. Meter shall immune to DC voltage disturbance of 400 V.

7.18.3. Current unbalance: - The meter shall be capable of detecting and recording occurrence and restoration with date and time of current unbalance (30% or more for 5 minutes). Higher of the 3 phase currents shall be considered as reference for this purpose.

7.18.4. Power OFF: - The meter shall be capable to record power OFF events in the meter memory. For this, the meter shall keep records for minimum 125 events (Occurrence +Restoration).

7.18.5. Current Missing: - The meter shall be capable of detecting and recording occurrences and restoration of current missing in any one or two phases of current, with date & time of occurrence and restoration if the respective phase current falls below 1% of Ib.

7.18.6. External Magnetic Influence: -The performance of meter shall not be affected under the influence of external DC/AC and permanent magnetic field of high intensity as

mentioned in CBIP 325 and record the influence of abnormal magnetic field with date and time in the memory. The event shall also be displayed in the auto mode.

7.18.7.Wrong phase association indication on display: - Display of proper indication shall be shown in case of wrong phase association. The persistence and restoration time for tamper logging shall be 5 minutes and 2 minutes respectively.

7.18.8. The metering system shall be provided with adequate magnetic shielding so that any external magnetic field (AC electromagnet or DC magnet) applied on the metering system shall not affect the proper functioning and recording of energy as per error limits prescribed by CBIP Guide 325.

7.18.9. The meter shall keep records for the minimum 500 events of abnormality (occurrence + restoration). For above abnormal conditions, the recording of events shall be on FIFO basis. It shall be possible to retrieve the abnormal event data along with all related snap shots data through the meter optical port with the help of CMRI &downloaded the same to the base computer. All the information shall be made available in simple & easy to understand format compartmentalized as follows:

Compartment No.1 - 150 events of potential related
Compartment No.2 - 150 events of current related
Compartment No.3 - 50 other events (Neutral Disturbance & Magnetic Tamper)
Compartment No.4 - 125 events of power failure
Compartment No.5 - 24 events of transaction related changes
Compartment No.6 - 1 event of cover open.

Tamper events shall be logged in accordance with IS 15959 for the events for which OBIS codes are available. For other events code provided by KSEBL shall be used. The tamper which has occurred earlier and not yet restored shall be logged in a separate register and to be shown in the downloaded meter data.

8 CONNECTION DIAGRAM AND TERMINAL MARKING: -

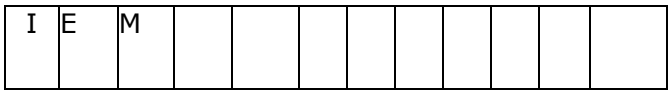
8.1. Every meter shall be indelibly marked with a connection diagram showing the phase sequence for which it is intended and shall be clearly shown on the inside portion of the terminal cover and shall be of permanent nature. In case any special precautions need be taken at the time of testing the meter, the same may be indicated along with the circuit diagram.
8.2. Meter terminals shall also be marked, and this marking should appear in the above diagram.
8.3. Stickers of any kind will not be accepted in this regard

9 NAME PLATE DETAILS: -

9.1. Every meter shall have a name plate clearly visible and indelible and distinctly marked in accordance with relevant standards. The following information shall appear on a nameplate inside the meter.

1) Manufacturer's name &trademark and place of manufacture.
2) Serial number.
Each meter shall have a unique identification code, which shall be marked permanently on its front, as well as in its memory. All meters supplied to as per this specification shall have

their identification code starting with "IEM", which shall not be used for any other supplies. "IEM" shall be followed by an eight-digit running serial number. This shall be mutually agreed between the buyer and the vendor.+



3 bytes ASCII

Serial Number of IEM 4bytes BCD

3) Designation of type.
4) Number of phases and number of wires for which the meter is suitable.
5) Guarantee period.
6) Purchaser's name
7) Purchase Order No.
8) Principal unit in which the meter records.
9) Reference voltage & frequency in Hz.
10) Basic current and rated maximum Current.
11) Meter constant (pulse rate of testing signal).
12) Reference Temperature
13) Class index.
14) Month and Year of manufacture
15) BIS marking as per statutory requirement
16) TOD timings
17) DLMS Compliant Category B Meter
18) Sign of Double Square for encased meters of protective class II
19) Project SAMAST KSEBL.
20)Degree of protection

9.2. The Meter Serial No. shall be Bar Coded along with numeric No. The size of Bar Code shall not be more than 35 X 5 mm.

9.3. Stickers in any case will be not accepted for name plates.

10 DATA COMMUNICATION FACILITIES: -

10.1. Data architecture and communication protocols shall enable easy multi-vendor exchange of data without usage of any converting/translating equipment. For this, the data structure adopted within the energy meter shall be as per IS15959 part 1 and its latest amendments thereof. The data structure/coding details shall be furnished to the Owner. All necessary software required for downloading the information to a user-friendly Windows'/LINUX based operating system of Base billing computer system through CMRI or Laptop shall be furnished without any additional cost to the purchaser.

10.2. The data transfer shall be highly reliable and fraud proof (No editing shall be possible on base computer by any means). The software shall have capability to convert all the data into ASCII format.

10.3.Meter reading during power off: -It should be possible to read the meter display visually and with MRI in absence of input voltages with help of battery backup.

10.4.Data downloading capability: -Meter shall support a minimum baud rate of 9600 on optical port. It shall be possible to read selective data from the meter as specified in the companion standard**.**

11 LOAD SURVEY AND BILLING HISTORY: -

11.1 The meter shall be capable of storing 15minutes time block data for the following parameters for the last 65 days. Memory shall be sufficient to store 5 minutes time block data for 65 days.

1. Real time clock Date and Time
2. KWh (Import & Export)
3. Net Active Energy
4. KVAh (Import & Export)
5. KVArh Lag (Import & Export)
6. KVArh Lead (Import & Export)
7. Maximum Demand in KVA (Import & Export)
8. Current & Voltage (avg of 5/15 min period) phase wise
9. Average Frequency for each successive 5/15 minutes block
10. KVArh High and KVArh Low.

11.2. The logging interval for load survey shall be 5/15 minutes and shall be configurable. Load survey data shall be logged for the last 65 days on time basis. This load survey data can be retrieved using CMRI and Laptop/ any suitable equipment as and when desired and load profiles shall be viewed graphically and analytically with the help of meter application software. Whenever meter is taken out and brought to laboratory, the Load Survey data shall be retained for the period of actual use of meter. The meter application software shall be capable of exporting /transmitting these data for analysis to other user software in spreadsheet format. The resolution for load survey shall be 0.01.

11.3. Load survey parameters shall be available for minimum 65 days.

11.4. Billing History: - The meter shall record the history of following billing parameters for the last 12 months.

1. Weekly cumulative kWH (Import & Export)
2. Weekly cumulative kVArh lag (Import & Export)
3. Weekly cumulative kVARh lead (Import & Export)
4. Weekly cumulative kVAh (Import & Export)
5. PF (Import & Export)
6. MD in kVA (Import & Export)

11.5.Trend:- The downloaded meter data shall be able to construct trend during the load survey period as listed below.

1. Energy (KWh, KVArh and KVAh) - Import & Export
2. Average Voltage (R,Y,B)
3. Average Current (R,Y,B)

4. Average P.F (Import & Export)
5. Demand in KVA (Import & Export)

11.6. All data downloaded shall be easily convertible to printable format and be able to save as PDF. Trend during the load survey period shall be available in printable format.
11.7. The number of pages in the report should be minimum and shall cover all the details mentioned above.

12 TESTS

12.1. The meter shall be tested with its base and cover in position; all parts intended to be earthed shall be earthed.
12.2. Before any test is made, the circuits shall have been energized for a time sufficient to reach thermal stability but not less than one hour.
12.3. The connection shall be done as marked on the diagram of connections.
12.4. All tests are to be carried out under reference conditions as specified in IS:14697/1999 unless otherwise specified.
12.5. During the tests for accuracy requirements, proper repeatability conditions shall be maintained. During type tests, repeatability at any test point determined on the basis of three readings at short intervals, shall be better than 1/2 of the limit of percentage error under reference conditions. Manufacturer shall state the necessary number of pulses/ pulse counts for maintaining the repeatability condition.
12.6. Uncertainty of measurement of percentage error shall not exceed 1/2 of the limit of percentage error for the given test point at reference conditions. If the uncertainty exceeds this limit, all the limits of percentage errors shall be reduced as described in CBIP 'manual on standardization of AC static energy meters' to make allowances for such uncertainty.
12.7. Unless otherwise specified, procedure for carrying out tests and the results of those tests shall conform to the relevant clause in Manual on Standardization of AC Static Electrical Energy Meters, Pub. No. 325 CBIP and if it is not mentioned in the above manual, then to IS 14697/1999 (amended up to date) or CBIP Guide No.325.
12.8. The meter communication shall be tested with KSEBL approved DLMS compliant test suite and hardware and shall demonstrate all functionalities as specified in IS 15959 part 1 is configured correctly as per RPIPL tender requirement.

12.9 Type Tests: -

12.9.1. Meter shall be fully type tested as per IS 14697/1999 (amended up to date), CBIP Guide No.325
12.9.2. Requirement of results and the procedure for conducting tests which are not specifically mentioned in this document shall be same as that mentioned in the manual on Standardization of AC Static Electrical Energy Meters, Pub. No. 325.
12.9.3. The Type Test Reports shall clearly indicate the design and constructional features of the type tested meters.
12.9.4. Separate Type Test Reports for each offered type of meters shall be submitted.
12.9.5. All the Type Tests shall have been carried out from Laboratories such as CPRI, ERDA, ERTL (East) or equally reputed and accredited by the National Board of Testing and Calibration Laboratories (NABL) of Govt. of India to prove that the meters meet the requirements of the specification.
12.9.6. Type Test Reports conducted in manufacturers own laboratory and certified by testing institute shall not be acceptable.
12.9.7. Type test certificates rather than type test reports are preferred.

12.9.8. Type test certificate/ reports shall be submitted along with the offer and the same shall be issued within last 5 years from the date of tender. If the type test certificate/ reports are not within the valid period, the offer shall be rejected.
12.9.9. In case the test certificate / reports partially is/ are not meeting the requirement tests are to be carried out at no extra cost in owner's presence. The same should be assured at the time of bidding.

12.10 Routine and acceptance tests: -

a) Meters shall pass the entire acceptance and routine tests, as laid down under IS 14697 and also additional acceptance tests as prescribed in this specification.
b) Following routine tests are to be conducted on every product:

i) AC High Voltage Test
ii) Insulation Resistance Test
iii) Test on limits of error
iv) Test of meter constant
v) Test of starting condition
vi) Test of no-load condition

An acceptance test shall be carried out under the reference voltage, rated frequency and Cos Φ (Sin Φ) = 1 for active (reactive) energy meter at 5% of rated current. Six error tests are to be carried out successively in the load condition at intervals of 5 minutes. The variation in meter error expressed by the difference between the maximum and minimum of the errors so obtained in all these error tests shall not exceed the value corresponding to 1/2 of the limit of percentage error at the test points.
c) Following acceptance tests are to be carried out on selected samples from a lot:

i) AC High Voltage Test
ii) Insulation Resistance Test
iii) Test of limits of error
iv) Test of meter constant
v) Test of starting condition
vi) Test of no-load condition
vii) Repeatability of error test
viii) Test of power consumption

d) Other acceptance tests: -i) Tamper conditions as stated in this specification

ii) Verification of ABT features.
iii) Special Tests – Voltage Variations, Frequency Variations, Harmonic test
iv) Glow wire testing for poly carbonate material
v) The meter shall comply all the test for external AC/DC magnetic field as per CBIP PUB No.325 with latest amendments, moreover, the magnetic influence test for permanent magnet of 0.5 T for minimum period of 15 minutes shall be carried out, by putting the magnet on the meter body. After removal of magnet, meter shall be subjected to accuracy test as per IS:14697/1999(amended up to date).
vi) The meter shall withstand impulse voltage at 10 kV peak and impulse voltage test is to be carried out on selected samples.
vii) Vibration test.
viii) Fully assembled and finished meter shall undergo burn in test process for 12 hrs at 55 ^{0} C (maximum temperature not to exceed 60 ^{0} C under base current (Ib) load condition.

During the FAT IEMs after final assembly and before dispatch from Bidder's/Manufacturer's works shall be duly tested to verify that they are suitable

for downloading data using meter communication ports, shall be subjected to the following acceptance test.

i) Downloading Meter Data from the Meter(s) to laptop via admin Optical port.
ii) Downloading meter data to DLMS test suite or AMR system through Ethernet port as per IS15959 part 1 for each type of meter and firmware version.
iii) Downloading Meter Data from the Meter(s) to PC via RS 485 port.
iv) Functioning of Time synchronization.
v). Communication of meter data on predefined frequency as well as "on- demand basis" (instantaneous parameters, billing parameters etc.)
vi). MD reset/time synchronization from Testing Software application. All the required software components for receiving meter data and converting this meter data into suitable formats will have to be provided by the bidders.

Normal Sampling Plan: -For acceptance test, meters shall be selected at random from the lot as per Clause 12.2.2.1 (ANNEX E) of IS 14697, depending upon the size of the lot and the desired acceptance quantity level.

12.11Deleted

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13 Deleted

14 Guarantee

14.1. The Three Phase, four wire, HT/EHT, CT/PT operated ABT Meter should be guaranteed for a minimum period of five years from the date of Commissioning.
14.2. The meter found defective within the above guarantee period shall be replaced by the supplier free of cost, within three months from the date of receipt of intimation.
14.3. The intimation shall be either by hand or by registered post / courier with proper acknowledgment.
14.4. If defective meters are not replaced within the specified period as above, the RPIPL shall recover the cost from Performance guarantee.

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17.Approved Make

A. ABT Meter

Sl. No.	Particulars	Approved Make
01	SAMAST Compliant ABT Meter	Secure Meters/ Schneider Electric India

b. Component Specification.

Sl. No	Component	Requirement	Approved Makes
1	Measurement or computing chips	the measurement or computing chips used in the Meter should be Surface mount type.	USA: Analog Devices, Cyrus Logic, Atmel, Philips Dallas, ST Germany: Siemens Texas Japan: NEC Freescale Renesas
2	Memory chips	The memory chips should not be affected by external parameters like sparking, high voltage spikes or electrostatic discharges. Meter shall have non-volatile memory (NVM). No other type of memory shall be used for data recording and programming. (The life of the NVM is highest) There shall be security isolation between metering circuit, communication circuit, and power circuit.	USA: Atmel, National Semiconductors, Texas Instruments, Philips, ST, Japan: Hitachi Germany: Siemens Renesas ADESTO ROHM

3	Display modules	a) The display modules should be well protected from the external UV radiations. b) The display visibility should be sufficient to read the Meter mounted at height of 0.5 to 2m from ground level (refer 3.2 d for Viewing angle). The LCD and ToD facility display should have wide viewing angle of 45 degree to 60 degree cone up to 1m distance c) The construction of the modules should be such that the displayed quantity should not be disturbed with the life of display (PIN Type). d) It should be trans-reflective HTN (HTN – Hyper Twisted Nematic (120°)) or STN (STN – Super Twisted Nematic (160°)) type industrial grade with extended temperature range.	Japan: Hitachi, Sony. L&G, TEXAS RCL Yeboo Truly Semi Conductors: HongKong/China
4	Electronic components	The active & passive components should be of the surface mount type & are to be handled & soldered by the state of art assembly processes.	USA: National Semiconductors, Atmel, Philips, Texas Instruments, BC Component Japan : Hitachi, Oki, AVZ Samsung Japan : Panasonic RICOH Everlite Agillent MITSUBISHI, AVX Germany : Vishay

5	Battery	The RTC battery and battery for display in the case of power failure should be separate. Only non-rechargeable battery should be used for RTC and rechargeable battery for all other functionalities.	USA : Maxell Japan,Indonesia : Panasonic,Sony, Germany : Varta France : Saft Elegance Vitzro Tekcell EVE Mitsubishi

Note: If item not mentioned in the above is used, evidence of supply of the component to other Utilities may be submitted.

B. TECHNICAL SPECIFICATION FOR METERING CUBICLE

Sl. No.	Particulars	Details
1	Construction	Outdoor weather proof type metering cubicle as per KSEB Ltd required standard made out of made out of 14SWG CRCA Sheet and powder coated with RAL 7035 Shade, Outdoor Duty, Dust and Vermin Proof, Double Door on front & back side & glazed door at front, suitable for Cable Entry at bottom. The metering cubicle shall be fixed at a height of 1m from the ground level with rain shield and complaint to IS: 1477212000 and its latest amendments. The metering cubicle shall have provision for accommodating 2 nos ABT meters. The metering cubicle shall be provided with 5 nos Test Terminal Blocks , 6 nos of LT fuses, 2 no of voltage relay, 1 no. of Thermostat for Space Heater, 80W Strip Type Space Heater, 1ph 230V AC, 6A 1P 10KA "C" Type Miniature Circuit Breaker, PVC Wireways, MCB/Terminal Channel, Power & Control Wire, Terminals etc complete. The same cubicle shall have earthing, sealing and locking arrangement with a clear glass on the front door to check the readings without breakirig the seal.
2	IP Classification	IP:-65 or above

ANNEXURE 1A

GUARANTEED TECHNICAL PARAMETERS

Note: Bidders should duly fill the GTP with specific value/details. Please avoid mentioning 'complied/yes' as far as possible.

Sl. No	PARTICULARS	DESCRIPTION	REMARKS
1	Type	3 phase.4 wire CT/PT operated EHT, static 0.2S class (for both Active and Reactive Energy), DLMS compliant, AMR compatible Availability Based Tariff Meter.	
	Make	Secure Meters/ Schneider Electric India	
2	Standard/s to which the meter conforms	As per clause 2.0 of Annexure-1	
3	Guarantee Period from the date of first Installation	5 years from the date of commissioning	
4	Rated Voltage:	110 V between phases and 110/√ 3 between phase and neutral	
5	Basic Current(Ib):	1 A for EHT	
6	Maximum Current(Imax)	200 % of Ib	
7	Frequency Range:	50 Hz ± 5%	
8	Power Factor Range	Zero to UPF lag and lead	
9	ISI mark		
10	Minimum Starting Current	0.1% Ib	
11	Accuracy class for kWh and kVARh	0.2 S	
12	Test Output device	As per clause 6.5.4 of Annexure-1	
13	Operation indicator	As per clause 6.5.4 of Annexure-1	
14	Power consumption in voltage and current circuit	Voltage circuit maximum 1 W and 4 VA per phase Current circuit Maximum 1 VA per phase	
15	Limits of error at all Power factor of unity/0.5 at multiples of rated currents	As per IS 14697	

16	Change in error due to	Variation in frequency	As per IS 14697	
		Variation in Temperature	As per IS 14697	
		Variation in Voltage	As per IS 14697	
		Variation in current	As per IS 14697	
		Due to single phase current	As per IS 14697	
17	One minute Power frequency withstand Voltage		As per IS 14697	
18	Compliant to EMC & EMI		As per CBIP 325	
19	Basic insulation level: Impulse withstand Voltage		As per clause 5.8.6 of Annexure-1	
20	Current rating of the terminal		200 % of Ib continuous	
21	External Magnetic Influence		As per CBIP 325	
22	Maximum size of cable, which can be connected at terminals			
23	Terminals to be bi-metallic and suitable for Aluminium / Copper Cables			
24	Integration period for MD that is programmed and can be programmed		30 minutes and shall be able to be changed to 5/15 minutes integration period if required	
25	Whether programming of MD integration Block interval period can be done in the field using CMRI or Laptop			
26	If so, whether the facilities are having adequate security and if so, detail it.			
27	Whether phase wise kVAR ,KW & KVA, overall pf, MD reset count, frequency, time & date, RTC battery health parameters are available in data collection?			

28	Terminal Block material		As per clause 6.7.2.5 of Annexure-1	
29	Material for meter base and cover and whether the cover is transparent		As per clause 6.7.1 of Annexure-1	
30	Material for terminal cover and whether the cover is transparent		As per clause 6.7.1 of Annexure-1	
31	Resistance to Heat and Fire		As per clause 6.7.1 of Annexure-1	
32	Details of meter case			
33	Degree of protection against dust and water		IP 51	
34	Details of alpha-numeric LCD display		As per clause 7.13 of Annexure-1	
35	Display parameters available in auto scroll mode and display time of each parameter		As per clause 7.13.6 of Annexure-1	
36	Display parameters available in manual scroll mode and display time of each parameter		As per clause 7.13.6 of Annexure-1	
37	High resolution display parameters		As per clause 7.13.6 of Annexure-1	
38	No. of digits in the display		Eight	
39	Tamper protection features	Voltage failure	As per clause 7.14 of Annexure-1	
		Current Unbalance	As per clause 7.14 of Annexure-1	
		Current missing/current open	As per clause 7.14 of Annexure-1	
		Current reversal	As per clause 7.14 of Annexure-1	
		Magnetic Logging	As per clause 7.14 of Annexure-1	
		Any other	As per clause 7.14 of Annexure-1	
40	Whether test output provided			
41	Meter & Terminal Cover sealing		As per clause 6.7.3 of Annexure-1	

42	Date of issue of Type Test Certificate/report		
43	Issuing authority of type test certificate/ reports		
44	Whether any changes in design from that type tested		
45	Whether all type tests were conducted and all are on same design		
46	Whether terminal cover is an extended transparent terminal cover		
47	Minimum clearance and creepage distance of the terminal block and those between the terminals and the surrounding parts	As per IS 14697	
48	Whether RTC is pre-programmed		
49	Life of RTC battery	10 years minimum	
50	Maximum drift of RTC per year	± 2 minutes	
51	Way of synchronization of Energy Meter and 'RTC'	As per clause 6.7.4.6 of Annexure-1	
52	Life of Battery for display parameters		
53	Whether meter terminals are marked		
54	Connection diagram is provided and whether it is a sticker?		
55	Name plate details and whether meter serial number and bar code is given in the name plate	As per clause 9.0 of Annexure-1	
56	Meter base and cover jointing method	Ultra-sonic/chemical welding	
57	Method adopted to transform voltage and current to the desired vlow values		
58	Details of factory programmable parameters	As per IS 15959	

59	Details of user programmable parameters	As per IS 15959	
60	Data communication facilities	As per clause 7.12 and Clause 10.0	
61	Whether All necessary software for down loading the information through CMRI/Laptop will be supplied without any additional cost?		
62	Whether all communication ports as mentioned in the specification are provided.	As per clause 7.12 of Annexure-1	
63	Average frequency computation period	As per clause 7.2 of Annexure-1	
64	Data storage – 65 days minimum for load survey and billing data for minimum 1 year provided.		
65	Whether reprogramming of time block from 15 minutes to 5 minutes will be provided at site without any additional cost.		
66	Whether it is capable communicating with HES over IS 15959 part 1.		
67	Whether offered meters is in compliance with cyber security norms as per Cl. 23 A)		
68	Whether offered meters is in compliance with PPP-MII norms as per Cl. 23 B)		
69	Whether communication testing software Manufacturer provided Base Computer Software (BCS) free of cost provided.		

BID FORMS AND OTHER FORMS

Form-1

DETAILS OF THE BIDDER

Name of the Work: Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering system at Rubber Park, Irapuram		
1. Details of the Bidder		
1.1	Name of the Firm/Bidder	
1.2	Address	
	Tel. No. (O)	
	Mob. No	
	E mail	
1.3	Nature of Firm (Note: - 1. Tick whichever is applicable. 2. Attach certified documentary proof)	Proprietary
		Partnership
		Company (Private Limited)
		Company (Public Limited)
1.4	Details of proprietor/ partners/Directors.	
1.5	Name of the responsible contact person:	
	Tel No. (O)	
	Mobile No.	
1.6	Date & No of Registration of Firm/company(Attach documentary proof)	
1.7	Permanent Account Number	
1.8	GST registration Number	
1.9	Bank Details (A/c. No, Bank Name, Branch & IFS Code)	

Signature of the Bidder

FORM 2

FORM OF BID

Note: Bidders are required to furnish this form filling all the blank spaces.

To Date:

The Managing Director
Rubber Park India (P) Ltd.,
2A,Kautileeyam,
Valayanchirangara P.O
Ernakulam- Pin : 683 556.

Dear Sir,

Sub: Tender for the **"Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram"**
Ref: Tender No. **RP/E/T-04/R-1/2025-26** dated 06.01.2026

I/We have read and examined the notice inviting tender, General Conditions, Special Conditions, Technical Specifications in or referred to in the Tender Documents, the receipt of which is hereby duly acknowledged, I/We, the undersigned, offer to supply and deliver goods in conformity with the technical specifications and the terms and conditions as mentioned in or referred to in the said tender documents for the sum as quoted in the Priced part or such other sums as may be ascertained in accordance with the supply and made part of this bid and the said conditions.

My/Our acceptance to all the conditions of the tender document in this bid form shall persist over any other terms and conditions, deviations, if any, given in my/our bid.

I/We undertake, if my/our bid is accepted, to commence and complete delivery of all the goods and services including supply as specified in the tender document, from the date of receipt of your Purchase Order/Letter of Award.

If my/our bid is accepted, I/We will submit the required Performance Guarantee as per the terms and conditions for the due performance of the contract.

I/We agree to abide by this bid for the period of 30 days from the date fixed

for bid opening and it shall remain binding upon me/us and may be accepted at any time before the expiration of that period. However, if required, validity of tender period shall be extended by the bidder, on the request of the tendering authority, without any additional financial commitments.

Until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and your Letter of Intent shall constitute a binding contract between me/us.

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

I/We understand that you are not bound to accept the lowest or any bid you may receive.

Dated this.....day of …….. 2025

(Signature)

For and on behalf of .....

FORM 3
ACCEPTANCE LETTER

To

The Managing Director
Rubber Park India (P) Ltd.,
2A, Kautileeyam,
Valayanchirangara P.O
Ernakulam- Pin : 683 556

Dear sir,

I/We hereby unconditionally accept the tender terms and conditions in itsentirety for Tender No. **RP/E/T-04/R-1/2025-26** dated 06.01.2026 for the "**Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram".**

Date: Signature of the bidder
Place: (With Seal)

FORM 4
DECLARATION FORM

To

The Managing Director,
Rubber Park India (P) Ltd.,
2A, Kautileeyam,
Valayanchirangara P.O
Ernakulam - Pin : 683 556

DECLARATION

I/We hereby declare that I/We read and understood that Terms & Conditions of contract, Schedule of Requirements etc. for the Tender No . **RP/E/T-04/R-1/2025-26** dated 06.01.2026, for the work of **"Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram"**, and hereby agree to abide by them.

In token of I/We also understand that otherwise this tender is liable to be rejected.

I/We hereby confirm that only the relevant entries asked for, have been made within the Tender documents issued to us. I/We also confirm that in the event of any entry in this tender document, other than the relevant entry, shall make this tender invalid.

I/We hereby confirm that I/We am/are authorized to sign on behalf of the bidder.

Date:

Signature of the bidder
(with Seal)

FORM-5

ARTICLES OF AGREEMENT

Agreement No. RP/……./2025-26 /…..

This AGREEMENT made on this the …th day of2024, by and between **Rubber Park India (P) Ltd.**, a joint venture of Kerala Industrial Infrastructure Development Corporation (KINFRA) and Rubber Board, incorporated as a company under the Indian Companies Act. 1956, having its registered office at 2 A, "Kautileeyam", Rubber Park, Valayanchirangara P.O, Ernakulam Dist., Kerala Pin : 683 556, duly authorized and represented by its **Managing Director**, Sri. ……..., son of ……. , aged ….(…) years, residing at…….. …. …… …… ……. ……..……, PAN …….. (herein after referred to as 'RPIPL'), which expression shall include, unless repugnant to the context, be deemed to include its successors and permitted assigns on the ONE PART.

And

M/s.……, having its registered office at……..…… ……., …… , ……..…..,, Pin:……..……, duly authorized and represented by its ……..,Sri. ……, son of Sri……..., aged …….(…….) years, residing at ……", …… P O, ……Dist., Pin:……., Aadhaar No. …….. …….. .(hereinafter referred to as the "CONTRACTOR" which expression shall, unless repugnant to the context, be deemed to include his legal representatives, executors administrators, successors and permitted assigns) of the OTHER PART.

WHEREAS, RPIPL is desirous of carrying out "……" hereinafter referred as '**Work**'. WHEREAS, RPIPL has invited competitive item rate tender, on ……..... …… bidders participated in the tender and the bids were opened on ……2024

On evaluation, it was found that M/s. ……..., …… has quoted the lowest amount of Rs……/- (Rupees ……..….only). Accordingly, RPIPL has issued Purchase order No. ……., dated …… awarding the contract to M/s. ……., …… for the " ……." at his agreed contract amount of Rs……/- (Rupees ……..only). The applicable GST will be paid extra.

AND WHEREAS Contractor has agreed to execute upon and subject to the conditions set forth herein and to the conditions set forth in the special conditions, unit rate, specifications / technical specifications & in the schedule of quantities and conditions of contract (all of which are collectively hereinafter to as the said conditions and forming part and parcel of this

articles of agreement) the supply/work shown upon the said drawings and/or described in the said specifications and included in the said schedule of quantities at the respective rates therein set forth amounting to the sum as therein arrived at or such other sum as shall become payable there under (hereinafter referred to as the "said Contract amount").

The following documents and correspondence also form part of this agreement as if they are specifically incorporated herein.

1. Tender document No. ……., dated ……
2. Purchase order No ….., dated …….

NOW THEREFORE THIS PRESENTS WITNESSED AND IT IS MUTUALLY AGREED AS FOLLOWS:

1. In consideration of the said contract amount to be paid at the time and in the manner set forth in the conditions, the Contractor shall upon and subject to the conditions of the contract, execute and complete the supply in the described specifications and schedule of quantities at the agreed rates.

2. The "RPIPL" shall pay the Contractor, the Contract Amount or such other sum that may become payable at times and in the manner hereinafter specified in the said conditions.

3. The said conditions thereto shall be read and constructed as forming part of this agreement and the parties hereto shall respectively abide by and submit themselves to the said conditions and perform the agreement on their part respectively in the said conditions.

4. The documents mentioned herein above shall form the basis of this contract.

5. The Contractor hereby agrees and undertakes the perform and fulfil all the conditions and obligations connected with the execution of the said contract viz.- "…. ……. …….. ……. ……. ".

6. The Contractor has furnished 05% of contract value as performance guarantee amounting to Rs. ……./-, by DD No……., dated …….. for the due performance of obligation of the Contractor under the contract.

7. The “RPIPL” reserves to them the right of omitting any items of work/supply from the contract or having portions of the same carried out by themselves or through any other agency without prejudice to the right of “RPIPL” under this contract.

8. The Contractor shall indemnify and keep indemnified “RPIPL” against all losses and claims for injuries or damages to any person or property whatsoever which may raise out of or in connection with the supply/ work and against all claims, demands, proceedings, damages, cost, charges, expenses whatsoever in respect thereof in relation thereto.

9. It is specifically understood that the Contractor shall not be eligible for or entitled to claim any amount except to the extent allowed or due under the terms of this contract. It should be understood that on no account, the rates once agreed to and quoted in the tender, shall be revised.

10. It is specifically understood that supply/work should be completed in all respects within the stipulated time. Any delay in completing the project in time will attract compensation as per tender condition.

11. The Period of Completion for this supply is 15 days from ……. (ie on …….).

12. Liquidated damages - @1% per week or part of the week on delay to be computed as per the Tender conditions for supply, installation, testing and commissioning and a Penalty at the rate of Rs. 1000/- (Rupees Thousand only) per incident for failure to rectify the air conditioners within 24 hours from reporting of complaint during the AMC Period.

13. The rates quoted by the Contractor shall be firm and there shall be no upward revision of the rates quoted by the Contractor for any reasons whatsoever.

14. It is specifically understood that the any part of the supply/work is not completed in time as agreed by the contractor it will be carried out at the risk and cost of the contractor.

15. The several parts of the contract have been read by the Contractor and fully understood by the Contractor.

16. This agreement has deemed to have come into force from and has validity

till actual completion of supply, as per tender condition plus defects liability/warrantee period of 12 months.

17. All disputes arising out of or in any way connected with this agreement shall be deemed to have arisen in Kerala and only courts in Perumbavoor shall have jurisdiction to determine the same.

In witness WHEREOF the Managing Director, Rubber Park India (P) Ltd and the CONTRACTOR have set their hands on the day and year above written.

Signed by …… Managing Director, Rubber Park India (P) Ltd.	Signed by …….. …….., M/s. …….

In the presence of witnesses:

FORM 6: - Form for the Financial Proposal

The **Managing Director**
Rubber Park India (P) Ltd, Irapuram

Sir,

Sub: **"Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram"**

I/We, the undersigned, offer to carry out the Work of **"Supply, installation, testing, and commissioning of SAMAST compliant ABT meters and associated outdoor metering cubicle, including dismantling of the existing ABT metering cubicle at Rubber Park, Irapuram"** in accordance with your Tender No. . **RP/E/T-04/R-1/2025-26** dated 06.01.2026. The amount quoted is inclusive of the cost of all parameters linked with the supply/work and all the taxes are cleanly spelt excluding GST.

Sl. No.	Description	Qty	Unit Rate (Rs.)	Total Amount excluding GST (Rs.)
1	Supply of SAMAST compliant ABT meter as per the technical specification at Rubber Park, Irapuram, inclusive of cost of transportation, packing, freight and insurance charges, all overheads, contingencies, profits, taxes (ie. Income tax etc.), duties/ levies, loading and unloading charges, etc. for delivery of the equipment at Rubber Park India (P) Ltd, Irapuram. (Exclusive of GST)	02 No.		
2	Supply of Outdoor metering cubicle as per the technical specification inclusive of cost of transportation, packing, freight and insurance charges, all overheads, contingencies, profits, taxes (ie. Income tax etc.), duties/ levies, loading and unloading charges, etc. for delivery of the equipment at Rubber Park India (P) Ltd, Irapuram. (Exclusive of GST)	01 No.		
3	Erection and Installation of Outdoor metering cubicle on the existing foundation including the installation of 2 Nos of ABT Meters (Main & Check) and modifications if any complete as per the direction of Engineer in Charge at Rubber Park India (P) Ltd, Irapuram. (Exclusive of GST)	01 No.		
4	Dismantling of the existing Outdoor metering cubicle including the Meter and shift to store with proper accounting of all the materials. (Exclusive of GST)	01 No.		
Total Amount (Rs. in Figures):				
Total Amount (Rs. In words):				

I/We have read and understood all the terms & conditions attached to this application and agree to abide by it.

Date: Yours faithfully,

Signature:

Name:

For Office Use

1. *Scorings:*

2. *Overwriting:*

3. Corrections:

Date: Signature of the person opening the Tender

Witness: 1. Name: Signature:

List of Documents to be submitted in sealed Envelope:

1. Copy of **A grade electrical contractor having EHT license** issued by Kerala State Electricity Licensing Board if applicable, in support of the eligibility criteria specified in Sl. No.01 (a).
2. The bidders other than OEM and A grade electrical contractor shall submit proof of authorized dealer/agent/ distributor/channel partner of the OEM, in support of the eligibility criteria specified in Sl. No.01 (a).
3. The bidders should submit the copy of GST registration.
4. The bidders should submit the tender document duly filled and signed on all pages.
5. The bidders should submit the DD or payment receipt for EMD and Tender fee.

** END OF DOCUMENT**