1. Modifications with respect to RfP

S. No.	Page/ clause no.	Clause as per RFP	Modified Clause
1	**Single Phase 5-30A/10-60A meter:** 1. Page 122 of 435, Sr No. 3, 2. Annexure A, Page 267 of 435, Sr.No.3	Current Rating: 5-30A or 10-60A	Current Rating: 5-30A
2	**3 Phase 10-60A/20-100A meter:** **1.** Page 126 of 435, Sr.No.3 2. Annexure B, Page 280 of 435, Sr.No.3	Current Rating: 10-60A / 20-100A	Current Rating: 10-60A
3	1. **Single Phase meter:** Page 277 of 435 **2. 3 Phase meter:** Page 285 of 435 **3. LTCT meter:** Page 290 of 435 **Tamper table:** **Neutral Disturbance restoration:**	Voltage <115% of Vref Current > 10% Ib AND Frequency>47Hz **OR** Frequency<**52Hz**	Voltage <115% of Vref Current > 10% Ib AND Frequency>47Hz **AND** Frequency<**53Hz**
4	1. **Single Phase meter:** Page 277 of 435 **2. 3 Phase meter:** Page 285 of 435 **3. LTCT meter:** Page 290 of 435 **Tamper table:** **Neutral Disturbance restoration:**	Voltage >145% of Vref, Current >10% Ib **OR** Frequency < 47 Hz **OR** Frequency > 53 Hz **OR** DC voltage / signal/ pulse/ chopped signal injection	Voltage >145% of Vref, Current >10% Ib **AND** Frequency < 47 Hz **AND** Frequency > 53 Hz **AND** DC voltage / signal/ pulse/ chopped signal injection

S. No.	Page/ clause no.	Clause as per RFP	Modified Clause
5	Annexure- T Page:346	13. Tender sample: Bidders are required to manufacture 05 sample seals of each colour as per the Utility specification and submit (non-returnable) the sample along with bid for approval. These samples to be submitted in Meter Testing Lab & intimated to Utility. The tender sample seals shall be provided with trademark and logo of firm on front side & month and year of manufacturing on back side of the female part of the seal. The offer without samples shall be out rightly rejected and the offer shall not be considered. The samples seals shall be tested as per the specifications, either in Utility's laboratory or at third party govt. approved laboratory, as per the discretion of Utility. The tender sample seals not conforming to the specifications shall be straight war rejected and accordingly, their offer will not be considered for further evaluation.	*This Clause is deleted*
6	**1. Form 21: Data Requirement Sheet** a) Single Phase Whole Current Meter, Page- 122 b) Three Phase Whole Current Meter, Page- 126 **2. ANNEXURE A (Other Specifications)** Single Phase Whole Current Meter, Page-267 **3. ANNEXURE B (Other Specifications)** Three Phase Whole Current Meter, Page-280	4. Category: UC1 28. Connect Disconnect: UC1 (As per IS 16444 part 1)	4. Category: UC1 or better 28. Connect Disconnect: UC1 or better (As per IS 16444 part 1)
7	Section-6 Project Requirement, Point 9.2.5.2 Sample Routine & Acceptance Tests for Smart Meters, Page-252	ii. In addition to the above, the utility reserves the right to carry out accuracy tests, in line with the above guidelines, in their own Meter testing Laboratory for each lot. The sample size for such test would be 100% of the smart meters of each lot.	ii. In addition to the above, the utility reserves the right to carry out accuracy tests, in line with the above guidelines, in their own Meter testing Laboratory for each lot. The sample size for such test would be 100% of the smart meters of each lot. A**tleast a stock of 1 lakh smart meters will be given to Utility, as a buffer stock, atleast 30 days prior to installation schedule, to ensure completion of meter testing in time.**

S. No.	Page/ clause no.	Clause as per RFP	Modified Clause
8	APPENDIX- A.1 TAMPER CONDITIONS FOR SINGLE PHASE METER, Page-277		**New Condition Added** *Please Refer Point 4*
9	APPENDIX- B.1 TAMPER CONDITIONS FOR THREE PHASE WHOLE CURRENT METER, Page-284		**New Condition Added** *Please Refer Point 5*
10	APPENDIX- C.1 TAMPER CONDITIONS FOR THREE PHASE LTCT SMART METERS, Page-289		**New Condition Added** *Please Refer Point 6*
11	Section 6 Project Requirement, 1.4 Brief Scope of Work, D, Page-166	D. Consumer indexing on de-novo basis for contiguous electrical locations in the selected AMI Project Area along with its regular updates during contract period as per Clause 4 of this Section;	D. Consumer indexing on de-novo basis for i. Contiguous electrical locations in the selected AMI Project Area along with its regular updates during contract period as per Clause 4 of this Section. **ii. Non-contiguous electrical locations , i.e., Consumer indexing with DTs on de-novo basis along with its regular updates during contract period as per Clause 4 of this Section; and feeder to DT indexing on de-novo basis for all DTs in along with its regular updates during contract period as per Clause 4 of this Section."** ***(Reference to Addendum issued by REC dated 28.09.2022 vide Letter No: REC/PMD/AMISP/2022-23/270)***
12	Section 6 Project Requirement, **2.4 Meter Data Management system (MDM), Page 181**	The key use cases to be enabled by AMISP are provided below. Please note that these are illustrative list of use cases only and is not an exhaustive list. Further please note that all IS Standards shall be applicable	The key use cases to be enabled by AMISP **for contiguous electrical locations and non-contiguous electrical locations** are provided below. Please note that these are illustrative list of use cases only and is not an exhaustive list. Further please note that all IS Standards shall be applicable. ***(Reference to Addendum issued by REC dated 28.09.2022 vide Letter No: REC/PMD/AMISP/2022-23/270)***
13	Section 6 Project Requirement, **4 Consumer Indexing, Page 224**	Consumer indexing will be carried out/verified for the incoming population of smart meters for end-to-end metering at contiguous electrical locations in the selected AMI Project Area only. The responsibility for consumer indexing for	Consumer indexing will be carried out/verified for the incoming population of smart meters for end-to-end metering at contiguous electrical locations in the selected AMI Project Area **and for dispersed metering of DTs/**

S. No.	Page/ clause no.	Clause as per RFP	Modified Clause
		dispersed metering at non-contiguous electrical locations in the selected AMI Project Area shall lie with the Utility.	**Feeders at non-contiguous electrical locations in the selected AMI Project Area**. ***(Reference to Addendum issued by REC dated 28.09.2022 vide Letter No: REC/PMD/AMISP/2022-23/270)***
14	Section 6 Project Requirement, **4 Consumer Indexing,** **41. Scope of Work for CI** **Page 225**	m. AMISP shall be responsible for consumer indexing and energy accounting at the Distribution Transformer level as given in scope irrespective of the project area being Contiguous or Non-Contiguous.	**This Clause is deleted**
15	Section 6 Project Requirement, 6 **Analytics and Reports,** **6.2. Reporting Function** **Page 229**		**This Clause to be added below the table on list of reports** These reports shall be generated for both contiguous as well as non-contiguous electrical locations. However, for non-contiguous electrical locations, all relevant reports shall be generated as per scope except for those that are not technically feasible for example, consumer related reports like revenue analytics, load recording of consumers etc. ***(Reference to Addendum issued by REC dated 28.09.2022 vide Letter No: REC/PMD/AMISP/2022-23/270)***
16	Section 6 Project Requirement, **9.4 Site Acceptance Test (SAT)** **Page 257**		**A new table on minimum performance tests to be carried out as part of the Site Acceptance test (SAT) for Non-contiguous electrical locations shall be added below the existing use cases table** **The Table is added in Corrigendum Point 7** ***(Reference to Addendum issued by REC dated 28.09.2022 vide Letter No: REC/PMD/AMISP/2022-23/270)***
17	**Single Phase 5-30A / 10-60A meter:** Page 277 of 435 **3 Phase 10-60A/20-100A meter:** Page 284 of 435 **LTCT meter:** Page 289-290 of 435	Immunity up to 50 KV with NIC and logging of event >50 KV	Immunity up to 35 KV with NIC and logging of event >35 KV

S. No.	Page/ clause no.	Clause as per RFP	Modified Clause
18	Annexure T Specification of Polycarbonate Seals, Page- 347		*Attaching the seal specifications for PGVCL as a part of Annexure T.* *The same is incorporated as per Point 8 of the corrigendum.*
19	**Annexure M Additional Requirements/ Specifications, Polycarbonate Seals, Page-313**		*New Clause Added After Point Number 1* 2. Number of Seals to be supplied by AMISP to the Utility: Atleast 5 no. for 1-phase meter and atleast 8 no. for 3-phase meter including company seal. The seal shall be as per Utility's Technical specification and the Die will also be provided by the Utility. Sealing of terminal cover and SMC Box at the installation will be carried out by the Utility.
20	**Section 6 Project Requirement, 9.2.5.2 Sample Routine & Acceptance Tests for Smart Meters, Clause (d)**		*New Clause Added* d) iii) Meter testing to ensure the accuracy will be carried out by Discom at the Division laboratories, and for that, the meters should be supplied at least one month before the installation plan and unloaded at division store so as to test it, provide body seal, lab number, entry in ERP system and keeping record thereof as per the prevailing procedure of the Utility. If the Meter is unloaded and tested at one Division and it is required to be installed at other division, the Utility will carry out the transportation thereof at other division store (not at site). Audit sample testing shall be carried at NABL accredited Laboratories
21	**Section 6 Project Requirement, Clause 1.13, Page- 169**	1.13 Dismantling of existing Meters from site and their devolution to the Utility warehouse/lab/store with proper safety guidelines issued by the Utility/PIA while also meeting all quality & safety standards. After that existing meters shall be handed over to AMISP by the utility/PIA for buyback as per the guidelines of utility.	1.13 Dismantling of existing Meters from site and their devolution to the Utility warehouse/lab/store with proper safety guidelines issued by the Utility/PIA while also meeting all quality & safety standards.

Note: All consumers of Government, Commercial and Industrial categories of PGVCL irrespective of area saturation is to be covered on priority.

3. Pre-Bid Clarifications

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
1	**Single Phase 5-30A/10-60A meter:** Page 125 of 441 /Sr.No.38, Page 272 of 441/Annexure-A **3 Phase 10-60A/20-100A meter:** Page 129 of 441 /Sr.No.38, Page 285 of 441/Annexure-B	The Smart Meters shall be have a dedicated sealable slot for accommodating plug-in type bi - directional communication module which shall integrate the respective communication technology (RF / Cellular) with the Smart Meters, leading to easy adaptability for network interfaces **(WAN/NAN).**	Adaptability between NAN and WAN communication is possible through firmware up gradation. Kindly we request to accept the same.	RfP conditions shall prevail
2	**Single Phase 5-30A/10-60A meter:** Page 125 of 441 /Sr.No.38, Page 272 of 441/Annexure-A **3 Phase 10-60A/20-100A meter:** Page 129 of 441 /Sr.No.38, Page 285 of 441/Annexure-B	The Plug-In module shall be field hot swappable/ replaceable.	Kindly note that plug-in communication module shall be replaceable with same make. Kindly request to accept the same.	RfP conditions shall prevail
3	**Single Phase 5-30A/10-60A meter:** Page 271 of 441 /Annexure-A **3 Phase 10-60A/20-100A meter:** Page 283 of 441 /Annexure-B	In case of Cellular based meter, the meter shall accommodate SIM card/**e-SIM** of any service provider	Kindly accept physical SIM card of any service provider alternatively.	RfP conditions shall prevail
4	**Single Phase 5-30A/10-60A meter:** Page 271 of 441 /Annexure-A **3 Phase 10-60A/20-100A meter:** Page 283 of 441 /Annexure-B **LTCT meter:** Page 291 of 441 /Annexure-C	In case of Plug-in type communication module, the meter shall log communication module removal/**non-responsive** event with snapshot.	Kindly accept the 'Plug-in communication module removal' event as per corresponding part of IS 15959. 'Plug-in communication non-responsive' event is not supported by corresponding part of IS 15959 and same may be deleted from spec.	Plug-in Communication Module removal' Event shall be logged by Meter in line with DLMS IS 15959 Part 2 Standards.
5	**Single Phase 5-30A/10-60A meter:** Page 124 of 441 / Sr No. 3, page 271 of 441	Current Rating: 5-30A or 10-60A	Please confirm the current rating of the i.e. 5-30A OR 10-60A.	Current Rating: 5-30A
6	**3 Phase 10-60A/20-100A meter:** Page 128 of 441 / Sr.No.3, Page 284 of 441 /Annexure-B	Current Rating: 10-60A / 20-100A	Please confirm the current rating of the meter i.e. 10-60A OR 20-100A.	Current Rating: 10-60A

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
7	**LTCT Meter:** **Page 291 of 441 / Annexure-C**	In case of cellular based meter, the meter shall accommodate dual SIM Card / e-SIM of any service provider.	Kindly note that recurring cost will be more with two SIM cards. You are requested to accept single physical SIM card of any service provider alternatively.	RfP conditions shall prevail
8	**Single Phase 5-30A / 10-60A meter:** Page 281 of 441 **3 Phase 10-60A/20-100A meter:** Page 288 of 441 **LTCT meter:** Page 294 of 441	**Tamper table:** ESD/Jammer event requirement	Kindly note that meter shall be immune to ESD up to 35kV as per CBIP-325 & meter shall be immune to Jammer device. You are requested to accept the same and delete the event log requirement for both ESD and Jammer.	The meter should be immune for 35 kV ESD such that it suitably gets accommodated in existing SMC meter box and for the same the test will be performed by the DISCOM. The Bidder may take the sample of SMC box, as per the Utility specification, from the approved vendor of Utility, on its own cost.
9	**Single Phase 5-30A / 10-60A meter:** Page 282 of 441 **3 Phase 10-60A/20-100A meter:** Page 289 of 441 **LTCT meter:** Page 295 of 441	**Tamper table:** Microwave event requirement	Kindly note that for Microwave there is no limit and meter may be damaged within fraction of seconds. Microwave based testing may hazardous to person apply testing. You are requested to accept the same and delete the requirement.	RfP conditions shall prevail
10	**Single Phase 5-30A / 10-60A meter:** Page 281 of 441 **3 Phase 10-60A/20-100A meter:** Page 288 of 441 **LTCT meter:** Page 294 of 441	**Tamper table:** **Magnet event occurrence:** > 0.5 Tesla for permanent magnet OR DC magnetic induction > 0.2T OR AC magnetic induction > 10 mT **Magnet event restoration:** < 0.5 Tesla for permanent magnet OR DC magnetic induction < 0.2T or AC magnetic induction <10 mT	Kindly note that meter shall be immune at stray magnetic field as per CBIP-325. Meter may be either immune or run at Vref, Imax, and UPF in the event of logging of presence of abnormal magnetic induction with date & time as per CBIP-325. You are requested to accept the same	RfP conditions shall prevail, this tamper conditions will be govern by IS 15959 Part-1

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
11	**Single Phase 5-30A / 10-60A meter:** Page 281 of 441 **3 Phase 10-60A/20-100A meter:** Page 289 of 441 **LTCT meter:** Page 294 of 441	**Tamper table:** Neutral Disturbance restoration: Voltage <115% of Vref Current > 10% Ib AND **Frequency>47Hz OR Frequency<52Hz**	Kindly note that restoration condition should be 'Frequency>47Hz AND Frequency<52Hz'. Here mentioned 'OR' instead of 'AND' seems to be typographical error and the same may be amended accordingly.	Input taken and has been amended in Corrigendum accordingly
12	Page 179 of 441 / Clause 2.3 - HES	HES shall be developed on open platform based on distributed architecture for scalability without degradation of the performance using additional hardware.	We request to accept the HES System on windows based platform.	RfP conditions shall prevail
13	Page 179 of 441 / Clause 2.3 - HES	The scalability shall ensure the ability to handle applicable workloads including the following: a) 15 min for system metering and 30 min for consumer metering interval meter reads	This is not practicable to read meter data with a frequency of 15 min for system metering and 30 min for consumer metering interval meter reads. Please accept meter data reading frequency for every 4 hours alternatively.	RfP conditions shall prevail
14	Page 177 of 441 / Clause 2.3 - HES	The suggested functions of HES (not exhaustive) may be: On power up after installation, Smart Meter shall register itself automatically into the HES along with its metering profile. The HES shall store meter profile status by meter type, hardware & software versions, device IDs, logged in / logged out details etc.	We need to manually enter the details of all the Smart Meters into HES. Profile shall be downloaded automatically at the time of schedule. HES shall store meter profile status by meter type, software versions, device IDs. Hardware version, logged in / logged out requirements are not understood, the same may be clarified.	RfP conditions shall prevail
15	Page 181 of 441 / Clause 2.3 – HES – Configuration	Setting threshold limits for monitored parameters	Kindly provide the list of monitored parameters and please note that same parameter can be configured in HES only. However programmable parameters shall be in line with IS 15959 Part 2 or 3 depend on meter category.	The list will be shared post award of work, however programmable parameters shall be in line with IS 15959
16	Page 224 of 441 / Clause 3.2_HES Integration with Field Devices	HES should conform to IEC 61968-9 as well as support CIM 2.0 / MultiSpeak v3.0 standards.	We provide HES as per relevant IS 15959 and MIOS standards. Kindly request you to accept the same.	RfP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
17	Page 299 of 441 / Annexure F	General Requirement for Common pluggable communication module for Smart Meters.	Kindly accept manufacturers design instead of module design mentioned here under, considering the following drawbacks with change in module design. 1. Design evaluation shall be affected. 2. Cost reduction shall be affected. 3. Product reliability shall be affected. 4. Distractive tests compatibility may affect the module. 5. BIS certification for Smart Meter shall be provided for the complete unit including the communication module. If the communication module is changed then existing BIS shall not be valid. 6. No BIS standard exists for common communication module at present.	RfP conditions shall prevail
18	Page 164. Clause 1.4 B **"Brief Scope of Work".**	Supply and Installation of Distribution Box and laying of service cable from LT line to meter and from Meter to consumer premises, removal of existing cable.	The specifications of Distribution Box are not attached with technical specification. If it is required, kindly provide the same.	Supply and Installation of Distribution Box is not in the Scope of the bidder, However, the bidder has to inform for such requirement to the local office of DISCOM after survey and DISCOM will provide and replace.
19	Page 165. Clause 1.4 B (a) **"Brief Scope of Work".**	Supply and Installation of nx1 Cabinet boxes with requisite cabling wherever applicable is also under scope of Utility.	The specification of Cabinet Box is not attached with technical specification. If it is required, kindly provide the same.	Supply and Installation of Distribution Box is not in the Scope of the bidder, However, the bidder has to inform for such requirement to the local office of DISCOM after survey and DISCOM will provide and replace

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
20	Page 279. Appendix A.2	Single phase Whole Current meter SMC box drawing	In appendix only drawing of SMC meter box is attached, which is also very unclear. If SMC box is required then kindly provide technical specification of the SMC meter box with clear drawing.	The dimensions of SMC Boxes for meters is mentioned in Annexure M. The Drawings are attached attached again as a part of Corrigendum. Refer Point 3 of Corrigendum.
21	Page 287. Appendix B.2	3 phase Whole Current meter SMC box drawing	In appendix only drawing of SMC meter box is attached, which is also very unclear. If SMC box is required then kindly provide technical specification of the SMC meter box with clear drawing.	The dimensions of SMC Boxes for meters is mentioned in Annexure M. The Drawings will be attached again as a part of Corrigendum. Refer Point 3 of Corrigendum.
22	Page 292. Appendix C.2	3 phase LTCT meter SMC box drawing	In appendix only drawing of SMC meter box is attached, which is also very unclear. If SMC box is required then kindly provide technical specification of the SMC meter box with clear drawing.	The dimensions of SMC Boxes for meters is mentioned in Annexure M. The Drawings will be attached again as a part of Corrigendum. Refer Point 3 of Corrigendum.
23	Page 295-Annexure –F **General requirement for common pluggable communication module for Smart Meters.**	Thus in order to enable different communication modules to be used in the same meter, it is necessary to use a universal interface and a particular size irrespective of the choice of communication technology that defines the dimensions of the communication slot as well as physical placement and location of connectors	Every meter manufacturers have their own size and mounting arrangements of NIC module. The NIC module size, fixing arrangement and connection with the meter shall vary from different manufacturer to manufacturer. So, it shall be impossible to integrate/ interoperate the NIC module of various manufacturers unless otherwise it shall require NEW DEVELOPMENT of every meter manufacturer. Therefore we request to kindly delete the requirement.	RfP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
24	**Page no. 313** Annexure –M **Single phase whole current Smart meter** S.No. 3	Smart Meter size shall be such that to accommodate in the existing meter boxes having inner dimensions of **250 x 220 x 135 mm** and thickness of **1.5mm**	Since every meter manufacturer has its own size of meters therefore size of meter may vary according to the different manufacturers. We request you to kindly accept our 1P Smart Meter of size: 262mm x 161mm x 104mm approx. (With Terminal Cover). Accept in same SMC box sizes of 3P meter box 400 x 300 x 190 mm with thickness of 2mm kindly please confirm.	RfP conditions shall prevail
25	**Page no. 316** **Clause No. 2.1 "**Annexure –N **"Specifications of CT for LT-CT meters".**	Bore diameter of the CT shall not be less than 40 mm.	We request you to kindly accept the CT bore diameter as per manufacturer standards. Kindly accept the same.	RfP conditions shall prevail
26	**Page no. 316** **Clause No. 2.1 "**Annexure –N **"Specifications of CT for LT-CT**	Ring type CTs shall have suitable clamp to fix the CT to panel Board, wherever required.	We request you kindly reconfirm your requirement as these CTs have installed in SMC Box or panel board. Kindly clarify the same.	RfP conditions shall prevail
27	Page 274. S.No.49 **"*Inspection*"**	**Allen Screw head size (Terminal Screw)**	Alternatively, Slotted headless Grub/Set Screws for Terminal screws may also be accepted. Kindly confirm the acceptability of the same.	RfP conditions shall prevail
28	**Page no. 313** Annexure –M **Three Phase LT-CT Operated Smart Meter for Consumers and DT** S.No. 3	Smart Meter size shall be such that to accommodate in the existing meter boxes having inner dimensions of 810 x 350 x 230 mm with thickness of 2mm as shown in drawing attached in Appendix C.2 to Annexure-C	We request you to kindly reconsider your meter box size requirement as CT ratings above 400/5A will be difficult to accommodate in the existing meter Box (810x350x230 mm). Therefore we request you to kindly consider meter box of size is 900x350x230mm for CT ratings above 400/5A, Kindly confirm same.	RfP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
29	Annexure A.1 Page:277 of 435	Immunity upto 50kV with NIC and logging of event >50kV	Immunity can be provided upto 35kV as per IS. Request accept the same.	The meter should be immune for 35 KV ESD such that it suitably gets accommodate in existing SMC meter box and for the same the test will be performed by the DISCOM. The Bidder may take the sample of SMC box, as per the Utility specification, from the approved vendor of Utility, on its own cost.
30	Annexure A.1 Page:278 of 435	Any higher frequency magnetic waves, micro waves > 10 mT	This is non-standard requirement. Hence performance of meter cannot be guaranteed. Request accept the same.	RFP conditions shall prevail, this tamper condition shall be as per IS 15959 part 1
31	Annexure B Page:280 of 435	Technical specifications for Whole Current A.C. Three Phase Smart Energy Meter Current Rating: 10-60 A / 20-100 A	Request you accept 10-100A rating as well.	Current Rating: 10-60A
32	Annexure M Page:312 of 435	**Smart Meter size shall be such that to accommodate in the existing meter boxes having inner dimensions of 250 x 220 x 135 mm and thickness of 2mm as Appendix-A.2 to Annexure-A (Technical Specifications for Whole Current A.C. Single Phase Smart Energy Meter)**	This requirement is restrictive, as Smart meter dimensions are specific to each manufacturer and is not feasible to design exactly as per required dimensions. Request remove the requirement. OR	RfP conditions shall prevail
33	Annexure M Page:312 of 435	Smart Meter size shall be such that to accommodate in the meter boxes having inner dimensions of 400 x 300 x 190 mm with thickness of 2mm as Appendix-B.2 to Annexure-B (Technical Specifications for Whole Current A.C. Three Phase Smart Energy Meter)	Please give relaxation for the minimum clearance between meter & meter box. Request you accept minimum clearance of 20 mm.	The meter should be immune for 35 kV ESD such that it suitably gets accommodated in existing SMC meter box and for the same the test will be performed by the DISCOM

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
34	Section 6, 2.1 Page:170 of 437	The General requirements for common pluggable module for smart meters as per Annexure F envisage a universal interface and a particular size irrespective of the choice of communication technology that defines the dimensions of the communication slot as well as physical placement and location of connectors. The same shall be adopted in all smart meters mandatorily for deployment w.e.f. 1 Jan 2023 or one year after BIS certification, whichever is later, and BIS certification taken accordingly as per IS 16444 for the same.	Smart Meters have been designed by the manufacturers uniquely to provide the desired performance. The communication module requirements vary w.r.t their operating voltage, power requirement and other features including physical dimensions and pin configurations for each type of communication technology & their make. Hence specifying a common dimension for Communication module is restrictive. The requirement of common pluggable module with a universal interface as given in the tender specifications does not allow innovation in design & manufacture of Smart Meters as it restricts/limits the efforts in cost reduction of the Meters. Also, once the meters are redesigned, type tests are to be carried out in third party laboratories due to which timelines for deployment will be delayed for minimum 12 months. In view of these multiple reasons, we request you to remove this requirement of common dimensions/pin-out details of the communication module to ensure hassle- free rollout of the AMI solution.	RFP conditions shall prevail.
35	Annexure F Page:294 of 435	General requirement for common pluggable communication module for Smart Meters		
36	Form 21: Data Requirement Sheet Page:122	4. Category UC1	UC1 are the basic requirements as defined in the IEC 62052 part 11. Kindly amend UC1 or better.	UC1 or better will be considered

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
37	Form 21: Data Requirement Sheet Page:123	The Smart Meters shall be have a dedicated sealable slot for accommodating plug-in type bi - directional communication module which shall integrate the respective communication technology (RF/ Cellular) with the Smart Meters, leading to easy adaptability for network interfaces (WAN/NAN).The Plug-In module shall be field swappable/ replaceable.	Kindly specify Cellular as 4G fall back 2G	RFP conditions shall prevail
38	Form 21: Data Requirement Sheet Page:123	Plug-in Communication Module - The Smart Meters shall be have a dedicated sealable slot for accommodating plug-in type bi -directional communication module which shall integrate the respective communication technology (RF / Cellular) with the Smart Meters, leading to easy adaptability for network interfaces (WAN //NAN).The Plug-In module shall be field swappable/ replaceable.	Kindly note that adaptability between NAN and WAN Communication is possible through Firmware up gradation. Kindly accept the same.	RFP conditions shall prevail
39	Three Phase LT-CT Operated Smart Meter Page:130	Time of Use-(In case of net-meter both export & import parameters to be measured)	As per IS 15959:part3 export Time of Use parameters are not required. Kindly clarify.	RFP conditions shall prevail
40	Three Phase LT-CT Operated Smart Meter Page:130	CT Ratio	CT Ratio and quantity and type of CT required for LTCT /DT Meters	RFP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
41	2.4.6 Page:164	Off-line recharge centres.	Kindly provide details for recharge centres building, Electricity, Manpower in whose scope. Can we provide the offline recharge through Mobile phone app	Complete Kiosk setup for recharges and other services will be in the scope of AMSIP, The Kiosk Centres has to be setup in the existing payment centres of the utility and details of same will be shared after award of LOA.
42	1.4 Page:165	I b. All the associated necessary civil work for dismantling existing structures / equipment and to put in place the new structures / equipment, shall be carried by the AMISP.	We believe this will be in scope of the utility.	Civil Work related to DCU/Router/Access points is in the scope of the bidder. Wherever SMC Boxes are required to be dismantled/installed, the Utility will arrange the civil work for the same and the bidder will only have to install the meter there.
43	2. Supply, installation, integration, testing and commissioning of: Page:170	The Network Interface Card (NIC) / Communication Module should be integrated with at least 3 (three) makes of meters in India to enable the respective meters to seamlessly integrate with proposed HES and/or MDM thus enabling interoperability of the system.	It may not be feasible to Integrate / Interoperate the NIC Module of various Manufacturers unless otherwise it shall require NEW DEVELOPMENT of every Meter Manufacturer. Therefore, we request to kindly remove this requirement and accept Manufacturers Design instead of Module Design	RFP conditions shall prevail
44	2. Supply, installation, integration, testing and commissioning of: Page:170	In future, it would be AMISP's responsibility to integrate new meter in consultation with Utility or facilitate integration of other application as per the approach paper submitted under the Project Implementation Plan.	Kindly amend this clause as-Any new meter in consultation with utility or facilitate integration as per mutually discussed and agreed techno commercial terms in line with the approach paper…	As per clause 3.1 of Section 6 of RFP, "The MDM will act as the bridge to integrate the AMI system with other utility IT/OT systems. These IT/OT systems may be already existing or those which the Utility have planned"

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
45	2.2.1 Page:171	A suitable NMS shall be built to monitor the performance of the communication network round the clock. The NMS shall provide viewing of all the networking elements deployed at site and enable configuration & parameterization of the networking devices and the nodes. In case of public network such as cellular, the web-based portal (for example Open Network platform) should be provided to have the network view at location of installed devices. The portal shall have connectivity & subscription management	We understand, In case of cellular SIM management (Activation / Deactivation / N/w availability etc.) Provided by Airtel / Vodafone/ etc. Via APIs which will be integrated in HES. Kindly confirm. It has been seen that telecom companies do not share these details.	RFP conditions shall prevail
46	2.3.1 Page:178	HES shall facilitate configuration of following minimum AMI parameters: j) Number of auto reconnection attempt k) Time interval between auto reconnection attempts l) Lock out period for endpoint (meter) relay p) Setting threshold limits for monitored parameters	The configuration should be in-line with IS 16444(Part1 & Part 2) & IS 15959 (Part 2 & 3) requirements.	RFP conditions shall prevail
47	2.3.3.2 Page:179	HES shall have feature to send email/SMS notification of configured alarms & events to its users.	Kindly remove this requirement because email/SMS notification send feature should be in MDMS.	RFP conditions shall prevail
48	NOMC Page:199	Required clarity on connectivity type from cloud Based MDM/HES to NOMC and Billing Centre	Kindly confirm. We assume that internet will be available at utility premises for the VPN connectivity of DC and DR.	RFP conditions shall prevail
49	2.6.2 for NOMC hardware Page:200	Regarding Bandwidth of Link at NOMC	Kindly amend 2 Gbps to required bandwidth availability at respective NOMC.	RFP conditions shall prevail
50	2.6.2 Page:201	Regarding Firewall Configuration	As the connectivity between NOMC and HES/ MDMS cloud shall be on Private MPLS network, hence we suggest entry level UTM including higher concurrent inbound/ outbound concurrent connections.	Bidder's understanding is not in line with RfP , please refer RfP for more details

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
51	2.6.2 Minimum technical requirements for NOMC hardware Page:201	Regarding Router Ports	It should be as per system requirement hence request you to amend the clause as " Internet router with required no's with 1 Gbps LAN ports and redundant at least 2 Gbps internet ports supporting IPsec, and SSLVPN capability"	RFP conditions shall prevail
52	2.7.7 cyber security Page:218	Regarding Scanning tool of cyber security	Request you to amend as "Network & O/S scanning tools shall be provided to identify vulnerability & security threats	RFP conditions shall prevail
53	Annexure A Page:269	The Smart Meters shall have a dedicated sealable slot for accommodating plug-in type bi -directional communication module which shall integrate the respective communication technology (RF/PLC/ Cellular) with the Smart Meters, leading to easy adaptability for network interfaces (WAN/NAN).The Plug-In module shall be field swappable/ replaceable.	Kindly amend that "The Plug-In module shall be field swappable/ replaceable with same type Communication technology and meter."	RFP conditions shall prevail
54	Inspection Page:274	Allen Screw head size	Kindly accept the (-) head type screws. Which is more suitable.	RFP conditions shall prevail
55	APPENDIX- A.1 Page:277	Diode at input terminal	Request to delete this requirement. If consumer is able to tamper the input terminal then they can bypass the entire meter.	RFP conditions shall prevail
56	APPENDIX- A.1 Page:278	Persistence time of occurrence and restoration Magnet = 0 Hr 2 Min 0 sec (MAG)	Kindly amend the Persistence time of occurrence and restoration in Magnet test to 10 sec.	RFP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
57	APPENDIX- A.1 Page:278	Threshold Value for Occurrence of Events > 0.5 Tesla for permanent magnet OR DC magnetic induction > 0.2T OR AC magnetic induction > 10 mT Threshold Value for Restoration of Events < 0.5 Tesla for permanent magnet OR DC magnetic induction < 0.2T or AC magnetic induction <10 mT	Kindly amend the event stamp with occurrence and restoration to as per CBIP 325.	RFP conditions shall prevail. It shall be as per IS 15959 part 1
58	APPENDIX- A.1 Page:278	c) Condition no. 38 of Annexure I (Timer test): The timer operation duration on/off time for 30 seconds with constant current for 30 min.	Request you to kindly provide the Annexure me and its test criteria. Condition no. 38 of Annexure I (Timer test) are not given in the tender specification.	The Condition No 38 added as a part of Corrigendum. Kindly refer Point 4 of Corrigendum.
59	APPENDIX- A.1 Page:278	Voltage >145% of Vref, Current >10% Ib OR Frequency < 47 Hz OR Frequency > 53 Hz OR DC voltage / signal/ pulse/ chopped signal injection	During ND tampering conditions meter will record energy as per Vref, actual current and Unity power factor and accuracy of the meter will be within +/- 4%. Kindly confirm.	RFP conditions shall prevail
60	APPENDIX- A.1 Page:278	Restoration Threshold of the neutral disturbance tamper condition - Voltage <115% of Vref Current > 10% Ib AND Frequency>47Hz OR Frequency<53Hz	Kindly consider abnormal frequency as 52 Hz instead of 53 Hz.	The Frequency range will be updated to Frequency>47Hz AND Frequency<53Hz in the Corrigendum
61	APPENDIX- A.1 Page:279	Microwave immediate (record only 1 event on first application & only one event for next 1min) Threshold Value for Occurrence of Events - Any higher frequency magnetic waves, micro waves > 10 mT	Microwave tamper is not applicable as CBIP325 Kindly remove this tamper.	RFP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
62	Annexure B - Technical Specifications for Whole Current A.C. Three Phase Smart Energy Meter Page:280	Communication The meter shall log the removal of the plug-in type communication module removal / non responsive event with snapshot.	Kindly accept the 'Plug-in Communication Module Removal' Event as per DLMS IS 15959 Part 2 Standard. 'Plug-in Communication nonresponsive' Event is not supported by DLMS IS 15959 Part 2 Standard and same may kindly be removed from the specifications.	RFP conditions shall prevail
63	Section 4 , Form 21: Data requirement Sheet Single Phase and 3P (20-100)A Page:281	UC1	Kindly consider UC1 / UC2 relay type category.	UCI1 or better will be considered
64	General & Construction al requirements Page:284	Meter Box:-The Meter Box if required, would be provided as per requirement of the utility/ purchaser and the material of the Meter Box should be such that it does not hamper communications.	We believe this is in scope of utility.	Yes, it is in the Scope of Utility.
65	C.2 Page:288	In case of cellular based meter, the meter shall accommodate dual SIM Card / e-SIM of any service provider.	Kindly amend the clause-... In case of cellular based meter, the meter shall accommodate Single SIM only option also instead of /dual SIM Card / e-SIM of any service provider/multi network or dual-profile SIM….	RFP conditions shall prevail
66	C.3 Other Specifications Page:290	The requisite power supply requirement (AC to DC auxiliary supply/ charger) for the DI should be made internal to the smart meter itself. In case the same is not feasible to be provided, bidder should provide external power supply with following specifications. d) Input voltage: 63.5V AC e) Operating voltage: 12V DC f) Contact Rating: 5A Continuous @30V DC, 25A for 3	Kindly amend d) Input voltage: 240V AC for LTCT Meter. f) Kindly Clarify requirement f) Contact Rating: 5A Continuous @30V DC, 25A for 3 sec. How to use in field. 02 Nos. DI is sufficient for LTCT Meters kindly amend the same.	RFP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
		sec No. of DIs - 04 Nos. DI for 4V(DC), 10 mA		
67	APPENDIX- B.2 Page:291	ESD/JAMMER = immediate (record only 1event on first application & only one event for next 1min)	Kindly amend the ESD/Jammer tamper as per CBIP-325.	The meter should be immune for 35 kV ESD such that it suitably gets accommodated in existing SMC meter box and for the same the test will be performed by the DISCOM. The Bidder may take the sample of SMC box, as per the Utility specification, from the approved vendor of Utility, on its own cost.
68	Annexure F Page:296	General requirement for common pluggable communication module for Smart Meters	Every Meter Manufacturers have their own Size and Mounting arrangements of NIC Module. The NIC Module Size, fixing arrangement and connection with the Meter shall vary from different Manufacturer to Manufacturer. (single meter & three Phase meter) So, it may not be feasible to Integrate / Interoperate the NIC Module of various Manufacturers unless otherwise it shall require NEW DEVELOPMENT of every Meter manufacturer. Therefore, we request to kindly remove this requirement and accept Manufacturers Design instead of Module Design mentioned here under, considering the following drawbacks with change in Module Design:	RFP conditions shall prevail
69	Part III Page:299	The following reference size may be adhered to irrespective of a single or multiple communication options provisioned on the same module. This standard form factor and dimensions will enable physical and functional interoperability with different makes of meters.	It may not be feasible to Integrate / Interoperate the NIC Module of various Manufacturers unless otherwise it shall require NEW DEVELOPMENT of every Meter Manufacturer. Therefore, we request to kindly remove this requirement and accept Manufacturers Design instead of Module Design	RFP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
70	Annexure M Specifications of CT for LT-CT meters Page:315	The CTs shall be of ring type and bar type as per site requirement.	Bar type CT is not suitable for DT transformer, kindly confirm Bar CT required for only SMC box. Kindly Also Provide CT Ratio.	The CTs shall be of ring type as per site requirement.
71	2. Type. Page:315	The secondary leads shall be terminated with Tinned Cooper rose contact terminals with arrangements for sealing purposes	Secondary terminals of the CT will be Brass Material	RFP conditions shall prevail
72	Annexure M Specifications of CT for LT-CT meters Page:316	Bore diameter of the CT shall not be less than 40 mm. Ring type CTs shall have suitable clamp to fix the CT to panel Board, wherever required.	We request you to kindly accept the CT Bore diameter as per Manufacturer Standards. & We request you kindly reconfirm your requirement as these CTs have installed in SMC Box or Panel Board. Kindly clarify the same.	RFP conditions shall prevail
73	GeM Page:	GeM procedure/Limitation	Price bid is to be uploaded 1st then only other documents can be uploaded. Where in metering /AMI Solution tender price always comes in the last. So request to check Possibility to change process - price in last.	As per GeM
74	GeM Page:	GeM procedure/Limitation---Size of uploaded documents	Only 5 or 7 folders can be uploaded having a size of 10 mb maximum. It means the total size is 50 Mb. Where our bid Size is minimum 500 Mb it can be even 1000	As per GeM
75	Annexure- T Page:344	13. Tender sample- Bidders are required to manufacture 05 sample seals of each colour as per the Utility specification…	Request to delete this requirement.	The Same has been amended in the Corrigendum

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
76	**Section 2. Eligibility Requirements** **8. Qualification Requirements** **2** - Page no. 18 & 19	Sole/ Lead Bidder/ any other Consortium Member must have experience of integration of head-end system with MDM on standard interfaces and data exchange models for at least 1,00,000 consumers / end points (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in the last 7 (seven) years which are in operation for atleast 1 (one) year. Or Sole/ Lead Bidder/ any other Consortium Member should have installed, integrated, tested, and commissioned control centre hardware (or on cloud) and application software for at least 2,00,000 endpoints (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in last 7 (seven) years which are in operation for at least 1 (one) year.	We observe that specific experience quantity is too high. As per REC SBD and Discoms like M.P., H.P, Maharashtra, J&K, Assam has prescribed only 20,000 meters, Hence we request you to amend the Specific Experience clause as per below: **Specific Experience:** Sole/ Lead Bidder/ any other Consortium Member must have experience of integration of head-end system with MDM on standard interfaces and data exchange models for at least 20,000 consumers / end points (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in the last 7 (seven) years which are in operation for at least 1 (one) year. **OR** Sole/ Lead Bidder/ any other Consortium Member should have installed, integrated, tested, and commissioned control centre hardware (or on cloud) and application software for at least 50,000 endpoints (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in last 7 (seven) years which are in operation for at least 1(one) year	RFP conditions shall prevail
77	**Section 4. Bidding Forms- Technical Proposal** **Page no. 73**	Form 1: List of Consortium Members/ Sub-Contractor(s)	Cellular communication options not provided in Form-1. Kindly incorporate the same and amend it accordingly.	RFP conditions shall prevail. The bidder may mention it in the Others option

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
78	**Section 4. Technical Proposal – Forms Page no. 150-151**	Form 22: Manufacturer Authorisation Form (MAF) Form 23: Format of Agreement to be entered by sub-contractors with the sole bidder / lead member of a Bidding Consortium	Can we submit FORM-22 (MAF) & FORM-23 (Sub-contractors) after award of contract or LOA.	Bidder has to submit the Document along with the Bid
79	**Section 5. Financial Proposal – Forms Page no. 151**	Form 23: Format of Agreement to be entered by sub-contractors with the sole bidder / lead member of a Bidding Consortium	We understand that Form 23 will be for Meter manufactures only. Kindly Confirm.	This Form shall prevail for all the subcontractors, who are eligible as per the GCC clause 17
80	**Section 6. Project Requirements 1.4 Brief Scope of Work Page no. 163**	B) Supply and Installation of Distribution Box and laying of service cable from LT line to meter and from Meter to consumer premises, removal of existing cable, if required, connection, taping, Laying of DT cables from DT through LTCT meters to LTDB/Fuse Box, wherever applicable will be done by utility, however information related to LT auxiliaries required for successful installation of smart meters need to be accessed by AMISP while carrying out detail survey during Consumer Indexing. The required quantity of LT auxiliaries shall be intimated in advance to the utility/ PIA atleast 15 days ahead of installation. Material, tools and other accessories (not covered in BoQ) required for dismantling, civil work and installation of the new meter, shall also be in the scope of AMISP. a) Supply and Installation of nx1 Cabinet boxes with requisite cabling wherever applicable is also under scope of Utility. However, the required quantity of LT auxiliaries shall be intimated in advance to	We understand that Supply and Installation of Distribution Box, nx1 Cabinet box along with other accessories and laying of service cable are in the Discom Scope. This will not be considered by bidder's scope. Kindly confirm pls.	Yes, it is in the Scope of Utility.
81			We understand that Supply and Installation of Distribution Box, nx1 Cabinet box along with other accessories and laying of service cable are in the Discom Scope. This will not be considered by bidder's scope. Kindly confirm pls. (or) Suppose it has to be done by bidder, then kindly provide technical specifications, drawings, BOM etc., for tendering purposes.	It is in the Scope of Utility.

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
		the utility/ PIA atleast 15 days ahead of installation.		
82	**GeM-Bidding Page no-1**	EMD Detail EMD Amount- Rs 60116170	Difference of amounts are mentioned, kindly clarify the EMD Amount for this tender.	The EMD shall be Rs. 165.05 Lacs, which is as per RFP Conditions
83	**PGVCL REP Page no-2**	EMD Fee-165.05 3Lacs		
84	Bidding documents, Agreement etc.,		Kindly provide the **order of sequence** for this AMISP Tender	Agreement with LOA shall be the legal biding document
85	Reverse Auction		Kindly notify Whether this reverse auction will be mandatory for all future REC AMISP Tenders or not?	E reverse auction shall be part of this Tender
86	Smart meters to be submitted to Utility		Kindly confirm whether all meters has to be delivered directly to Utility end or not? Kindly provide the delivery instructions of Smart meters for better understanding.	All meters have to be delivered to utility, the process flow map will be shared at the time of Project Planning
87	**Section 7. Contract Forms and conditions of contract** **14.Change Order** **14.1 Change Notes / Change Order to Alter Number of Meters to be Installed** **Page no-403**	Necessity of Change Notes arise due to change in the number of meters against the numbers agreed for the project. Negative variation is permissible only up to the "Installation Milestone". Positive variation is however possible at any time during the Contract Period. The variation allowed cannot be more than the minimum and maximum numbers, as specified in SCC.	On perusal of this said clause we understand that the positive variation of 30% of quantity should also be installed after completion of implementation phase (i.e. 27 Month) till the completion of contract period (i. e. 120 Months). On completion of the contractual period that is 120 months, we observed that the 93 months service charge (EMI's) which has to be received by AMISP for the aforesaid installed meters shall not be fulfilled. In other words, On	RFP Conditions Shall Prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
88			completion of contract period (i.e. 120 months), the AMISP will not receive the payment of 93 EMI's per meter for the meters installed after implementation phase. Hence we request you to issue an amendment and or clarify as follows. 1) The contract period shall not get extended beyond 10 years irrespective of negative or positive variation. 2) Further the modalities of payments for positive variation shall be incorporated in such a way that entire balance EMI shall be provided at the end of contact period, i.e. 10 Years. For your kind reference, a similar consideration adopted by MP DISCOM is enclosed herewith. "Payment against new service connection: In case of Smart meter installed and commissioned during New Service Connection by AMISP, it shall be executed as per regulations prescribed by the Discom and regulatory commission as applicable. It shall be the sole responsibility of the AMISP to integrate the new meter installed with the MDM and generate reports as per the SLA. The payment to the AMISP in this case shall be supplementary Invoice amount = i. Onetime payment of INR 1500 plus GST as applicable ii. Hundred Percent (100%) of Balance CAPEX EMI and OPEX EMI of	

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
			remaining contract period for a month – EMI of each Meter shall start from the next month on completion of following activities – • Meter should be installed prior to 15th day of that month. • Installation & Commissioning at Site. • Commissioning of Meters in HES & Employer‘s MDM • Availability of monthly (Billing + Load Survey) data through AMR method in existing MDM of Employer and providing the Data in mutually agreed format by integration to Billing system and / or MDM solution of Employer. iii. Balance CAPEX EMI remains unpaid out of 90 EMIs due to completion of contract period, shall be paid fully at the end of the contract period at Net Present Value (NPV) after discounting at rate of 12% per year. This will be part of one-time Supplementary Bill which shall be paid along with the AMISP Monthly Fee against New Service Connection for the immediately succeeding month. The next month payment of the new Smart meter installed, commissioned and integrated with Discom MDM shall be as per AMISP monthly charges.“	
89	**Section 7. Contract Forms and conditions of contract** **14.Change Order** **14.2 Change Request/Change**	14.2.3 Based on the agreed cost estimate, the PIA shall raise a “Change Order”. The AMISP shall undertake the development of the New Requirements only after	It is kindly requested to consider that, the provision related to clause 14.1.5 shall not apply to agreed cost for change order. The cost estimate for	RFP conditions shall prevail.

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
	Order for New/Enhancements to Software Applications Page no-404	securing express consent of the PIA. If the consent of PIA is not received, then the change will not be carried out. The change will be implemented in accordance to the agreed cost, effort, and schedule by the AMISP and the change will be verified by the PIA on completion of implementation. 14.1.5 An institutional mechanism will be set up for taking decisions regarding requests for changes or New Requirements. The Utility will set up a Change Control Committee with members from the Utility and the AMISP. If it is unable to reach an agreement, the decision of the Utility will be final.	change order should be mutually agreed, failing which it should be settled through dispute resolution mechanism, for that a suitable provision should be incorporated in the tender.	
90	**Annexure 1 SCC Page no-419**		Please Clarify the objective of differential period of 10 months.	This is an illustration. The Bidder to prepare the plan as per RFP Requirement
91	**Section 7. Contract Forms and conditions of contract** **14.Change Order** **14.2 Change Request/Change Order for New/Enhancements to Software Applications Page no-404**	14.2.1 At any point in time the PIA/Utility may raise a Change Request to include New Requirements in the AMI system application. This Change Request shall include the following: • Identification and documentation of the need for the change • Functional details of the change • Information related to initiator, initiation date and • Priority of the change	Kindly clarify the cost incurred towards the **increased software requirement** due to additional meter added after installation milestone, since Additional manpower prices only covered in price schedule.	Bidder needs to envisage the scalability of software requirement keeping in mind the quantity variation already indicated in the RfP document
92	12.2 (Section 4 Bidding Forms Technical Proposal)	(Section 4 Bidding Forms Technical Proposal)	The Bid Security amount mentioned as per this clause is Rs 165.05 lacs however in the Gem Portal/Gem Document it is mentioned as Rs.80274290. Kindly confirm the EMD/Bid Security amount.	The EMD shall be Rs. 165.05Lacs, which is as per RFP Conditions

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
93	Clause 8.1 Sl. no.2 Page: 18	Sole/ Lead Bidder/ any other Consortium Member must have experience of integration of head-end system with MDM on standard interfaces and data exchange models for at least 1,00,000 consumers / end points (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in the last 7 (seven) years which are in operation for atleast 1 (one) year.	The experience sought here **(for HES-MDM Integration)** is for at least **1,00,000 consumers / end points (cumulatively)** in the last 7 years, and **2,00,000 endpoints (cumulatively) for control centre hardware and software application-** which is not in line with the SBD V4 guidelines. We request you to kindly amend the clause as pe SBD V4 i.e ***"20,000 consumers/end points"*** for HES and MDM integration *and* ***"50,000 consumers/ endpoints"*** for control center hardware and application software	RFP Conditions shall prevail
94	A1 Option 1 Page: 21	Should have manufactured and supplied minimum 1,00,000 nos. of Smart meters (cumulative) on proposed communication technology in Indian/Global Power Distribution Utility in the last 7 (seven) years.	We request you to kindly modify the clause as "Should have manufactured and supplied minimum **50,000 nos** of Smart meters (cumulative) on proposed communication technology in Indian/Global Power Distribution Utility in the last 7 (seven) years." This relaxation will allow maximum participation and competitive response.	RFP Conditions shall prevail
95	Section 2, Clause 8.1 Point 3 Page:19	The Sole/ Lead Bidder should have a valid pre-qualification and technical empanelment certificate for the required communication technology, issued by REC and approved by the committee constituted vide the letter issued by the Ministry of Power F.No.14/02/2021-UR&SI-II- Part(1) -(E-258136) dt. 10th January 2022, at the time of bid submission.	As Per REC Empanelment Clause 14 of the **document Request for Empanelment of REC**, In addition to the applicant, the holding company and the subsidiary companies (As per provision of the companies act 2013) would also be automatically empanelled. Please confirm the holding company & Subsidiary companies shall be considered as Lead bidder.	The holding company & Subsidiary companies also shall be considered empanelled

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
96	Section 5 Financial proposal 152 & 153	Three phase LT-CT operated Smart Meter (without Net- Metering) – Consumer Meter with CTs, control cables, without DI provisions Meter Box and Back-end IT Infra with associated works and requisite no. of polycarbonate seal	Please confirm whether CTs are included in the supply for LT & HT Meters	CTs will be in the scope of Bidder
97	Section 3 Point 26 Page:52	Award of Contract	Please clarify whether the contract shall be awarded to a single Bidder or Multiple bidders	Single bidder
98	Tender Disclaimer Page:2	In RFP EMD Fee : 165.05 Lacs In Bid Notice, EMD amount is mentioned as Rs 60116170	Please clarify	The EMD shall be Rs.165.0Lacs, which is as per RFP Conditions

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
99	**Page: 19 Section 2,** **Clause 8.1 Technical requirement** **2. Sole/ Lead Bidder/ any other Consortium Member must have experience of integration of head-end system with MDM on standard interfaces and data exchange models for at least 1,00,000 consumers / end points (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in the last 7 (seven) years which are in operation for at least 1 (one) year.** **Or** **Sole/ Lead Bidder/ any other Consortium Member should have installed, integrated, tested, and commissioned control center hardware (or on cloud) and application software for at least 2,00,000 endpoints (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in last 7 (seven) years which are in operation for at least 1(one) year**	Request to amend the clause to consider experience of sub-contractor Suggested amendment **Technical requirement** 2. Sole/ Lead Bidder/ any other Consortium Member/Sub-contractor or their Licensor must have experience of integration of head-end system with MDM on standard interfaces and data exchange models for at least 1,00,000 consumers / end points (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in the last 7 (seven) years Or Sole/ Lead Bidder/ any other Consortium Member should have installed, integrated, tested, and commissioned control center hardware (or on cloud) and application software for at least 2,00,000 endpoints (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in last 7 (seven) years	HE's solution providers are niche technology firms who will ideally not be interested to be part of consortium and rather will work as Sub-contractors to the bidder. Further, in cases they would have had tie-ups with Global OEMs who license their application. Hence, we request to consider local / global experience of sub-contractor for qualification of the bidder. However, the bidder as a firm commitment must have authorization from the subcontractor and issue a Letter of Intent (LoI) issued to the subcontractor with respect to this particular tender which needs to be provided with the bid document.	RFP conditions shall prevail.

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
100	**Page: 19 Section 2,** **Clause 8.1 Technical requirement** **2. Sole/ Lead Bidder/ any other Consortium Member must have experience of integration of head-end system with MDM on standard interfaces and data exchange models for at least 1,00,000 consumers / end points (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in the last 7 (seven) years which are in operation for at least 1 (one) year.** **Or** **Sole/ Lead Bidder/ any other Consortium Member should have installed, integrated, tested, and commissioned control center hardware (or on cloud) and application software for at least 2,00,000 endpoints (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in last 7 (seven) years which are in operation for at least 1(one) year**	Suggested amendment **Technical requirement** 2. Sole/ Lead Bidder/ any other Consortium Member/Sub-contractor or their Licensor must have experience of integration of head-end system with MDM on standard interfaces and data exchange models for at least 1,00,000 consumers / end points (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in the last 7 (seven) years Or Sole/ Lead Bidder/ any other Consortium Member should have installed, integrated, tested, and commissioned control center hardware (or on cloud) and application software for at least 2,00,000 endpoints (cumulatively) in an Indian/ Global Utility (power/ water/ natural gas/ telecom) in last 7 (seven) years. Which are in operation for at least 1(one) year.	Due to pandemic, the projects have been delayed in FY 2021-22 hence, we request you to accept the completion certificates issued by the clients/purchaser and delete the requirement of 1 (one) year operational certificate. This would also encourage other bidders for larger participation in the tender.	RFP conditions shall prevail.

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
101	**Page: 20 Section 2, Clause 8.1 Technical requirements** **4. The Sole/ Lead Bidder should have a valid pre-qualification and technical empanelment certificate for the required communication technology, issued by REC and approved by the committee constituted vide the letter issued by the Ministry of Power F.No.14/02/2021-UR&SI-II-Part(1)-(E-258136) dt. 10th January 2022, at the time of bid submission.**	Suggested amended clause is as mentioned below The Sole/ Lead Bidder/ Consortium / Subcontractor should have a valid pre-qualification. The bidder must submit a declaration mentioning that the bidder / member of consortium/Subcontractor has successfully participated in the empanelment process of REC and will submit the certificate approved by the committee constituted vide the letter issued by the Ministry of Power F.No.14/02/2021-UR&SI-II-Part(1)-(E-258136) dt. 10th January 2022 before the award of LoA	We request amendment of the clause as tests for many AMISPs are yet to be done and very few AMISPs might have received certificates by due date of submission of this bid	RFP conditions shall prevail.

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
102	**Page: 388 Section 7, Clause 10.1 10. Intellectual Property All Intellectual Property Rights in all material (including but not limited to all Source code, Object code, records, reports, designs, application configurations, data and written material, products, specifications, reports, drawings and other documents), which have been newly created and developed by the AMISP solely during the performance of Related Services and for the purposes of inter-alia use or sub-license of such services under this Contract, shall be the property of the AMISP. The AMISP undertakes to disclose all such material, which have been newly created and developed by the AMISP solely during the performance of Related Services and for the purposes of inter-alia use or sub-license of such services under this Contract, to the Utility. The AMISP hereby grants to Utility a perpetual, non-exclusive, non-transferable, irrevocable, royalty-free license to use all material disclosed to the Utility under the Contract. Nothing contained herein shall be construed as transferring ownership of any Intellectual Property Right from the AMISP to the Utility.**	Suggested amended clause is as mentioned below All Intellectual Property Rights in all material (including but not limited to all Source code, Object code, records, reports, designs, application configurations, data and written material, products, specifications, reports, drawings and other documents), which have been newly created and developed by the AMISP solely during the performance of Related Services and for the purposes of inter-alia use or sub-license of such services under this Contract, shall be the property of the AMISP. The AMISP undertakes to disclose all such material, which have been newly created and developed by the AMISP solely during the performance of Related Services and for the purposes of inter-alia use or sub-license of such services under this Contract, to the Utility. Nothing contained herein shall be construed as transferring ownership of any Intellectual Property Right from the AMISP to the Utility.	We request to amend the clause. The procurement being done is based on DBFOOT model for which subscription model is suitable.	RFP conditions shall prevail.

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
103	**Section 6** **Clause 2.7.4.4**	The System should support exchange of data from utility's computerized billing & collection, consumer indexing and asset mapping systems residing at different servers.	Integration with third party can be done through rest-APIs which is essential for billing system to support. As the prepaid metering system has to be implemented, there shall be prepaid application installed at the collection centres as well. Please clarify, whether separate hardware like computers will be provided for prepaid billing over the counter OR Prepaid billing application will be installed on same system of utility. This will impact the budgetary quotation for the said tender	Prepaid billing application will be installed on same system of utility at billing counters. However, in addition, the bidder is required to set up Prepaid recharge Kiosk as per RFP in line with Clause 1.2, A(b) of Section 6
104	**Section 6** **Clause 2.6.2 Page 200**	Minimum Technical Requirements for NOMC Hardware i) 2 Gbps internet connectivity	We request you to kindly share the details of location of NOMC for assessing the feasibility and access.	Physical link delivery at NOMC location might incur significant cost and hence clarity on tentative location be shared with bidders.
105	2.7.3 – Cloud Service Providers		Request you to consider predictive autoscaling functionality. Predictive scaling can help you scale faster by launching capacity in advance of forecasted load, compared to using only dynamic scaling, which is reactive in nature. Predictive scaling can also potentially save you money by helping you avoid the need to overprovision capacity.	RFP conditions shall prevail
106	2.7.3 – Cloud Service Providers		Proof of Concept Testing – In a lab environment we request you to consider POC Testing of the entire quantity of meters through simulation, thereby ensuring success of project at field and compliance to SLA.	Empanelment with REC is requirement of this Project, which is done only after POC. Hence, POC is not required at this stage

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
107	2.7.3 – Cloud Service Providers		We request you to consider the functionality, CSP should be able to provide managed database services like MySQL, Postgres, Oracle, MariaDB.	RFP conditions shall prevail
108	Page 163, Section 1 -Overview of scope of work	Overview of the AMISP Scope of Work	As the scope of this tender is very huge we request you to split the entire package into various geographical packages, by doing so REC and PGVCL will get more competitive bids. To add on by doing so the timelines of work completion mentioned in tender can be easily met.	RFP conditions shall prevail.
109	Page 122 section 5 ; form 21 ; point 1	1 phase -Current rating 5-30 A or 10-60 A	We suggest inclusion of 5-60 Amp variant for 1 phase meters, by providing wider current range utility can have only one variant for wide current range and inventory management becomes easy.	Current Rating: 5-30A
110	Page 123, section 5	Plug in communication	We suggest adherence to IS16444 part 1	RFP conditions shall prevail
111	; form 21; point 38	module – Meter shall have dedicated saleable to accommodate plug in module & module shall be field swappable/ replaceable	Shall be asked instead of plug in module. As bidder has to choose communication technology between Cellular and RF, therefore swappable module shall not be required.	RfP conditions shall prevail
112	Page 123, section 4; form 21; point 40	Last 3 months KW with date and time	We suggest as meter data has to be received to HES in frequency of every 30 minutes, display requirements of 3 MD shall be eliminated.	RfP conditions shall prevail
113	Page 126, section 4; form 21; point 1 (3 phase meters)	Current rating 10-60 A / 20-100A	We suggest inclusion of 10-100 Amp variant for 3 phase meters, by providing wider current range utility can have only one variant and inventory management shall be easy.	Current Rating: 10-60A

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
114	Page 164, section 6-project requirements; point 1.4 (d)	Meter Data Management system (MDM) with prepaid functionality (as a part of MDM or through a separate pre-payment application) and deployment on cloud as per Clause 2.4 of this Section;	MDM works as repository of all business data and responsible for integration of AMI system with other business functions of the utility like outage management, billing, call centre, etc. In addition, utility should remain owner of all consumer data and information. So as MDM has direct and maximum impact on business processes of the utility, it should be in the purview of Utility and the responsibility of AMISP shall be limited for Meter, communication, HES and integration with Metering Data Interface (MDI). Customer interface mobile app should be part of MDM scope and is not under scope of work of AMISP. AMISP shall design mobile app for managing field operations such as replacement of meter, new meter installation etc. & Inventory Management.	RfP conditions shall prevail
115	Page 166; Section 6 ;point 1.11	Exclusion from Scope of Work	We suggest addition of following line items from exclusion of work of AMISP vendor:- a. Meter Data Management system (MDM) with prepaid functionality and deployment on cloud as per Clause 2.4 of Schedule A of this Contract; b. Consumer portal and mobile application other than for managing field operations such as replacement of meter, new meter installation etc. & Inventory Management as per Clause 2.5 of Schedule A of this Contract; c. Network Operation cum Monitoring Centre (NOMC) with suitable backend communication	RfP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
			infrastructure, hardware and power supply as per Clause 2.6 of Schedule A; d. Installation & commissioning of service & power cables, distributions boxes etc. e. Any civil work	
116	Page 170; section 6; clause 2.1	Reference, the Smart Meter communication, it is envisaged that plug and play type communication modules shall be deployed in the smart meter, for any given communication technology. These modules shall be field-deployable, with corresponding communication interface modules being used in the DCU/Gateway or BTS of wide area network in accordance with the details provided in Annexure F. The General requirements for common---------- The Network Interface Card (NIC) / Communication Module should be integrated with at least 3 (three) makes of meters in India to enable the respective meters to seamlessly integrate with proposed HES and/or MDM thus enabling interoperability of the system	Plug and play type communication module will have associated implementation challenges like Project implementation cost & time, Post implementation warranty and guarantee conditions & composite field testing. Design & Pin configuration specified in Annexure E is very design specific requirement, Also, as AMISP is free for selection of any communication technology to meet the requirement on tender, hence there should not be restriction on size, pin configuration of communication module. Hence please delete the Annexure F. We recommend the Utility shall focus on end to end data delivery as per SLA and asset shall comply with relevant standard. Hence Request you to please delete the requirement.	RfP conditions shall prevail
117	Page 199; clause 2.6	Network Operation & Monitoring Centre: - The Network operation and monitoring center shall be created in the utility premises by the AMISP, for which suitable built-up space shall be provided by the utility.	We suggest that required system and manpower for NOMC shall be available at AMISP premises to meet SLA effectively. Required information/reports shall be shared with utility.	RfP conditions shall prevail
118	Page 200; clause 2.6.2	point no. c) Internet router with at least 48 no's 1 Gbps LAN ports and redundant at least 2 Gbps internet ports supporting IPsec, and SSLVPN capability	In NOMC hardware requirement, 48 port router is asked for which is not feasible as routers do not come with 48 ports. Thus with current hardware description we will be unable to supply	RFP Conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
			specified router. This need to be changed to "Internet router and redundant connectivity to operate NOMC smoothly. supporting IPsec, and SSLVPN capability"	
119	Page 215; clause 2.7.5	Display Generation, Management and Integration (Display Management and Reporting)	We suggest that for smoother functioning Display management and reporting should be in the scope of MDM and same should be handled by utility.	RfP conditions shall prevail
120	Page 217; clause 2.7.7	Cyber security – guidelines - Cyber security governance problems are unique as well as evolving therefore, they cannot be dealt with a traditional approach. For establishing secure and resilient Smart Meter systems, a standardized cybersecurity framework should be adopted by the AMISP in consultation with the Utility/PIA and relevant stakeholders. The key elements of the cyber security framework must include:	As Cyber security is a joint effort between AMISP & utility with equal responsibility and accountability. CEA is already working on cybersecurity guidelines for power system including smart metering. Therefore other general guidance documents referred in the clause should be taken for guiding principles only. We suggest keeping clause as - Cyber security governance problems are unique as well as evolving therefore, they cannot be dealt with a traditional approach. For establishing secure and resilient Smart Meter systems, a standardized cybersecurity framework should be adopted by ~~the~~ both AMISP and utility in consultation with ~~the Utility~~ each other and relevant stakeholders. The key elements of the cyber security framework ~~must~~ may include and take guidance from: We also suggest to review cyber security clause as per latest guidelines of GOI and CEA.	RfP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
121	Page 266, Annexure A	Technical Specifications for Whole Current A.C. Single Phase Smart Energy Meter:- Pre-paid features at MDM (as per IS 15959 Part 2)	We suggest editing clause as Pre-paid features at MDM /HES (as per IS 15959 Part 2) or at meter end and the same shall be mutually agreed between the supplier and buyer- There are many benefits of having prepaid features at meter end, as the meter can calculate the account balance on its own based on the real time consumption and tariff configured in it , thereby making the meter self-resilient and less dependent on WAN communication network	RfP conditions shall prevail
122	Page 278,APPENDIX A2 Single phase Whole Current meter SMC box drawing	Single phase Whole Current meter SMC box drawing	We request you to enhance the scope of supply and installation of meter boxes also in the scope of AMISP. Multiple coordination shall be required while managing installation of meters in pre-installed meter boxes as factors like ageing, wear and tear of meter boxes shall be encountered. As the size of smart meters shall be nearly 1.5 times the size of conventional energy meters because proper shielding for in build communication module has to be provided, we suggest that existing single phase may not be capable to accommodate various makes of energy meters.	RfP conditions shall prevail
123	Page 277, APPENDIX A1 Tampers in 1 phase meters & Page 287, APPENDIX B .1 Tampers 3 phase meters	Tamper conditions in 1 phase meters Tamper conditions in 3 phase meters	Since smart meters are capable to communicate with HES on a desired frequency of 15 minutes/ 30 minutes so detailed data analytics and validations including tamper segregation may be easily done at MDM end. We suggest that adherence to tampers	RfP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
			as per standard SBD documents or prevailing PGVCL standard tampers required in conventional energy meters.	
124		The Smart meter should have the provision of sensing digital inputs via DI (Digital Input) port provided at the terminal block. The smart meter should register the digital input(s) sensed, upon reaching respective threshold (configurable) and the event shall be communicated to HES. The OBIS code required for this shall be provided	We would like to propose, instead of DIDO, meter itself should have provision to take Smart decisions with calculating electrical parameters. Parameters like over loading, unbalance of phases could be measured by meter itself and should send the same to Data acquisition software. Also Since application & infrastructure at distribution transformer metering does not have auxiliary supply. So, in case of power off condition, DIDO would not suffice the requirement.	RfP conditions shall prevail
125	Section 6. Project Requirements; Clause 7.5: Meter Accuracy Tests Page:234	Table: Important Dates, Amounts and Other Details c) Last date for submission of e-bid Date: 23 November 2022	From our experiences drawn from similar opex based projects we submit that a detailed due diligence along with an area survey are essential elements of developing a bid strategy that ensures successful delivery of the project. Further in view of the ongoing Covid crisis and precautionary guidelines mandated by competent government authorities that limit the possibility of conducting such detailed due diligence of the area/ field survey, we request you to extend the Bid Deadline by 15 (fifteen) days. i.e., 08-12-2022	RfP conditions shall prevail

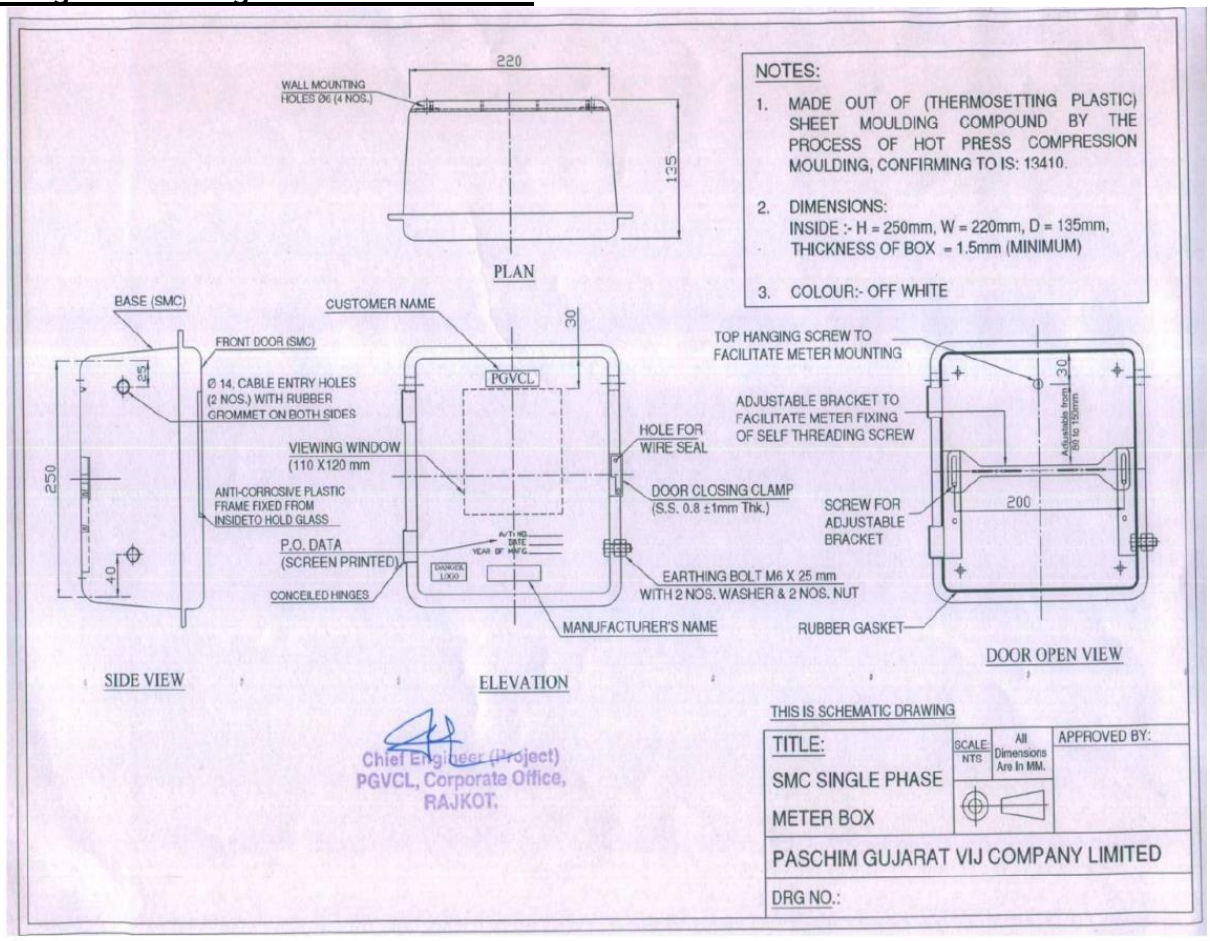
S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
126	Section 6. Project Requirements; Annexure O: Page:320	17.3 Bids shall be submitted electronically on e-tender web portal GeM/ by last date and time of submission of bids.	The size limit of uploading the technical proposal on GeM portal is only 20MB. It is practically impossible to upload the legible and readable technical proposal on GeM portal with size constraint of 20 MB. It is suggested to increase the uploading limit to 300 MB and accept the hard copy of the technical proposal in addition to uploading on GeM portal.	As per GeM
127	Section 6. Project Requirements; Clause 1.2	The AMI Project Area: Further, the bidder jointly with PIA team shall prepare field installation and roll-out strategy prioritizing the following: 1. Priority to Feeder Metering 2. Priority to DT metering 3. Commercial Consumers 4. Govt. Connections	The quantity of Feeder meters is not provided, Kindly share the details of feeder meters for prioritizing the Feeder metering during deployment.	Feeder meters are not in the scope of current assignment
128	Section 6. Project Requirements; Clause 1.4 Brief Scope of Work	B. Supply and Installation of Distribution Box and laying of service cable from LT line to meter and from Meter to consumer premises…….. …… Material, tools and other accessories (not covered in BoQ) required for dismantling, civil work and installation of the new meter, shall also be in the scope of AMISP.	Since installation of Distribution Box and laying of Service cable is being carried out by the utility, therefore it is recommended that the corresponding Civil work also must be taken care by utility.	RfP conditions shall prevail

S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
129	Section 6. Project Requirements; Clause 1.4 Brief Scope of Work	I (b). All the associated necessary civil work for dismantling existing structures / equipment and to put in place the new structures / equipment, shall be carried by the AMISP.	It is suggested that the civil works for dismantling the existing structures and put-up new structures should be carried out by Utility.	Civil Work related to DCU/Router/Access points/Gateway is in the scope of the bidder. Wherever SMC Boxes are required to be dismantled/installed, the Utility will arrange the civil work for the same and the bidder will only have to install the meter there.
130	Section 6. Project Requirements; Clause 2.1:	The Utility shall provide details of new locations, consumer premises, Distribution transformers, feeders, boundary locations, etc. in the Project Area, where meters are to be installed from time to time.	In addition to this, utility must provide list of towns/sub-division with number of category wise-consumers. It also requested that the utility should consider replacing the meters for all connections of that town/sub-division.	Details will be shared post award of work
131	Section 6. Project Requirements; Clause 7.5: Meter Accuracy Tests	In case a Consumer complains about meter accuracy post operational go-live and same isn't reasonably resolved through past consumption trend, Transformer Energy Audit, Check Meter (by Utility), etc. AMISP will be obliged to facilitate the meter testing. In this regard, AMISP shall handover the meter for testing to CPRI Lab/ Utility Lab/ NABL accredited Lab and install a temporary meter till the period of removal and replacing meter, if found inaccurate or reinstall if found accurate.	Since, all the smart meters are being tested and sealed by the utility. Therefore, the cost of testing the meters at CPRI Lab/ Utility Lab/ NABL accredited Lab shall be borne by the utility.	IN CASE OF CONSUMER COMPLAINT, the cost of testing the meter will be borne by the consumer.
132	Section 6. Project Requirements; Annexure O:	Specifications of 1-ph and 3-ph Polycarbonate Meter Box and 2:1 & 4:1 Meter Box for 1-ph Consumers	Since, the meter box are being provided by the utility the detailed drawings of the box should be appended with the tender document for designing the smart meters. It is recommended that the meter box provided is of Polycarbonate only because the SMC (Sheet Mould	The Drawings of meter boxes are attached in the Annexures and is again shared as a part of Corrigendum. RFP conditions shall Prevail

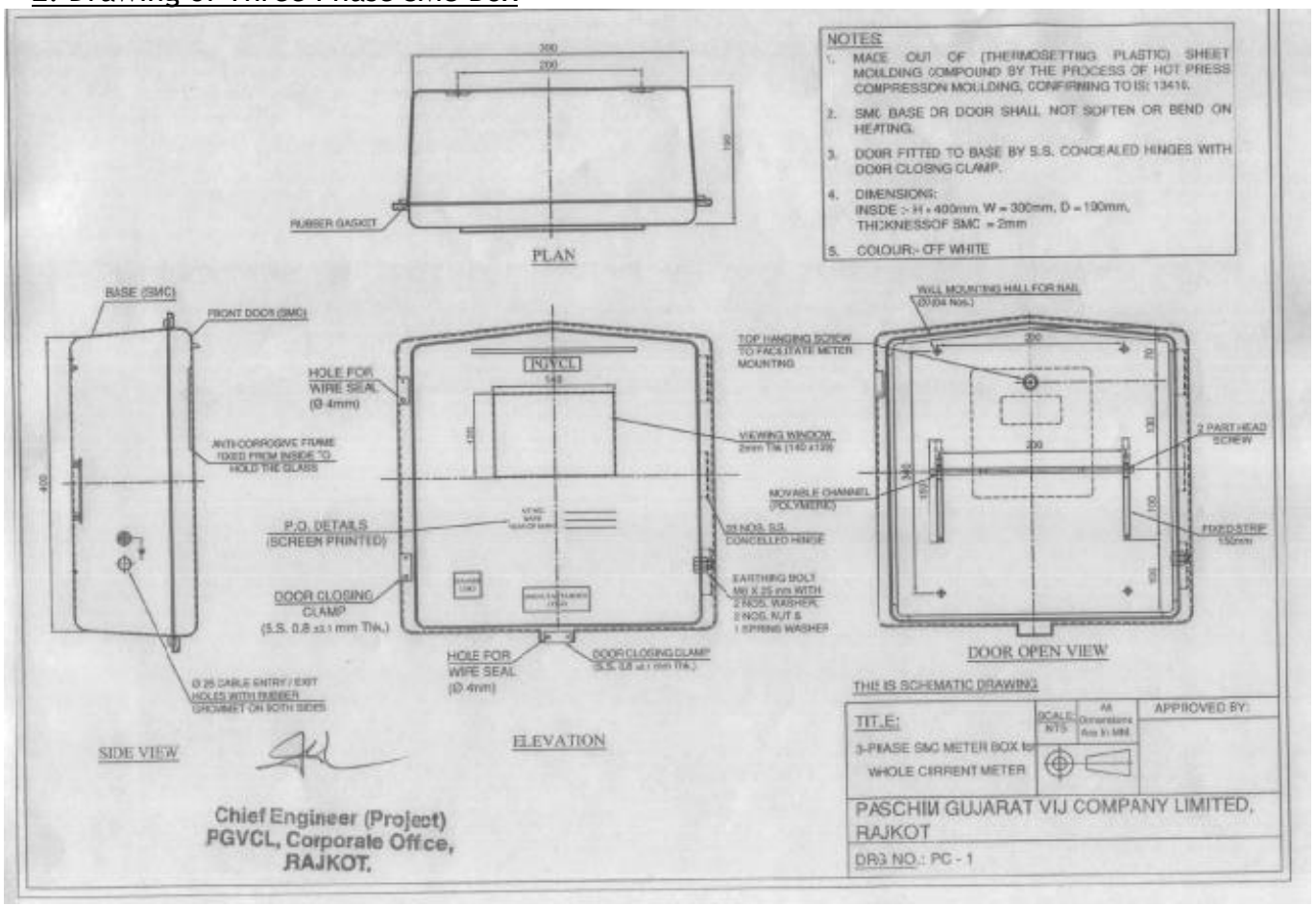
S. No.	Page/ clause no.	Clause as per RFP	Bidder's Query	Clarification to be issued to Bidders
			Compound) box can cause interference in case of cellular based communication technology. Based on our site visit, the existing meter box does not have the provision to access the meter through Optical cable without opening the meter box. Further during O&M period, access to meter in case of existing meter boxes maybe feasible only after removing the meter box seals, if applicable. Utility to take cognizance of above O&M requirement due to non-availability of optical port provision in existing meter boxes and provide concurrence. Please also provide of make and manufacturers of existing meter boxes, in order to evaluate the meter box in detail.	

3. Drawing of Meter Boxes

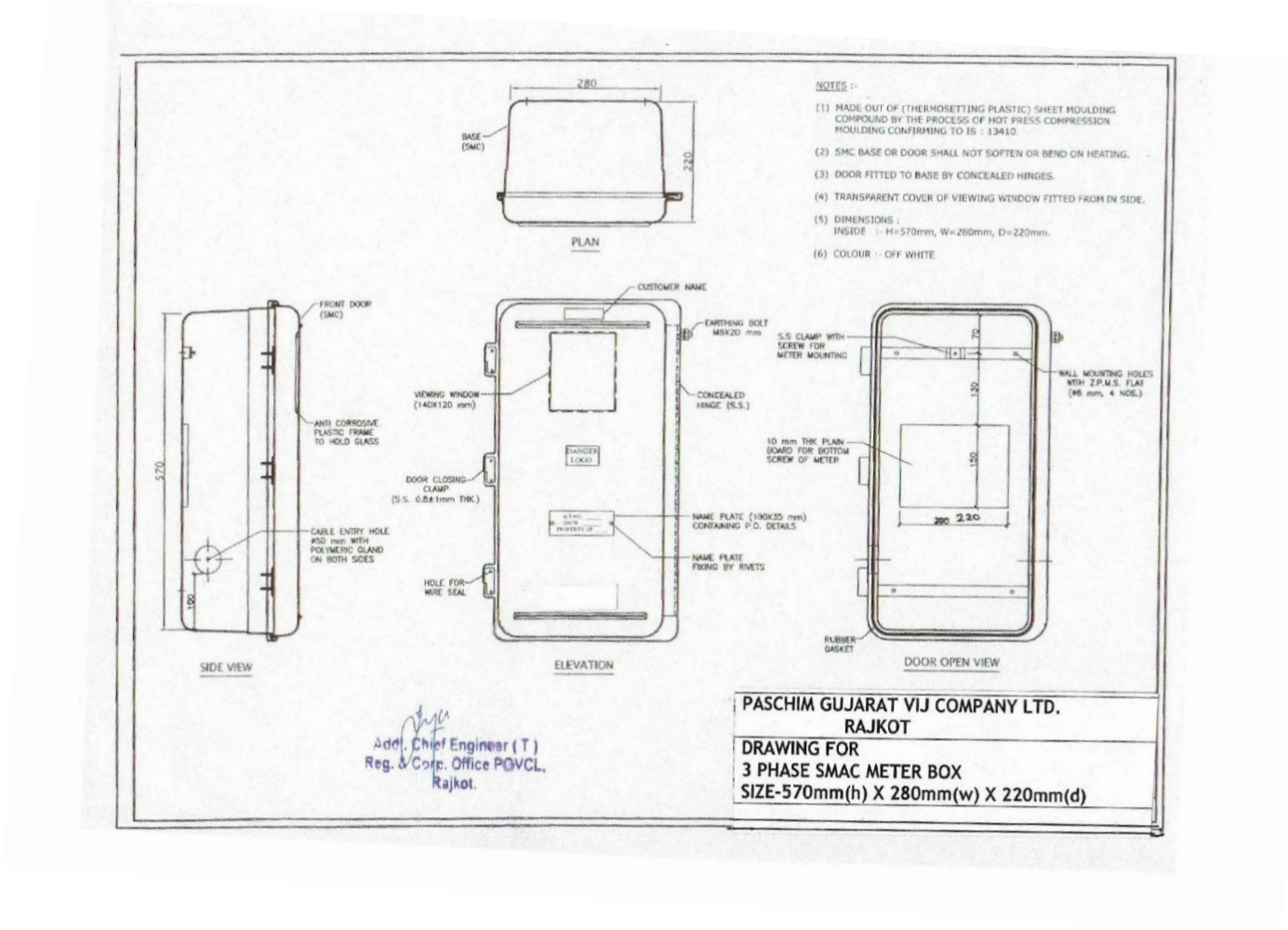
1. Drawing of SMC Single Phase Meter Box



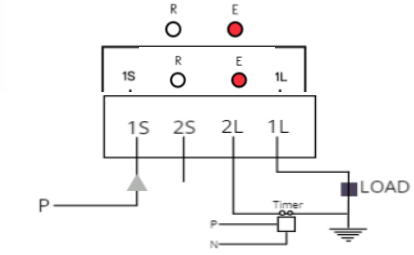
2. Drawing of Three Phase SMC Box



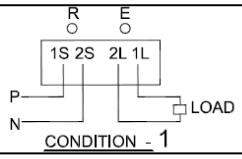
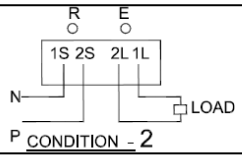
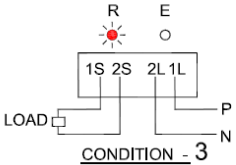
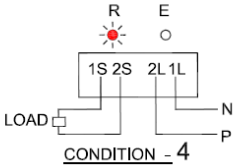
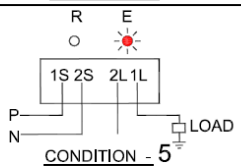
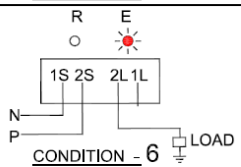
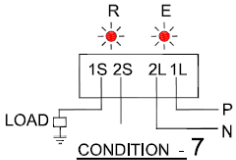
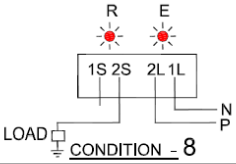
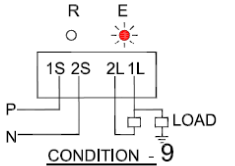
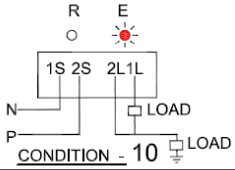
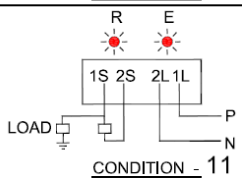
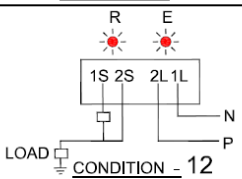
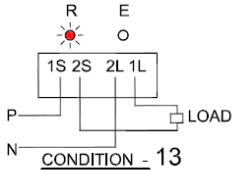
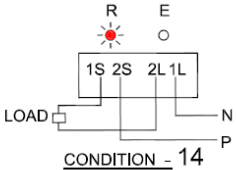
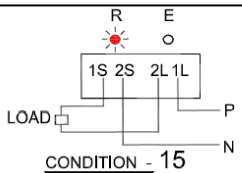
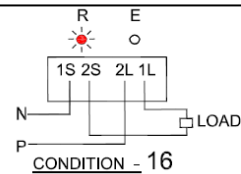
3. Drawing of 3 Ph CT Operated SMC Meter Box

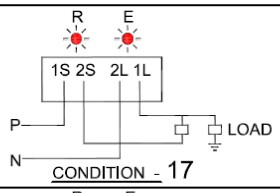
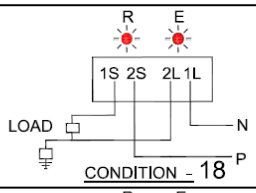
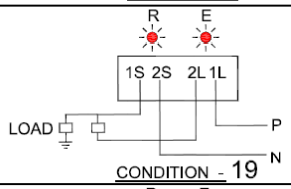
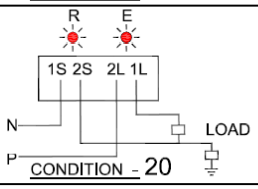
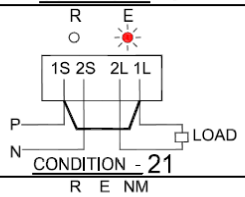
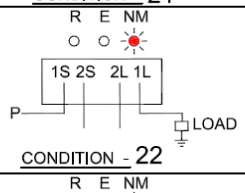
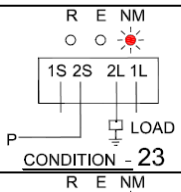
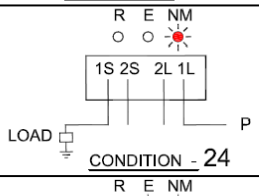
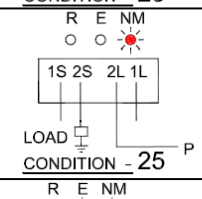
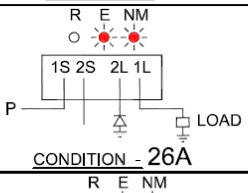
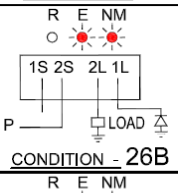
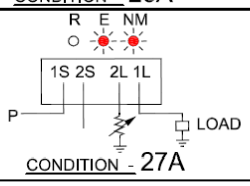
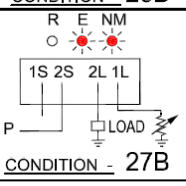
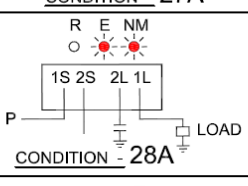
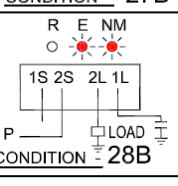


4. Tamper Condition No 38 for APPENDIX- A.1 TAMPER CONDITIONS FOR SINGLE PHASE METER, Page-276-277

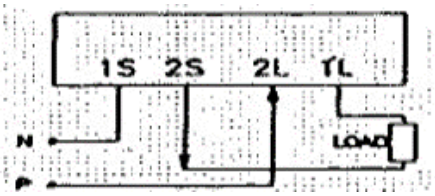
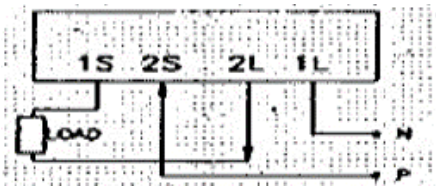
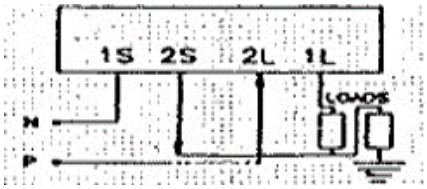
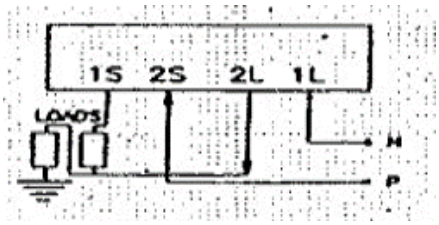
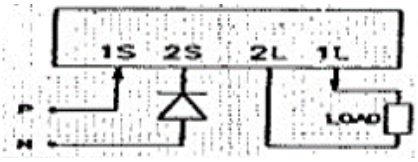
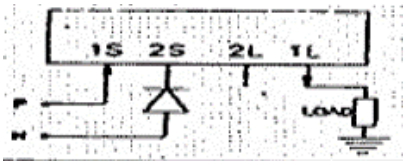
Condition No 38	Graphical View
Timer in Output Neutral, Load Earthed	

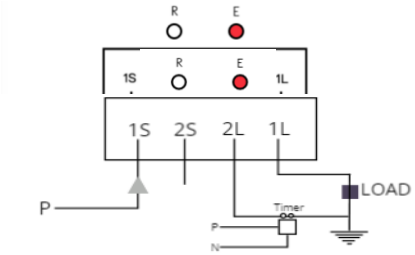
5. APPENDIX- B.1 TAMPER CONDITIONS FOR THREE PHASE WHOLE CURRENT METER, Page-284

	Phase - Neutral Connection Normal	Phase - Neutral Connection Reversed
NORMAL WIRING NOT TAMPERED	 CONDITION - 1	 P CONDITION - 2
PHASE AND NEUTRAL CURRENT REVERSED TAMPER	 CONDITION - 3	 CONDITION - 4
FULL LOAD EARTH RETURNED TAMPER	 CONDITION - 5	 CONDITION - 6
FULL LOAD EARTH RETURNED AND CURRENT REVERSED TAMPER	 CONDITION - 7	 CONDITION - 8
PARTIAL LOAD EARTH RETURNED TAMPER	 CONDITION - 9	 CONDITION - 10
PARTIAL LOAD EARTH RETURNED AND CURRENT REVERSED TAMPER	 CONDITION - 11	 CONDITION - 12
NEUTRAL CURRENT REVERSED TAMPER	 CONDITION - 13	 CONDITION - 14
PHASE CURRENT REVERSED TAMPER	 CONDITION - 15	 CONDITION - 16
LEGEND : R DIRECTION REVERSED	E EARTH TAMPERED	NM NEUTRAL DISTURBENCE

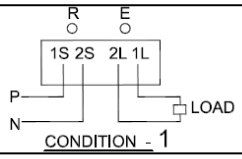
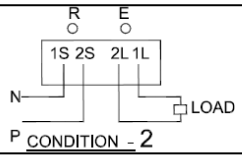
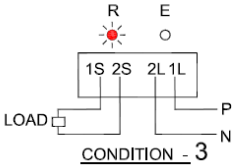
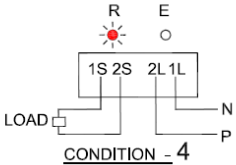
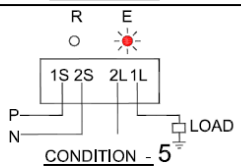
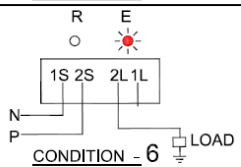
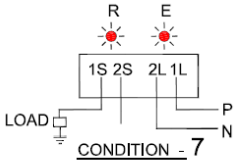
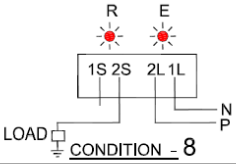
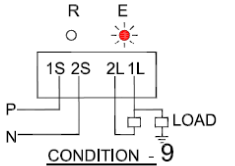
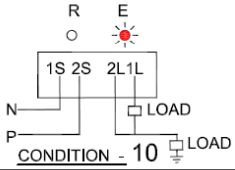
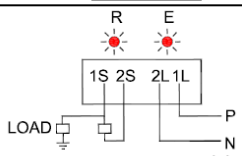
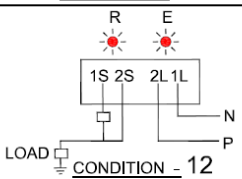
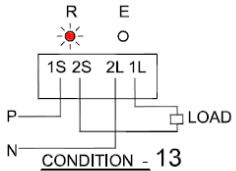
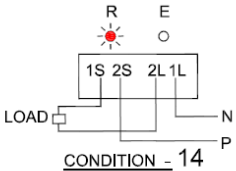
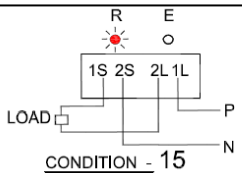
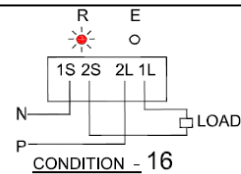
	Phase - Neutral Connection Normal	Phase - Neutral Connection Reversed
PARTIAL LOAD EARTH RETURNED AND NEUTRAL CURRENT REVERSED TAMPER	 CONDITION - 17	 CONDITION - 18
PARTIAL LOAD EARTH RETURNED AND PHASE CURRENT REVERSED TAMPER	 CONDITION - 19	 CONDITION - 20
CURRENT BYPASSED TAMPER	 CONDITION - 21	
NEUTRAL REMOVAL TAMPER	 CONDITION - 22	 CONDITION - 23
NEUTRAL REMOVAL & CURRENT REVERSED TAMPER	 CONDITION - 24	 CONDITION - 25
NEUTRAL DISTURBANCE TAMPER	 CONDITION - 26A	 CONDITION - 26B
NEUTRAL DISTURBANCE TAMPER	 CONDITION - 27A	 CONDITION - 27B
NEUTRAL DISTURBANCE TAMPER	 CONDITION - 28A	 CONDITION - 28B

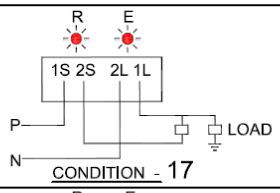
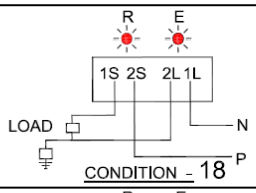
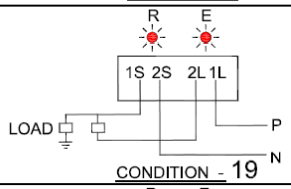
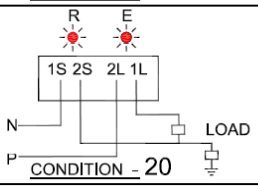
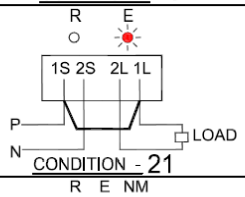
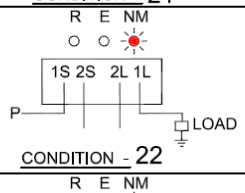
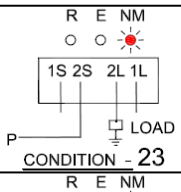
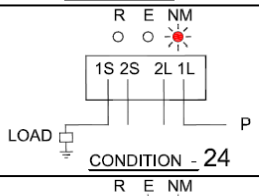
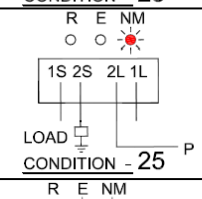
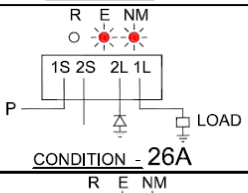
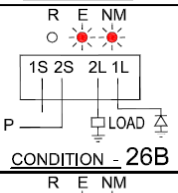
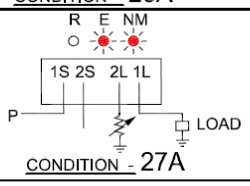
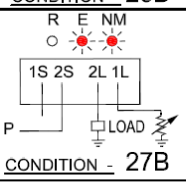
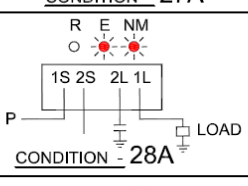
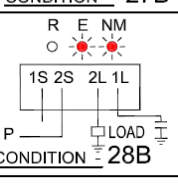
LEGEND : R DIRECTION REVERSED E EARTH TAMPERED NM NEUTRAL DISTURBENCE

Phase Current Reversed, Voltage Reversed	
Neutral Current Reversed, Voltage Interchanged & Reversed	
Partial Load Earth Returned & Neutral Current Reversed, Voltage Reversed	
Partial Load Earth Returned & Neutral Current Reversed, Voltage Reversed and Voltage Interchanged	
Diode Reversed in Neutral	
Diode Reversed in Neutral, Load Earthed	

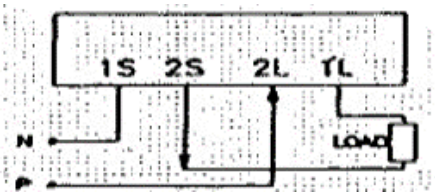
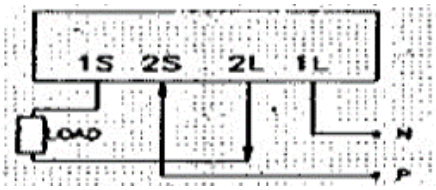
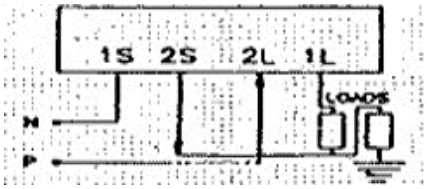
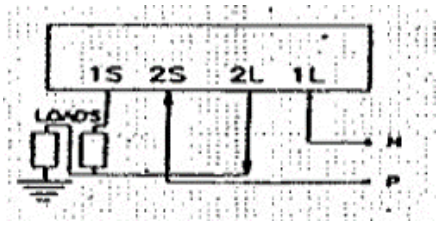
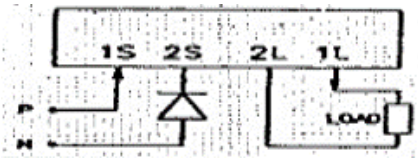
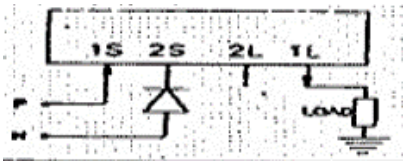
Condition No 38	Graphical View
Timer in Output Neutral, Load Earthed	

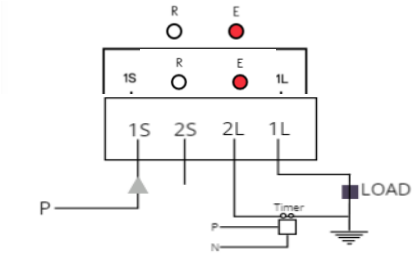
6. APPENDIX- C.1 TAMPER CONDITIONS FOR THREE PHASE LTCT SMART METERS, Page-289

	Phase - Neutral Connection Normal	Phase - Neutral Connection Reversed
NORMAL WIRING NOT TAMPERED	 CONDITION - 1	 P CONDITION - 2
PHASE AND NEUTRAL CURRENT REVERSED TAMPER	 CONDITION - 3	 CONDITION - 4
FULL LOAD EARTH RETURNED TAMPER	 CONDITION - 5	 CONDITION - 6
FULL LOAD EARTH RETURNED AND CURRENT REVERSED TAMPER	 CONDITION - 7	 CONDITION - 8
PARTIAL LOAD EARTH RETURNED TAMPER	 CONDITION - 9	 CONDITION - 10
PARTIAL LOAD EARTH RETURNED AND CURRENT REVERSED TAMPER	 CONDITION - 11	 CONDITION - 12
NEUTRAL CURRENT REVERSED TAMPER	 CONDITION - 13	 CONDITION - 14
PHASE CURRENT REVERSED TAMPER	 CONDITION - 15	 CONDITION - 16
LEGEND : R DIRECTION REVERSED	E EARTH TAMPERED	NM NEUTRAL DISTURBENCE

	Phase - Neutral Connection Normal	Phase - Neutral Connection Reversed
PARTIAL LOAD EARTH RETURNED AND NEUTRAL CURRENT REVERSED TAMPER	 CONDITION - 17	 CONDITION - 18
PARTIAL LOAD EARTH RETURNED AND PHASE CURRENT REVERSED TAMPER	 CONDITION - 19	 CONDITION - 20
CURRENT BYPASSED TAMPER	 CONDITION - 21	
NEUTRAL REMOVAL TAMPER	 CONDITION - 22	 CONDITION - 23
NEUTRAL REMOVAL & CURRENT REVERSED TAMPER	 CONDITION - 24	 CONDITION - 25
NEUTRAL DISTURBANCE TAMPER	 CONDITION - 26A	 CONDITION - 26B
NEUTRAL DISTURBANCE TAMPER	 CONDITION - 27A	 CONDITION - 27B
NEUTRAL DISTURBANCE TAMPER	 CONDITION - 28A	 CONDITION - 28B

LEGEND : R DIRECTION REVERSED E EARTH TAMPERED NM NEUTRAL DISTURBENCE

Phase Current Reversed, Voltage Reversed	
Neutral Current Reversed, Voltage Interchanged & Reversed	
Partial Load Earth Returned & Neutral Current Reversed, Voltage Reversed	
Partial Load Earth Returned & Neutral Current Reversed, Voltage Reversed and Voltage Interchanged	
Diode Reversed in Neutral	
Diode Reversed in Neutral, Load Earthed	

Condition No 38	Graphical View
Timer in Output Neutral, Load Earthed	

7. Section 6 Project Requirement, 9.4 Site Acceptance Test (SAT) Page 257

(Reference to Addendum issued by REC dated 28.09.2022 vide Letter No: REC/PMD/AMISP/2022-23/270)

Also, among others, the site testing document shall include the following minimum performance tests for DT/ Feeder metering carried out in non-contiguous electrical locations:

Data Type	*Performance Requirement*
1. Load Profile Data Read[3]	
One-month block load profile for installed meters	*From 98% of the meters in 12hours after the midnight*
2. On-Demand Remote reads of meters	
Collection of 7 days of interval energy data and the current totalaccumulated energy from a selected individual meter	*Within 2 minutes*
3. Ping Response with acknowledgement/ response for selected meters	
For installed meters	*Action performed at 98% of meters within [5] minute; and*
For an individual meter	*Action performed within 3seconds*
4. Meter loss and restoration of supply	
Receiving of alert for all affected AMI meters	*Alert to be received within 3minutes for 60% of meters*
5. Meter Tamper Alerts	
Receiving of alert for an individual meter	*Alert to be received within 3minutes*
6. Power Quality Alerts	
Receiving of alert for an individual meter	*Alert to be received within 5minutes*
7. Firmware upgrade with acknowledgement/ response for selected meters	

Data Type	*Performance Requirement*
For installed AMI meters (for a batch of at least 20% of installedbase)	*Action performed at 99% of meters within [18] hours; and*
	Action performed at 99.9% ofmeters within [24] hours
8. Remotely altering settings in meter	
For installed AMI meters (for a batch of at least 20% of installedbase)	*Action performed at 99% of meters within [8] hours; and*
	Action performed at 99.9% ofmeters within [24] hours
9. Remotely read events logs	
For reading the full event log for installed AMI meter	*Action performed at 90% of meters within [30] minutes; and*
	Action performed at 99% ofmeters within 1 hour; and
	Action performed at 99.9% ofmeters within [6] hours.
10. VEE processing	
For all installed meters	*Action performed in [15] mins*
11. On-Demand Remote reads of meters	
Collection of 7 days interval energy data and the current totalaccumulated energy from a group of 10% of installed base ofmeters (configurable)	*95% complete within 2 hrs 100% complete within 4 hrs*

8. Annexure T Specification of Polycarbonate Seals, Page- 347

TECHCNICAL SPECIFICATION FOR TAMPER PROOF POLYCARBONATE PLASTIC SEALS

SCOPE

The specification covers the design, manufacture, testing at manufacturers works and supplying, delivery of tamper proof polycarbonate plastic seals for sealing electrical installations viz: Meter body of energy meters, terminal cover of energy meters and Metal/SMC Meter Box, CTPT Units etc. and for other similar purpose.

The polycarbonate seals shall be conformed to the PGVCL's specification as under:

1. **Material of Plastic Seal**

   The raw material used for polycarbonate plastic seals shall be of M/s. Dow Caliber Ltd. Switzerland (Grade 201- 15) M/s. GE Plastic, Singapore (Grade 143R), M/s. Dupont, Japan (Grade LV – 20), M/s. Bayer Ltd. (Makrolon 2407) or any other equivalent manufacturer having similar material properties as under:

Sr. No.	DESCRIPTION	CHARACTERISTIC
1	Melting temperature	280˚ C to 295˚ C
2	Ductility	Hard
3	Durability	Weather effect resistance
4	Transparency	Fully transparent (long time transparency)
5	Material group	Engineering Plastic

   A copy of relevant manufacturers' test certificate related to the manufactured batch shall be furnished to PGVCL engineer during inspection.

2. **Colour of Seal**

   The seals shall be colourless, transparent (see through) type, which shall give complete visualization of its fixing mechanism and shall show clear indication if tampered.

3. **Design and Construction of seal.**

   a. **Design:** The seal shall be anchor type tamper evident with double locking system having male and female part connected with inbuilt sealed wire. On both the sides the secret code and logo of PGVCL should be embossed as per approval of the drawing. Also, there should be provision for inserting seal wire – a hole of 1 mm +/- 0.02 mm should be made. The design other than the approved drawing should got approved before execution of the order.

Size of the Seal:

a) Female Part. :

The overall size of seal (female part) shall be 20 mm x 20 mm x 8 mm (± 5% maxi. Allowable limit for variation in dimension)

[20 x 20 x 8.0] normal;

[21 x 21 x 8.4] considering +5% tolerance;

[19 x 19 x 7.6] considering - 5% tolerance

The wall thickness of the seal (female part) shall be 0.80 mm to 1.0 mm (i.e. Not more than 1.0 mm).

b) Male Part:

The male part thickness (Anchor thickness) shall be (6.00 ± 5%) i.e. 5.7 mm to 6.3 mm

b. Serial no. of the Seal: Non repeat Seven digits Sr. Nos. with code no. on the seal shall be embossed and it shall not be screen printed and it should be provided on male and female portion i.e. on the top in male part and on the side in female part. Please note that Sr. No. of seal shall not be embossed after the seal is manufactured. The size of the digit shall be 2 x 3 mm. Both seven digit seal numbers should be visible separately after closing the seal.

c. Monogram: The seal shall have Monogram in 10 mm Circle of PGVCL on front side. The back side of seal shall have month/year of A/T in figure with manufacturer's trademark / symbol.

d. Seal Wire: The seal wire shall be SS 316 grade as per AISI standards. It shall be non corrosive non magnetic Stainless Steel twisted strand wire **(SWG 26 (0.457 mm) i.e. over all diameter of seal wire shall be 0.914mm +/- 0.05mm.**

The length of seal wire connecting male and female parts of the seal shall be as under.

(a) Total length to be used 290 mm **(Tolerance+/- 5mm)**

(b) Measured from beginning of the female part to end of the male part 80 mm. **(Tolerance+/- 1.5mm)**

The seal wire shall not have affect of magnet i.e. it should not attract to magnet. The seal wire used for the above size of seals shall be inbuilt in connecting male and female part of the seal. The application of the seal wire is to insert through the hole via female part and insert the male part into female part by applying thumb pressure to lock the seal.

Signature of Tenderer:		
Date:	Place:	Company's Round Seal:

4. General Construction

The seal shall be designed for a single use only and if tampered with the help of plier, knife or any other sharp instruments, the seal shall be damaged and due toits see through property, the sign of internal tampering shall be easily detected. Also, once opened, it cannot be re-used. The seal shall be made in such a way that, it can be easily locked with the help of finger and thumb pressing and no tools shall be required to close the seal in the laboratory or at site. After inserting the seal wire through female part, the cap of the male part shall be fitted in the female part in such a way that it should not leave any space to avoid insertion of any sharp tools for opening of seal body of the female part in hot or cold condition. General arrangement drawing of seal is attached.

The seal shall have also following features.

a) Tamper resistance and reliable.
b) Environmentally safe as it does not contain any lead.
c) Withstand long-term exposure to direct sunlight.
d) Required no tools for installation.
e) Transparent and see through body reveals tampering attempts.
f) Heat resistance.

5. TESTS

i) Visual check- The seal and seal wire shall be checked for workmanship and other features of design, colour & construction including dimensions as mentioned above.

ii) Boiling water test -

A) The seal should be locked with seal wire and then it should be dipped keeping seal suspended in such a way that only female portion should be heated and affected in boiling water **for one hour** and thereafter try to pull out male portion as well as seal wire. The male portion should not come out and if seal wire is pulled out, it should damage the seal, which can be visible as the seal is transparent.

B) The seal shall be emerged in the boiling water for more than one hour and there shall not be any affect on the seal and the seal shall remain in tact condition. Even, with the help of any sharp instrument, pulling with plier i.e. by applying mechanical force, the seal shall not come out from the female part. In case, it comes out, the same shall damage the seal, so that it cannot be re-used. Also, if seal wire after locking is pulled out it should not come out without damaging the seal.

Signature of Tenderer:		
Date:	Place:	Company's Round Seal:

ii) **Pull out test -** After locking the seal, if the seal is pulled with mechanical force with the help of plier or any other instrument, sharp instrument etc. at normal condition, the seal shall not be unlocked without any damage.
The seal wire of selected seals (duly locked after insertion of seal wire) shall be pulled out of the locked seal by use of external force. The seal wire shall not come out without damaging the seal under test.

iii) **Chemical Test –** The seal shall be kept in the concentrated hydrochloric acid for minimum one hour in locked condition. The same shall remain intact condition.The seal wire shall not come out without damaging the seal under test when pulled out by force.

In short, if the seal is tested for any of the above tests, in no condition the male and female part shall be separated without damaging the seal. In case, if they are separated, the seal shall have sufficient tamper evident. Also, if seal wire is pulled out from the seal in any of the above tests, it shall not come out from the seal without damaging seal.

iv) **Melting Point Test** (At temperature 280˚ C to 295˚ C)

v) **Test for verification of SS 316 grade of seal wire (as per IS:280)**

6. **Sampling criteria / Acceptance tests :**

Minimum 5 samples of seals shall be selected at random as per IS 4905 for testing purpose from the each lot offered for inspection. Before dispatch to site, the seals offered for inspection shall be tested at the manufacturer's works for acceptance tests i) to iv) mentioned at clause no.(5) of technical specifications.

Test certificate for SS 316 grade of seal wire from Govt. approved/ NABL Accredited laboratory shall be furnished to PGVCL engineer during inspection. In the absence of any relevant test certificate being submitted, sample of seal wire shall be submitted by supplier & got tested at a Govt. approved/ NABL Accredited laboratory for confirmation of required chemical and physical properties. The cost of such tests shall be borne by the supplier.

After successful passing in the testing, the lot shall be accepted. The seals used in testing shall be destroyed in the presence of PGVCL's inspecting officer. The seal numbers of seals used in testing shall be recorded in the inspection reports.
PGVCL reserves the right to carry out seal monogram verification by selecting seals from any lot.

7. Type test report :

The bidder shall have to submit Notarized copy of type test certificate of offered seal for tests mentioned at clause no.(5) of technical specifications, from the Govt. approved/ NABL Accredited laboratory viz. CPRI, ERTL, ETDC, NPL, ERDA etc. along with bid. The type tests having been conducted on offered seal shall be not older than **7 (seven) years** from the scheduled date of opening of the tender.

8. Supply Schedule

After Placement of order PGVCL will give delivery schedule, Sr. No. of the seal. Please note that the seal shall be manufactured only after receipt of the delivery schedule and as per the delivery schedule unless specifically instructed by the authority.

9. Guarantee

The seal shall be guaranteed for a period of **2 (Two) years.** In case, if any defect in design and manufacturing is noticed within the guarantee period the seals shall be replaced within one month free of cost. The defective seal found in the field viz: RSO/Division Office/ Sub-Division Offices, shall be collected by supplier at their risk and cost and shall be destroyed at suppliers' works in the presence of PGVCL's Engineers. For the replacement of seal, a new Sr. No. shall be provided by the PGVCL.

10. Special feature

The seals are to be manufactured in respect of above aspects. On placement of order from the PGVCL, all the suppliers shall have to make the seal of the same size and shape as per the approval of drawing. Also a secret code shall be given to each supplier on whom the PGVCL places the order. There will be PGVCL's logo, Sr. No., Month and Year of A/T or any other symbol given by the PGVCL shall be embossed. After completion of supply of order, the dyes of the secret code of the seals shall be surrendered to the PGVCL by each supplier on whom the order is placed by the PGVCL. Before commencing the supply, 25 nos. of sample seals shall have to be approved by the PGVCL.

11. Packing and Forwarding.

The supplier shall be responsible for durable packing of seal. The supplier shall have to supply each 100 seals in chronological order i.e. arranging in serially, tide with the steel wire forming a loop and the same shall be packed in polythene bag affixed with a label furnishing details such as manufacturers name, serial No. of seal, date of packing and A/T number.

12. Tender Sample

Each Bidder shall have to enclose 25 nos. sample seals and drawing of seal along with the technical bid. The tender sample seals shall be provided with month/year of A/T in figure with manufacturer's trademark / symbol on backside of the female part of the seal. The seals shall also be provided Sr. No. of seal i.e. 0000001 to 0000025 on top of the male part of the seal as well side of the female part of the seal as per the approved drawing. The offer without samples shall be out rightly rejected and the offer will not be considered.

The sample seals shall be tested as per specification clause No. 5 (I to V), either at PGVCL's NABL laboratory or at third party Govt. approved / NABL laboratory. The tender sample seals not conforming to the specification shall be straight way rejected and accordingly, their offer will not be considered for further evaluation.

13. Stage Inspection.

PGVCL reserves the rights to conduct stage inspection during manufacturingprocess for material used for seal & seal wire.

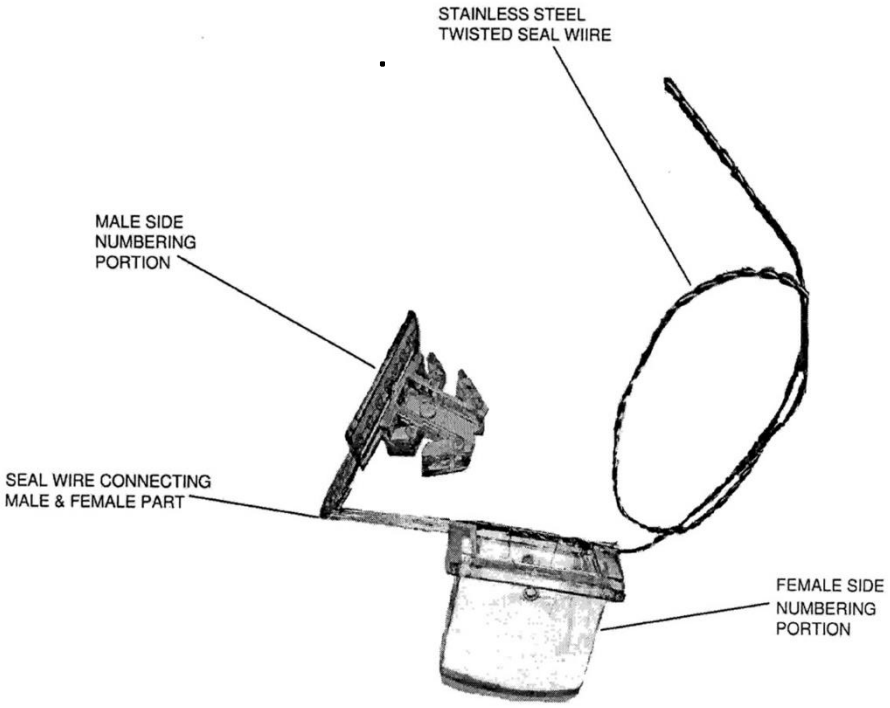
PGVCL reserves the rights to verify following test certificates during inspection for material used in manufactured lot.

i. The manufacturer's test certificate for raw material used for polycarbonate Plastic seals
ii. Test certificate of seal wire for SS 316 grade.

In case, any requirement is not fulfilled as per the specifications, the entire lotunder process shall be rejected.

14. Form of undertaking.

On placement of order, suppliers shall have to give undertaking as desired by the PGVCL in prescribed formats.



DESIGN	:- DOUBLE LOCKING SYSTEM.
SIZE OF PLASTIC SEAL	:- 20 X 20 X8 mm (± 5% TOLERANCE)
SEAL BODY	:- POLY CARBONATE MATERIAL COLOUR LESS TRANSPARENT
SERIAL NUMBERS	:- SEVEN DIGIT NUMBERS ON MALE & FEMALE PORTION
MONOGRAM	:- AS PER SPECIFICATION IN 10mm CIRCLE
SEAL WIRE	:- STAINLESS STEEL TWISTED STRAND WIRE ,TOTAL LENGTH 290mm (TOLERANCE ±5 MM)
OVERALL DIAMETER OF SEAL WIRE	:- 0.914 MM ± 0.05 MM
THICKNESS OF FEMALE PART	:- 0.8mm TO 1.0mm
THICKNESS OF MALE PART	:- 5.7mm TO 6.3mm

Paschim Gujarat Vij Company Limited, Rajkot			
Ref Drawing No	Revision No	Verified By	Approved By
O&M - 359 / 20.09.03	02	~~Engineer~~ DE / EE / SE / ACE	CE(Tech), PGVCL

(To be executed on Non-judicial Stamppaper of Rs.300/- & duly Notarized)

(In case of "**Company**" Registeredunder Companies Act)

Undertaking

This Deed of Undertaking is executed at_____on_____ by M/s._____a Company Registeredunder the Indian Companies Act 1956 having its Registered Office at _____ _____ (hereinafter referred to as "the Supplier", which expression shall, unlessexcluded by or repugnant to the context include its Successors or Assigns) on the one part, and the Paschim Gujarat Vij Company Limited. having their Regd. And Corporate Office "Paschim Gujarat Vij Seva Sadan", Off Nana Mava Main Road, Laxminagar, Rajkot– 360004 (hereinafter referred to as "PGVCL" which expression shall unless excluded by orrepugnant to the context include its Successors Assigns) or on the other part.

WHEREAS, the aforesaid Paschim Gujarat Vij Company Limited has accepted the offer ofthe aforesaid Supplier M/s._____for supply of _____brand with new PGVCL Monogram as perPGVCL Tender/Order No._____dated:_____.

AND WHEREAS in terms of the contractual clause No._of the afore-said Contract,the Supplier shall have to give an Undertaking to the PGVCL to the effect that the _____ brand with new PGVCL Monogram supplied to the Paschim Gujarat Vij Company Limited **will not be supplied to anybody** else but only to the authorized Representative of the Paschim Gujarat Vij Company Limited under their specific Orders and that if duplication of the said seal is found on theinstallation, to identify investigation, prosecution will be done at our cost.

NOW, THEREFORE, we the above named Partners of M/s._____ _____, hereby agree and undertake that the_____ _____Brand with new PGVCL Monogram supplied to the Paschim Gujarat Vij Company Limited **will not be supplied to anybody** else but only to the authorized Representative of the Paschim Gujarat Vij Company Limited under their specific orders.

We hereby further agree and undertake that, if duplication of the aforesaid seal is detected on the installation, we will identify investigation and prosecution for the same will be done by us immediately in the court of competent jurisdiction at our own cost andrisk.

IN WITNESS WHEREOF, I, the authorized Officer / Representative of M/s._____

_____has set my hands and affixed on the Common Seal of Companythe day, month and year first above written.

For and on behalf of M/s. _____

(Name with Signature)

Common Seal of the Company

Witness:

(Full Name, Address & Signature)

Notarized

1)

2)

(In case of "**Partnership**" Firms)

Undertaking

This Deed of Undertaking is executed at_____on_____ by:-

(i) Shri / Smt. _____aged about _____years, residing at _____ _____;

(ii) Shri / Smt. _____aged about _____years, residing at _____; &

(iii) Shri / Smt. _____aged about _____years, residing at _____ _____.

All Partners of the Partner-ship firm named as M/s._____ _____having its Registered Office at _____(hereinaft erreferred to as "the Supplier", which expression shall, unless excluded by or repugnant to the context include the Legal Heirs, Representatives, Administrators, Executors orSuccessors of the Partner-ship frim and each of the Partners names herein above) on theone part, and the Paschim Gujarat Vij Company Limited. having their Regd. And Corporate Office "Paschim Gujarat Vij Seva Sadan", Off Nana Mava Main Road, Laxminagar, Rajkot– 360004 (hereinafter referred to as "PGVCL" which expression shall unless excluded by or repugnant to the context include its Successors Assigns) or on the other part.

WHEREAS, the aforesaid Paschim Gujarat Vij Company Limited has accepted the offer ofthe aforesaid Supplier M/s._____for supply of _____Seal brand with new PGVCL Monogram as per PGVCL Tender/Order No._____dated:_____.

AND WHEREAS in terms of the contractual clause No._of the afore-said Contract,the Supplier shall have to give an Undertaking to the PGVCL to the effect that the _____Seal brand with new PGVCL Monogramsupplied to the Paschim Gujarat Vij Company Limited **will not be supplied to anybody** else but only to the authorized Representative of the Paschim Gujarat Vij Company Limited under their specific Orders and that if duplication of the said seal is found on the installation, to identify investigation, prosecution will be done at our cost.

NOW, THEREFORE, we the above named Partners of M/s._____ _____, hereby agree and undertake that the_____ _____Seal Brand with new PGVCL Monogram supplied to the Paschim Gujarat Vij Company Limited **will not be supplied to anybody** else but only to the authorized Representative of the Paschim Gujarat Vij Company Limited under their specific orders.
detected on the installation, we will identify investigation and prosecution for the same will be done by us immediately in the court of competent jurisdiction at our own cost andrisk.

IN WITNESS WHEREOF, we the above-named Partners, of the Partner-ship Firm, M/s.
_____have set our hands and affixed the Seal of our Partner-ship Firm, the day, month and year fist above written.

For and on behalf of M/s. _____

(Seal of Firm)
(Name with Signature of each)

1) Name : _____
(Signature)

2) Name : _____
(Signature)

3) Name : _____
(Signature)

Witness:

(Full Name, Address & Signature) **Notarized**

1)

2)

(To be executed on Non-judicial Stamppaper of Rs.300/- & duly Notarized)

(In case of "**Proprietary Firm**")

Undertaking

This Deed of Undertaking is executed at_____on_____ by M/s._____a Proprietary Ship firm concern solely owned managed and controlled by Shri _____ _____ having its Registered Office at_____
(hereinafter referred to as "the Supplier", which expression shall, unless excluded by or repugnant to the context include its Successors or Assigns) on the one part, and the Paschim Gujarat Vij Company Limited. having their Regd. And Corporate Office "PaschimGujarat Vij Seva Sadan", Off Nana Mava Main Road, Laxminagar, Rajkot– 360004 (hereinafter referred to as "PGVCL" which expression shall unless excluded by or repugnant to the context include its Successors Assigns) or on the other part.

WHEREAS, the aforesaid Paschim Gujarat Vij Company Limited has accepted the offer ofthe aforesaid Supplier M/s._____for supply of _____brand with new PGVCL Monogram as perPGVCL Tender/Order No._____dated:_____.

AND WHEREAS in terms of the contractual clause No._of the afore-said Contract, the Supplier shall have to give an Undertaking to the PGVCL to the effect that the
_____ brand with new PGVCL Monogram supplied to the Paschim Gujarat Vij Company Limited **will not be supplied to anybody** else but only to the authorized Representative of the Paschim Gujarat Vij Company Limited under their specific Orders and that if duplication of the said seal is found on theinstallation, to identify investigation, prosecution will be done at our cost.

NOW, THEREFORE, we the above named Proprietor of M/s._____ _____, hereby agree and undertake that the_____ _____Brand with new PGVCL Monogram supplied to the Paschim Gujarat Vij Company Limited **will not be supplied to anybody** else but only to the authorized Representative of the Paschim Gujarat Vij Company Limited under their specific orders.

We hereby further agree and undertake that, if duplication of the aforesaid seal is detected on the installation, we will identify investigation and prosecution for the same will be done by us immediately in the court of competent jurisdiction at our own cost andrisk.

IN WITNESS WHEREOF, I, the Sole Proprietor of M/s._____ _____has set my hands and affixed on the Common Seal of Companythe day, month and year first above written.

For and on behalf of M/s. _____

(Name with Signature)

Common Seal of the Company

Witness:

(Full Name, Address & Signature)

Notarized

1)

2)

9. Addendum Letter by REC dated 28.09.2022 vide Letter No. REC/PMD/AMISP/2022-23/270

R. LAKSHMANAN, IAS
Executive Director

सत्यमेव जयते

आरईसी REC
असीमित ऊर्जा, अनन्त संभावनाएं
Endless energy. Infinite possibilities.

No. REC/PMD/AMISP/2022-23/270 Date: 28.09.2022

Subject: Addendum of option for usage of SMC meter boxes and guidance on inclusion of additional scope of Smart System Metering in non-contiguous areas – in the latest version of AMI Service Provider (AMISP) SBD

Sir / Ma'am,

This is in continuation to the last version of SBD for appointment of AMISP under RDSS, issued vide our letter ref REC/RDSS/2021-22/236 dtd. 20th August, 2022.

Subsequently, REC has been in receipt of a number of inputs and suggestions from DISCOMs and Industry Stakeholders for addressal of a few additional provisions in the SBD.

Accordingly, Annexure-I is enclosed herewith, highlighting the addendum to the SBD, for providing the option for usage of SMC meter boxes along-with the guidance on inclusion of additional scope of Smart System Metering in non-contiguous areas *(in case the DISCOM opts to undertake these works under the same RFP, along-with the works in contiguous areas).* The same is also uploaded on REC website (http://recindia.nic.in/SBD-AMISP).

This for your kind information and necessary action please.

With regards,

Yours Sincerely,

28.9.22.
(R. Lakshmanan)

Enclosed: As Above.

To,
The Chairman / Managing Director (s)
All DISCOMs

Copy to:
1. The Addl. Chef Secretary/Principal Secretary / Secretary (Power/Energy), All States
2. The Joint Secretary, Ministry of Power, Government of India
3. The CMD, PFC Ltd
4. All Sr. CPMs / CPMs of REC Regional Offices.

Annexure-I

A. Addendum to SBD - Inclusion of additional option of SMC meter boxes:

Annexure O under Section 6 of the SBD mentions that the meter boxes of 1-Ph and 3-Ph consumer meters to be of polycarbonate material. In respect of the 1-Ph and 3-Ph consumer meters, wherever the SBD mentions the type of meter boxes to be installed, the same shall include the option of using SMC meter boxes as well and the appropriate choice may be made by the DISCOMs based on their assessment and contextual requirements.

B. Guidance note for inclusion of additional scope of smart system metering (DTs/ Feeders) in balance areas (non-Phase-I areas), from the areas proposed for the end-to-end smart metering RFP (SBD) for appointment of Advanced Metering Infrastructure (AMI) Service Provider in Phase-I contiguous electrical locations – *in case the DISCOM opts to undertake both these worksunder the same RFP*

In reference to the Guidance circulated to Discoms vide letter no. REC/RDSS/22-23/204 dated 11th July2022, point 2 (iii) stated that Utilities may also choose to include additional scope of smart metering of remaining DTs/ Feeders in the AMISP tenders to be rolled out for smart prepaid metering of Phase-I consumers. This would help utilities streamline the implementation schedule as well as help them expedite the smart meter deployment of 100% DTs and Feeders of Phase-II areas in-line with their REFand RDSS scheme guidelines.

If the utility decides to leverage the above-mentioned option, following changes may be required in the Model Standard Bidding Document (SBD) released for appointment of Advanced Metering Infrastructure ("**AMI**") Service Provider ("**AMISP**") for Smart Prepaid Metering in India on Design Build Finance Own Operate Transfer (DBFOOT) basis *(<Key changes are highlighted in red for easy reference>)*:

1. Section 6 Clause 1.2 of the SBD shall be modified as follows:

   "*1.2 The AMI Project area*

   The AMI Project shall be implemented in the Project Area comprising of:

   (A) Contiguous electrical locations (which will be ring fenced with boundary meters) where all consumers, DTs, feeders shall be smart metered to enable complete energy accounting with zero manual intervention

   (B) Non-contiguous electrical locations where dispersed metering for certain Industrial, Commercial and Government consumers and

   (C) Non-contiguous electrical locations where smart metering of remaining DTs, Feeders and Boundary meters, i.e., those not covered under (A) above.

   <The Utility to provide information on contiguous electrical locations (which will be ring fenced with boundary meters) for end-to-end smart metering and non-contiguous electrical locations for dispersed metering within the selected AMI Project Area along with relevant network and consumer details. Utility to enter brief details on the above areas in this section with details added as an

annexure to this document as required. Utility to ensure that area selected for end-to-end metering is ring-fenced with boundary meters. This would include a pictorial representation of the Project boundary w.r.t Utility's and AMISP's roles and responsibilities for physical installation of Smart Meters>

[Profile of Project area. The key details include following:

A) Contiguous Electrical Locations:

I. *Geographical Boundary:*
II. *Number of single phase whole current Smart Meters (with/without net-metering), three phase whole current Smart Meters (with/without net-metering), LT-CT operated three phase Smart Meters (with/without net-metering), and CT/PT operated three phase Smartmeters to be installed*

<The total number of smart meters to be installed should be based upon As-Is consumer database as well as projected load growth in the selected AMI Project Area during the Contract Period. Accordingly, the Utility should provide the appropriate quantity of smart meters to be installed for the AMI project based on the above consideration in Form 1 (Financial Bid) given in Section 5 of the RfP. AMISP shall provide meter LTCTs for LTCT meters as per the specifications provided by the Utility. Utility shall provide CTPTs to AMISP for HT-CTPT meters. In case Utility require AMISP to procure meter HT-CTPTs, the number and specifications for the same need to be provided by the Utility>

III. *Total number of consumer by category (Domestic/ Industrial/ Commercial/ Government);*
IV. *Substation information;*
V. *Feeder information;*
VI. *DT information;*
VII. *AT&C loss information (including billing and collection efficiency)*
VIII. *Historical load growth in project area;*
IX. *Manpower deployed in the selected area(s) of operations;*

B) Non-Contiguous Electrical Locations (Consumers):

I. *Geographical Boundary,*
II. *Number of single phase whole current Smart Meters (with/without net-metering), three phase whole current Smart Meters (with/without net-metering), LT-CT operated three phase Smart Meters (with/without net-metering), and CT/PT operated three phase Smartmeters to be installed;*

<The total number of smart meters to be installed should be based upon As-Is consumer database as well as projected load growth in the selected AMI Project Area during the Contract Period. Accordingly, the Utility should provide the appropriate quantity of smart meters to be installed for the AMI project based on the above consideration in Form 1 (Financial Bid) given in Section 5 of the RfP. AMISP shall provide meter LTCTs for LTCT meters as per the specifications provided by the Utility. Utility shall provide CTPTs to

AMISP for HT-CTPT meters. In case Utility require AMISP to procure meter HT-CTPTs,the number and specifications for the same need to be provided by the Utility>

III. *Total number of consumer by category (Industrial/ Commercial/ Government);*
IV. *Substation information;*
V. *Feeder information;*
VI. *DT information;*
VII. *Historical load growth in project area;*
VIII. *Manpower deployed in the selected area(s) of operations;*

C) Non-Contiguous Electrical Locations (DTs/ Feeders/ Boundary meters):

I. *Geographical location (Electrical division etc.)*
II. *LT-CT operated three phase Smart Meters (with/without net-metering), and CT/PT operated three phase Smart meters to be installed;*

<The total number of smart meters to be installed should be based upon As-Is consumer database as well as projected load growth in the selected AMI Project Area during the Contract Period. Accordingly, the Utility should provide the appropriate quantity of smart meters to be installed for the AMI project based on the above consideration in Form 1 (Financial Bid) given in Section 5 of the RfP. AMISP shall provide meter LTCTs for LTCT meters as per the specifications provided by the Utility. Utility shall provide CTPTs to AMISP for HT-CTPT meters. In case Utility require AMISP to procure meter HT-CTPTs, the number and specifications for the same need to be provided by the Utility>

III. *Total number of meters by category (DTs/ Feeders/ Boundary meters) and existingnumber of tagged consumers by category;*
IV. *Substation information;*
V. *Feeder information;*
VI. *DT information;*
VII. *AT&C loss information (including billing and collection efficiency), if available (at Feeder level etc.)*
VIII. *Historical load growth in project area;*
IX. *Manpower deployed in the selected area(s) of operations (Nodal officer/ single point ofcontact at Electrical division level etc.);*

D) Other Details:

I. *Details regarding periodicity/ frequency of the integration, data parameters including feeder energy data/ formats to be sent and received, protocol(s) to identify and addressexceptions, and concurrency requirements;*
II. *Details on requirement of infrastructure for recharge through feature phones/ offlinechannels required by the Utility.*

<Assumption based on one kiosk per existing bill pay centre for a period of 3(three) years>]"

2. <u>Section 6 Clause 1.4 (C) of the SBD shall be modified as follows:</u>

(C) Consumer indexing on de-novo basis for

i. *Contiguous electrical locations as mentioned in Clause 1.2 (A) in the selected AMI Project Area along with its regular updates during contract period as per Clause 4 of this Section.*

ii. *Non-contiguous electrical locations as mentioned in Clause 1.2 (C), i.e., Consumer indexing with DTs on de-novo basis along with its regular updates during contract periodas per Clause 4 of this Section; and feeder to DT indexing on de-novo basis for all DTs in along with its regular updates during contract period as per Clause 4 of this Section."*

3. **Section 6 Clause 2.4 of the SBD: A new table on key use cases to be enabled by the AMISP for Non-contiguous electrical locations as mentioned in Clause 1.2 (C) shall be added below the existing usecases table:**

"The key use cases to be enabled by AMISP for contiguous electrical locations as mentioned in 1.2. *(A) and non-contiguous electrical locations as mentioned in 1.2 (B) are provided below. Please note that these are illustrative list of use cases only and is not an exhaustive list. Further please note that all IS Standards shall be applicable.*

Sr.	*Use Case Activity Description*	*Source*	*Destination*	*Info Exchanged*
1.	*Collection of Daily Meter Profile*			
1.1	*At scheduled frequency HES should pull the Daily Meter Data from Smart Meter over communication Channel*	*HES*	*Meter*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF, Non-critical Event Code / Date*
1.2	*Meter should send the data toHES. Provision for retrial should be there if Meter data is not collected within time. Consumption details including non-critical events will be in 15 min/30 min block data, and data could be incremental to what was sent by meter in preceding instance*	*Meter*	*HES*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF, Non-critical Event Code / Date*
1.3	*HES should send the data to MDM*	*HES*	*MDM*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF*
1.4	*MDM should send the required parameter to Prepaid system for daily charge calculation at least once on daily basis*	*MDM*	*Prepaid Engine*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF, Non-critical Event Code / Date*
2.	*Monthly Billing profile collection*			
2.1	*Command from Billing system triggered and send to MDM / HES for collection of Monthly billing Data*	*Billing System*	*MDM / HES*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF, Non-critical Event Code / Date*

2.2	*At scheduled frequency HES should pull the monthly meter data from Smart Meter over the communication channel*	*HES*	*Meter*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF, Non-critical Event Code / Date*
2.3	*Meter should send the data toHES. Provision for retrial should be there if Meter data is not collected within time.*	*Meter*	*HES*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF, Non-critical Event Code / Date*
2.4	*HES should decrypt and validate the data collected and send to MDM*	*HES*	*MDM*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF, Non-critical Event Code / Date*
2.5	*MDM should send the required parameter to Billing system for Monthly Bill calculation*	*MDM*	*Billing Engine*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF, Non-critical Event Code / Date*
3.	***Remote Meter disconnection***			
3.1	*Meter disconnect operation command after wallet balance calculation*	*Prepaid Engine/ Billing system*	*MDM*	*Meter Number, group of meters, instruction to close switch*
3.2	*Disconnection alert sent to consumer*	*MDM*	*Billing System*	*Meter Number, group of meters, instruction to close switch*
3.3	*Meter disconnection operator command*	*MDM*	*HES*	*Meter number, action (disconnect)*
3.4	*Consumer meter disconnection*	*HES*	*Meter*	*Meter Number, switch status*
3.5	*Disconnection Status Update*	*Meter*	*HES*	*Meter Number, switch status*
3.6	*Disconnection Status Update*	*HES*	*MDM*	*Meter Number, switch status*
4.	***Remote Meter Reconnection***			
4.1	*Meter reconnect operation command after wallet recharge Billing*	*Billing system/ Prepaid Engine*	*MDM*	*Meter Number, group of meters, instruction to close switch*
4.2	*Meter reconnect operation command*	*MDM*	*HES*	*Meter Number, group of meters, instruction to close switch*
4.3	*Consumer meter reconnection*	*HES*	*Meter*	*Meter number, action (reconnect)*
4.4	*Reconnection Status Update*	*Meter*	*HES*	*Meter number, action (reconnect)*
4.5	*Reconnection Status Update*	*HES*	*MDM*	*Meter number, action (reconnect)*
5.	***Utility detects tampering at consumer site***			

5.1	*High priority events captured by Meter sent to HES as and when occurred*	*Meter*	*HES*	*Meter Number, event date& time, event Code /description*
5.2	*High priority events reach MDM for further action.*	*HES*	*MDM*	*Meter Number, event date& time, event Code /description*
5.3	*Share with WFM to Notify utility personnel for site inspection*	*MDM*	*WFM*	*Consumer number, Meter Number, Tamper code, address*
5.4	*On analysis and detection of valid tamper event or malfunction, the tamper eventmust be sent / pushed by the meter to the HES /MDM*	*Meter*	*HES/ MDM*	*Consumer number, meter number, action to be triggered (disconnect), action date & time*
5.5	*HES sends disconnect command to meter*	*HES*	*Meter*	*Meter Number, action (disconnect)*
5.6	*Tamper event shared with CIS/CRM. Billing determinants are updated fortamper invoicing*	*MDM*	*CIS / CRM*	*Meter Number, event date& time, event Code /description*
5.7	*Meter re-connection order once tamper issue is resolved*	*MDM*	*HES*	*Meter number, action (re-connect)*
5.8	*HES sends re-connect command to meter*	*HES*	*Meter*	*Meter Number, action(re-connect)*
6.	***Missed interval readings***			
6.1	*On identifying missed interval, HES will re-acquire data for the missing period from meter*	*HES*	*Meter*	*Meter Number, from date& time, to date & time (for which data is missing)*
6.2	*On receiving data request command, meter will send data to HES*	*Meter*	*HES*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh*
6.3	*Missed Interval and Reads Data acquired by MDM*	*HES*	*MDM*	*Meter Number, readings with date & time*
7.	***Consumer connection outage/restoration event***			
7.1	*Outage/restore event recorded by meter is sent to HES as and when event occurs*	*Meter*	*HES*	*Meter Number, Outage / restoration Date / Time, Power On or Off count*
7.2	*Outage / Restoration Notification*	*HES*	*MDM*	*Meter Number, Outage /restoration Date / Time, Power On or Off count*
7.3	*Sharing Outage / Restoration Notification*	*MDM*	*OMS/CIS-CRM*	*Meter Number, Outage /restoration Date / Time,*

				Power On or Off count
7.4	*Meter read request from OMS to identify service outage / restoration*	*OMS*	*MDM → HES*	*Meter Number,*
7.5	*Meter responds to event poll from HES*	*Meter*	*HES*	*Meter number, Status (live/dead)*
8.	***Remote firmware upgrades/ meter configuration changes***			
8.1	*Remote firmware upgrade*	*HES*	*Meter*	*Firmware*
8.2	*Configuration Commands: Change tariff parameters, Synchronize clock, Registers reset (status, max, tampering)*	*HES*	*Meter*	*Meter number, tariff parameters, registers status, event type andpriority*
8.3	*Status update of Firmware / Configuration*	*Meter*	*HES*	
9.	***Load monitoring at demand side***			
9.1	*When there is a load violation event recorded in the meter, the information is sent to the CC*	*Meter*	*HES → MDM*	*Meter Number, max demand, date & time ofload violation*
10.	***Time synchronization***			
10.1	*Synchronizing RTCs of meters / DCUs/ACP*	*HES*	*DCU/Meter*	*Time Setting*
11.	***Metering network changes***			
11.1	*Change / new installation in Meter / DCU Network Hierarchy*	*Meter /DCU*	*HES*	*Network identification info including DCUs*
11.2	*Change / new installation in Meter / DCU Network Hierarchy*	*HES*	*MDM*	*Network identification info including DCU*
12.	***New consumer connection***			
12.1	*Receive verified pre & post-paid new consumer requests*	*CIS-CRM/ Billing*	*MDM*	*Consumer name, address. Connection request etc.*
12.2	*Generate meter installation order*	*MDM*	*WFM*	*Consumer ID & details*
12.3	*Receive meter installation report*	*WFM*	*MDM*	*Meter number, DT no, Feeder & reading*
12.4	*Requesting instant, interval & events data from meters*	*MDM*	*HES → Meter*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kW etc.)*
12.5	*Acquire instant, interval / events data from meter by*	*HES*	*MDM*	*Meter Number, Reading date & time, reading*

Sr.	Use Case Activity Description	Source	Destination	Info Exchanged
	HES which then reaches MDM system.			*params (kWh, kVAh, kW etc.)*
12.6	*Once new meter remote readverification is over, confirm new connection with other applications*	*MDM*	*Billing / CIS-CRM*	*Consumer ID, Consumer address, Meter Number, initial reading etc.*
13.	***Migrate post-paid consumer to prepaid mode***			
13.1	*Receive migration request*	*CIS-CRM/ Billing*	*MDM*	*Migration request for post-paid consumer with profile*
13.2	*Setup prepaid consumer profile in prepaid engine. If no change in meter is required, skip next two steps*	*MDM*	*Prepaid Engine*	*Prepaid consumer profile*
13.3	*Generate prepaid meter installation order if required*	*MDM*	*WFM*	*Consumer ID & details*
13.4	*Receive meter installation report*	*WFM*	*MDM*	*Meter number, DT no, Feeder & reading*
13.5	*Enable prepaid mode in meter*	*Prepaid engine*	*HES → Meter*	*Engineering token*
13.6	*Receive activation confirmation*	*HES*	*MDM*	*Activation status*
13.7	*Request instant, interval & events data from meter*	*MDM*	*HES → Meter*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kW etc.)*
13.8	*Acquire instant, interval / events data from meter byHES which then reaches MDM system.*	*HES*	*MDM*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kW etc.)*
13.9	*Once meter remote read verification is over, share migration request completion detail with other modules*	*MDM*	*Billing / CIS-CRM*	*Prepaid consumer profile*
14.	***Migrate prepaid consumer to post-paid mode***			
14.1	*Receive migration request*	*CIS-CRM*	*MDM*	*Migration request for prepaid consumer with profile*
14.2	*Request meter data*	*MDM*	*HES → Meter*	*Meter Number, Consumer ID*

14.3	*Acquire instant, interval / events data from meter byHES which then reaches MDM system.*	*HES*	*MDM*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kW etc.) with balance credit*
14.4	*Send meter disconnectcommand*	*MDM*	*HES → Meter*	
14.5	*Receive connection status*	*HES*	*MDM*	*Disconnect status*
14.6	*Enable post-paid mode in meter*	*MDM*	*HES → Meter*	*Engineering token*
14.7	*Receive activation of post-paid mode*	*HES*	*MDM*	*Activation Status*
14.8	*Request instant, interval & events data from meter*	*MDM*	*HES → Meter*	*Meter Number, Consumer ID*
14.9	*Acquire instant, interval / events data from meter byHES which then reaches MDM system.*	*HES*	*MDM*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kW etc.)*
14.10	*Once meter remote read verification is over, share migration request completiondetail with other modules*	*MDM*	*Billing / CIS-CRM*	*Post-paid consumer profile and meter data along with credit balance*
15.	***Consumer Registration in Consumer Portal/ App***			
15.1	*Consumer clicks on new user on consumer portal/ App, provides RMN or email ID and submits data*	*Portal/ App*	*CIS/CRM*	*Request for registration with RMN/email ID*
15.2	*Utility receives request for registration and sends OTP after verification*	*CIS/CRM*	*Email/Message Gateway*	*OTP*
15.3	*Consumer submits OTP*	*Portal/ App*	*CIS/CRM*	
15.4	*Consumer receives registration detail*	*CIS/CRM*	*Email Gateway*	*Login ID and default password*
15.5	*Consumer submits first login request*	*Portal/ App*	*CIS/CRM*	
15.6	*System seeks passwordchange*	*CIS/CRM*	*Portal/ App*	
15.7	*Consumer changes default password*	*Portal/ App*	*CIS/CRM*	
16.	***Consumer Access to Consumption, Billing & Profile Data***			
16.1	*Consumer logs in to Portal/ App*	*Portal/ App*	*MDM*	
16.2	*Consumer Profile for Portal/ App*	*CIS-CRM*	*MDM →Portal/ App*	*Name, Account, Address, Service Points, K Number*

16.3	*Consumption Data*	*MDM*	*Portal/ App →UI*	*Consumption profile*
16.4	*Billing (post-paid) / Credit Balance (prepaid)*	*Billing → MDM*	*Portal/ App*	*Post-paid Billing history/ Current Bill, Prepaid Recharge history*
17.	***Prepaid Consumer Recharge***			
17.1	*Consumer logs into Portal / Mobile App*	*Mob App /Portal*	*UI*	*Login*
17.2	*Consumer fills-in required detail in UI and requests recharge*	*UI→ Prepaid App*	*Payment Gateway*	*Consumer ID, Recharge amount*
17.3	*Consumer selects paymentmethod*	*Payment Gateway*	*Net banking /Credit Card / Wallet etc.*	
17.4	*Consumer receives payment acknowledgement*	*Payment Gateway*	*Prepaid App→Portal→ UI*	
17.5	*Calculate credit balance for prepaid consumer & update prepaid meter*	*Prepaid App*	*HES→Meter*	*Consumer credit balance (virtual token)*
17.6	*Notify credit balance to consumer*	*Prepaid App*	*Email/SMS Gateway*	*Credit Balance*
18.	***Post-Paid Consumer Bill Payment***			
18.1	*Consumer logs into Portal / Mobile App*	*Mob App /Portal*	*UI*	*Login*
18.2	*Consumer is presented with Billing history and current outstanding Bill*	*Billing → MDM*	*Portal/ App→UI*	*Outstanding Bill*
18.3	*Consumer requests bill payment. Option to download bill*	*UI→Billing*	*Payment Gateway*	
18.4	*Consumer selects paymentmethod*	*Payment Gateway*	*Net banking /Credit Card / Wallet etc.*	
18.5	*Consumer receives payment acknowledgement*	*Payment Gateway*	*Billing→ Portal/ App→UI*	
18.6	*Payment acknowledgementthrough email/SMS*	*Billing*	*Email/SMS Gateway*	*Payment acknowledgemen t*
19.	***Consumer Service Request***			
19.1	*Consumer logs in to Portal/ App*	*Portal/ App*	*CIS/CRM*	
19.2	*Consumer requests for service*	*UI*	*CIS/CRM*	*Service request*
19.3	*System assigns SRN & sends acknowledgement*	*CIS/CRM*	*Portal/ App→UI,*	

			Email/SMS Gateway	
19.4	*System resolves request & updates consumer records*	*CIS/CRM*	*Portal/ App→UI, CIS/CRM*	
19.5	*System closes SRN*	*CIS/CRM*	*Email/SMS Gateway*	
20.	***Consumer Complaints***			
20.1	*Consumer logs into Portal/ App*	*Portal/ App*	*CIS/CRM*	
20.2	*Consumer registers complaint*	*UI*	*CIS/CRM*	*Specific complaint*
20.3	*System assigns CRN & sends acknowledgement*	*CIS/CRM*	*Portal/ App→UI, Email/SMS Gateway*	
20.4	*System assigns resolution based on nature of complaint*	*CIS/CRM*	*CIS / OMS / WFM*	
20.5	*Target system reports completion of complaint*	*OMS / WFM*	*CIS/CRM*	
20.6	*System updates records andcloses CRN*	*CIS/CRM*	*CIS, Email/SMS Gateway*	
21.	***Demand read of meters from consumer premises***			
21.1	*Requesting instantaneous,interval, load profile & events data from meters*	*MDM*	*HES→Meter*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kWetc.)*
21.2	*Acquire instant, interval, load profile & events data from meters by HES which then reaches MDM system.*	*Meter→ HES*	*MDM*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kW etc.)*
22.	***Staff User Access to Utility Portal***			
22.1	*User logs in to Portal*	*Portal*	*MDM*	*Login with appropriate credentials*
22.2	*User selects available functions*	*MDM*	*Portal → UI*	
22.3	*User logs out*	*Portal → UI*	*MDM*	

The key use cases to be enabled by AMISP for non-contiguous electrical locations as mentioned in Section 6 Clause 1.2 (C) are provided below. Please note that these are illustrative list of use cases only and is not an exhaustive list. Further please note that all IS Standards shall be applicable.

Sr.	*Use Case Activity Description*	*Source*	*Destination*	*Info Exchanged*
1.	*Collection of Daily Meter Profile*			

1.1	*At scheduled frequency HES should pull the Daily Meter Data from Smart Meter over communication Channel*	*HES*	*Meter*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF, Non-critical Event Code / Date*
1.2	*Meter should send the data to HES. Provision for retrial should be there if Meter data is not collected within time. Consumption details including non-critical events will be in 15 min/30 min block data, and data could beincremental to what was sent by meter in preceding instance*	*Meter*	*HES*	*Meter Number, reading date & time, kW, kVA, kWh, kVAh, PF, Non- critical Event Code / Date*
1.3	*HES should send the data to MDM*	*HES*	*MDM*	*Meter Number, readingdate & time, kW, kVA, kWh, kVAh, PF*
2.	***Utility detects tampering at meter site***			
2.1	*High priority events capturedby Meter sent to HES as and when occurred*	*Meter*	*HES*	*Meter Number, event date& time, event Code /description*
2.2	*High priority events reach MDM for further action.*	*HES*	*MDM*	*Meter Number, event date& time, event Code /description*
2.3	*Share with WFM to Notify utility personnel for site inspection*	*MDM*	*WFM*	*Meter Number, Tamper code, address*
2.4	*On analysis and detection of valid tamper event or malfunction, the tamper event must be sent / pushed by the meter to the HES /MDM*	*Meter*	*HES/ MDM*	*Meter number, action date & time*
3.	***Missed interval readings***			
3.1	*On identifying missed interval, HES will re-acquiredata for the missing period from meter*	*HES*	*Meter*	*Meter Number, from date& time, to date & time (for which data is missing)*
3.2	*On receiving data request command, meter will send data to HES*	*Meter*	*HES*	*Meter Number, readingdate & time, kW, kVA, kWh, kVAh*
3.3	*Missed Interval and Reads Data acquired by MDM*	*HES*	*MDM*	*Meter Number, readings with date & time*
4.	***Meter connection outage/restoration event***			
4.1	*Outage/restore event recorded by meter is sent to HES as and when event occurs*	*Meter*	*HES*	*Meter Number, Outage / restoration Date / Time, Power On or Off count*

4.2	*Outage / Restoration Notification*	*HES*	*MDM*	*Meter Number, Outage / restoration Date / Time, Power On or Off count*
4.3	*Sharing Outage / Restoration Notification*	*MDM*	*OMS/CIS-CRM*	*Meter Number, Outage / restoration Date / Time, Power On or Off count*
4.4	*Meter read request from OMS to identify service outage / restoration*	*OMS*	*MDM → HES*	*Meter Number,*
4.5	*Meter responds to event poll from HES*	*Meter*	*HES*	*Meter number, Status (live/dead)*
5.	***Remote firmware upgrades/ meter configuration changes***			
5.1	*Remote firmware upgrade*	*HES*	*Meter*	*Firmware*
5.2	*Configuration Commands: Change tariff parameters, Synchronize clock, Registers reset (status, max, tampering)*	*HES*	*Meter*	*Meter number, tariff parameters, registers status, event type and priority*
5.3	*Status update of Firmware / Configuration*	*Meter*	*HES*	
6.	***Load monitoring at demand side***			
6.1	*When there is a load violation event recorded in the meter, the information issent to the CC*	*Meter*	*HES → MDM*	*Meter Number, max demand, date & time of load violation*
7.	***Time synchronization***			
7.1	*Synchronizing RTCs of meters / DCUs/ACP*	*HES*	*DCU/Meter*	*Time Setting*
8.	***Metering network changes***			
8.1	*Change / new installation in Meter / DCU Network Hierarchy*	*Meter / DCU*	*HES*	*Network identification info including DCUs*
8.2	*Change / new installation in Meter / DCU Network Hierarchy*	*HES*	*MDM*	*Network identification info including DCU*
9.	***New meter connection***			
9.2	*Generate meter installation order*	*MDM*	*WFM*	*Meter Number & details*
9.3	*Receive meter installation report*	*WFM*	*MDM*	*Meter number, DT no, Feeder & reading*
9.4	*Requesting instant, interval & events data from meters*	*MDM*	*HES → Meter*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kW etc.)*
9.5	*Acquire instant, interval / events data from meter by HES which then reaches MDM system.*	*HES*	*MDM*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kW etc.)*

9.6	*Once new meter remote read verification is over, confirm new connection with other applications*	*MDM*	*Billing / CIS-CRM*	*Meter address, Meter Number, initial reading etc.*
10.	***Demand read of meters from meter premises***			
10.1	*Requesting instantaneous, interval, load profile & events data from meters*	*MDM*	*HES→Meter*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kW etc.)*
10.2	*Acquire instant, interval, load profile & events data from meters by HES which then reaches MDM system.*	*Meter→ HES*	*MDM*	*Meter Number, Reading date & time, reading params (kWh, kVAh, kW etc.)*
11.	***Staff User Access to Utility Portal***			
11.1	*User logs in to Portal*	*Portal*	*MDM*	*Login with appropriate credentials*
11.2	*User selects available functions*	*MDM*	*Portal → UI*	
11.3	*User logs out*	*Portal → UI*	*MDM*	

4. **Section 6 Clause 4 of the SBD:**

"4. Consumer Indexing

Consumer indexing will be carried out/verified for the incoming population of smart meters for end-to-end metering at contiguous electrical locations in the selected AMI Project Area and for dispersed metering of DTs/ Feeders at non-contiguous electrical locations in the selected AMI Project Area. For this a door-to-door survey shall be required for each meter installed and tallying it with the consumer related records (physical, electrical and commercial) available with the Utility. In establishing the linkage of the consumer meter to the electric network, the asset (including the meter) codification as used by the utility GIS (or as per standards set by the utility) shall be strictly followed. If the GIS asset database is available, the verified consumer data shall be uploaded into the GIS database by the Utility for a single point of truth, presentation and secondary evaluation. If GIS is not available, then the AMISP is required to create a standalone consumer indexing database. This database of electrical indexing shall have the following broad parameters:

…"

5. Section 6 Clause 6 of the SBD: Following clause shall be included in Clause 6.2.2 (*below the table on list of reports*):

"These reports shall be generated for both contiguous as well as non-contiguous electrical locations. However, for non-contiguous electrical locations as mentioned in Clause 1.2 (C), all relevant reports shall be generated as per scope except for those that are not technically feasible for example, consumer related reports like revenue analytics, load recording of consumers etc."

6. **Section 6 Clause 9.4 of the SBD: A new table on minimum performance tests to be carried out as part of the Site Acceptance test (SAT) for Non-contiguous electrical locations as mentioned in Clause**

1.2 (C) shall be added below the existing use cases table:

"9. Tests, Inspections and Management of the Quality Assurance / Quality Control Program"

9.4 Site Acceptance Test:

… The list of final tests to be carried out in the field shall be listed in the site-testing document by the AMISP. Among others, the site testing document shall include the following minimum performance tests for end-to-end metering carried out in contiguous electrical locations:

Data Type	***Performance Requirement***
1. Load Profile Data Read[1]	
One-month block load profile for installed meters	*From 98% of the meters in 12 hours after the midnight*
2. Billing Profile Data Read[2]	
Billing profile data for installed meters	*From 98% of the meters in 12 hours after the midnight*
3. On-Demand Remote reads of meters	
Collection of 7 days of interval energy data and the current total accumulated energy from a selected individual meter	*Within 2 minutes*
4. Remote connect / disconnect	
Action to response for individual meter	*Less than 3 mins*
5. Updating of data on consumer portal/ app	
Updating of individual consumer data on portal/ app afterreceiving the data in MDM	*Action performed for active on portal consumers within 5 minutes after receiving the data in MDM*
6. Ping Response with acknowledgement/ response for selected meters	
For installed meters	*Action performed at 98% of meters within [5] minute; and*
For an individual meter	*Action performed within 3 seconds*

[1] This performance test shall be done during SAT, from second lot of meters onwards

[2] This performance test shall be done during SAT, from second lot of meters onwards

Data Type	*Performance Requirement*
7. Meter loss and restoration of supply	
Receiving of alert for all affected AMI meters	*Alert to be received within 3 minutes for 60% of meters*
8. Meter Tamper Alerts	
Receiving of alert for an individual meter	*Alert to be received within 3 minutes*
9. Power Quality Alerts	
Receiving of alert for an individual meter	*Alert to be received within 5 minutes*
10. Firmware upgrade with acknowledgement/ response for selected meters	
For installed AMI meters (for a batch of at least 20% of installed base)	*Action performed at 99% of meters within [18] hours; and*
	Action performed at 99.9% of meters within [24] hours
11. ***Remotely altering settings in meter***	
For installed AMI meters (for a batch of at least 20% of installed base)	*Action performed at 99% of meters within [8] hours; and*
	Action performed at 99.9% of meters within [24] hours
12. Remotely read events logs	
For reading the full event log for installed AMI meter	*Action performed at 90% of meters within [30] minutes; and*
	Action performed at 99% of meters within 1 hour; and
	Action performed at 99.9% of meters within [6] hours.
13. VEE processing	
For all installed meters	*Action performed in [15] mins*
14. Computation of Billing Determinants	
For all installed meters	*Action performed in [2] hours*
15. Prepaid Recharge	
Payment success to consumer acknowledgement	*Within 5 mins*
Payment success to meter update (From MDM to HES to Meter)	• *From 90% of meters within 30 minutes* • *From 99% of meters within 1 (one) hour*
16. Utility User Interface	

Data Type	*Performance Requirement*
Manual data entry of new value appears on screen	*Less than 6 secs*
Acknowledgement of any action request	*Within 3 secs*
Display update rate	*2 secs*
17. ***Disaster Recovery Capability (Refer to Clause 2.7.3.3.9 of this Section for details)***	
Recovery Time Objective (RTO)	*[4 hours] as agreed*
Recovery Point Objective (RPO)	*[2 hours] as agreed*
18. ***On-Demand Remote reads of meters***	
Collection of 7 days interval energy data and the current total accumulated energy from a group of 10% of installed base ofmeters (configurable)	*95% complete within 2 hrs* *100% complete within 4 hrs*

Also, among others, the site testing document shall include the following minimum performancetests for DT/ Feeder metering carried out in non-contiguous electrical locations:

Data Type	*Performance Requirement*
1. Load Profile Data Read[3]	
One-month block load profile for installed meters	*From 98% of the meters in 12 hours after the midnight*
2. On-Demand Remote reads of meters	
Collection of 7 days of interval energy data and the current total accumulated energy from a selected individual meter	*Within 2 minutes*
3. Ping Response with acknowledgement/ response for selected meters	
For installed meters	*Action performed at 98% of meters within [5] minute; and*
For an individual meter	*Action performed within 3 seconds*
4. Meter loss and restoration of supply	
Receiving of alert for all affected AMI meters	*Alert to be received within 3 minutes for 60% of meters*
5. Meter Tamper Alerts	
Receiving of alert for an individual meter	*Alert to be received within 3 minutes*
6. Power Quality Alerts	
Receiving of alert for an individual meter	*Alert to be received within 5 minutes*
7. Firmware upgrade with acknowledgement/ response for selected meters	

[3] This performance test shall be done during SAT, from second lot of meters onwards

Data Type	*Performance Requirement*
For installed AMI meters (for a batch of at least 20% of installed base)	*Action performed at 99% of meters within [18] hours; and*
	Action performed at 99.9% of meters within [24] hours
8. Remotely altering settings in meter	
For installed AMI meters (for a batch of at least 20% of installed base)	*Action performed at 99% of meters within [8] hours; and*
	Action performed at 99.9% of meters within [24] hours
9. Remotely read events logs	
For reading the full event log for installed AMI meter	*Action performed at 90% of meters within [30] minutes; and*
	Action performed at 99% of meters within 1 hour; and
	Action performed at 99.9% of meters within [6] hours.
10. VEE processing	
For all installed meters	*Action performed in [15] mins*
11. On-Demand Remote reads of meters	
Collection of 7 days interval energy data and the current total accumulated energy from a group of 10% of installed base ofmeters (configurable)	*95% complete within 2 hrs 100% complete within 4 hrs*

7. Other terms and conditions of the SBD shall remain unchanged and shall apply for the additional scopeof work as well.

Proposal:

The above proposed addendum for allowing usage option of SMC meter boxes and key changes to be madein the existing AMISP SBD in case DISCOM opts to undertake the Smart System Metering of non-Phase-I areas alongwith AMISP RFP for Phase-I areas, may be considered for approval.