

ANNEXURE 1

Clarifications/Amendments against Expression of interest floated vide No. MePDCL/CE (PMC)/Tech-040/2020-21/8Dated 15th February 2021 after the meeting on 25.02.2021.

SL. No.	Reference:	As per EOI Document:	Queries:	Clarifications/Amendments:
1	Clause 3 (v): Page 3.	Pre-qualifying requirements: Manufacturer should possess fully computerized automatic test bench system for carrying out routine and acceptance tests as per IS-14697:1999 (Amended up to date). Documentary proof in support of the same needs to be attached.	Correct standard for above requirement will be IS 12346 (1988). Please amend the same.	The word "IS-14697:1999" appearing in Clause 3 (v) is amended as "IS: 12346 :1999".
2	Clause 3 (ii): Page 2.	ii) The average annual turnover of the manufacturer for the three best financial yearsindicating his turn over for the last three financial years has also to be attached.	Turnover Criteria should not be made applicable on MSME .	No change.
3	Clause 3(iii) : Page 3.	iii) The manufacturer should have supplied more than 1 (one) lakh Singledisplay. Documentary proof in support of the claim needs to be attached.	Supply Criteria should not be made applicable on MSME .	No change.
4	Clause 4: Page 6.	METERFRAME: As per latest IS 13010 (2002) or latest amendments.	The above standard is asked for electromechanical meter not for static energy meter. Please delete this clause.	The Clause 4, Page 6 stands deleted.
5	Clause 5: Page 7.	Clock time accuracy: ± 3 min/year – as per CBIP Tech Rep 325.	To accept Real Time clock drift ± 7 min/year – as per CBIP 325	The Clause 5: Page 7 is amended as " ± 7 min/year – as per CBIP 325.
6	Clause 11.5: Page 9	The terminal block should be made of high grade non-hygroscopic, fire retardant, fire resistant, glass reinforced polycarbonate with terminal holes of minimum dia. 10 mm and should be suitable to accommodate the insulation of the conductors meeting the requirement of IS13779/CBIP Report-325.	As per CBIP Report – 325, terminal holes dia. for 5-30Amp Meter should minimum 5.5 mm and for 10-60Amp Meter should minimum 8.5 mm. We request you to amend the same.	The Clause 11.5: Page 9 is amended as "The terminal block should be made of high grade non-hygroscopic, fire retardant, fire resistant, glass reinforced polycarbonate with terminal holes of minimum dia. 5.5 mm for 1-phase staticmeter and minimum dia. 8.5 mm for 3-phase static meter and should be suitable to accommodate the insulation of the conductors meeting the requirement of IS13779/CBIP Report-325".
7	Clause 11.11: Page 10.	The meter should be fitted with SHUNT for measuring current in the phase element. The neutral element may have either CT or SHUNT or HALL EFFECT SENSOR with proper isolation.	Kindly accept CTs in phase as measuring elements instead of SHUNT for three phase energy meter.	The first para of the Clause stands amended as "The meter should be fitted with CT for measuring current in the phase element. The neutral element may have either CT or SHUNT or HALL EFFECT SENSOR with proper isolation". Other content of the clause remain the same.
8	Clause 11.13: Page 10.	The meter cover should be fixed by using ultra sonic welding and break-to-open type. The meter shall have top cover opening detection mechanism. The cover opening event shall be indicated display continuously in auto scroll mode with KWh or through LED and shall be logged in memory. The detection and logging mechanism shall work even when meter is not energized.	We request you to accept Chemical Welding also in addition to ultra-sonic welding for break to open.	The Clause 11.3 is amended as "The meter cover should be fixed by using ultra sonic welding / chemical welding and break-to-open type. The meter shall have top cover opening detection mechanism. The cover opening event shall be indicated display continuously in auto scroll mode with KWh or through LED and shall be logged in memory. The detection and logging mechanism shall work even when meter is not energized."

9	Clause 12.1(v): Page 11.	v) The meter should work in absence of two phase and record relevant energy on any one phase & neutral or any one phase & earth.	We request you to delete this clause as it is Single Phase requirement.	It is hereby clarified that the Clause 12.1(v) relates to 3-phase meter only.
10	Clause 12.1 (vii): Page 11.	vii) Meter should meet accuracy under magnetic influence as per CBIP 304 latest amendments.	We request you to amend CBIP 304 to CBIP 325.	The word "CBIP 304" in Clause 12.1 (vii) stands amended as "CBIP 325".
11	Clause 12.1 (xi): Page 11.	xi) Single Wire Metering: Meters shall also record energy when only one phase recording shall be within $\pm 2\%$ accuracy.	We request you to accept meter recording shall be within $\pm 4\%$ accuracy like other tamper accuracy requirement.	No change.
12	Clause 12.4 Page 13-14	<p>12.4 EVENT LOGGING: The meter shall be capable of recording occurrences and restoration with date and time irrespective of the following tamper conditions: a. Missing Potential for all phases (phase wise), even without any load drawal. b. Voltage unbalance c. Current reversal for all phases (phase wise), when threshold value must be 10% of Ib (It must not be restored without threshold current). d. All potential missing or Power failure. e.Magnetic Disturbances (IS 13779 & CBIP 325) f. Neutral Disturbances (If it logged). g. Current Terminal open The meter should log all the following events:- Neutral Disturbance : 40 events ii. Selection of “one wire power” : 40 events iii. Events top cover opening : 1 event iv. Magnetic event : 40 events v. Abnormal external field/ESD : 40 events vi. Low voltage (below 180V) : 40 events Note: The event count is minimum. Snapshot values of Phase Voltage, Phase Current & Phase wise Power Factor, Active Energy value during occurrence & restoration to be provided in all the above mentioned tamper conditions in BCS with date and time. The occurrence and restoration of tamper should be equal to 5 min. (except Magnetic and Neutral Disturbances tampers) All authenticated commands should be Base Computer Software controlled. All transactions with meter should be date and time logged in the downloaded data (minimum 25 transactions).</p>	<p>1. Threshold values for a. , b. and g. not provided in the Technical specification.</p> <p>2. Event count shall be applicable for compartments not for individual type of events</p>	<p>The Clause12.4 is amended as follows; “12.4 EVENT LOGGING: The meter shall be capable of recording occurrences and restoration with date and time irrespective of the following tamper conditions: a. Missing Potential for all phases (phase wise), even without any load drawal. b. Voltage unbalance c. Current reversal for all phases (phase wise), when threshold value must be 10% of Ib (It must not be restored without threshold current). d. All potential missing or Power failure. e.Magnetic Disturbances (IS 13779 & CBIP 325) f. Neutral Disturbances (If it logged). g. Current Terminal open The meter should log the following events with date and time stamping compartment wise:- 1. Current related - 100 events (minimum) 2. Voltage related -100 events (minimum) 3. Others (viz. Events top cover opening, Magnetic event, Abnormal external field/ ESD, etc)- 100 events (minimum) Snapshot values of Phase Voltage, Phase Current & Phase wise Power Factor, Active Energy value during occurrence & restoration to be provided in all the above mentioned tamper conditions in BCS with date and time. The occurrence and restoration of tamper should be equal to 5 min. (except Magnetic and Neutral Disturbances tampers) All authenticated commands should be Base Computer Software controlled. Threshold values are to be provided by the Manufacturer”</p>
13	Clause 13.1: Page 14.	13.1 The meters shall have bright LCD electronic display with minimum 6+1 digits. The height X width of the digit should be 8.0 x 5.0 mm (minimum).	The height X width of the 6 digits should be 8.0 x 5.0 mm and The height X width of the 7th digit(decimal digit) should be 5.0 x 3.0 mm. kindly accept as same	No change.

14	Clause 15.1 Page 16	y. Power OFF Hours (Previous Month ,i.e. . . since the last M.D. reset).	Is requirement for current billing month or previous billing month for power off Hours?	The Clause 15.1y. is amended as "y. Power OFF Hours (Previous Month)".
15	Clause 15: Page 15.	15.0 SCROLLING DISPLAY PARAMETERS: The manufacturer should provide 2(two) push button for scrolling of the parameter in which one is for forward scrolling and the other for backward scrolling and this would be applicable for capacitive type scrolling mode.	For 1Ph Meter 2 push button for scrolling is not possible. We request you to accept 1Ph meter with one push button.	The Clause 15.0 is amended as follows; "15.0 SCROLLING DISPLAY PARAMETERS: The manufacturer should provide 1 (one) push button for 1-phase meter and 2-push button for 3-phase meter. In case of three phase meter, one is for forward scrolling and the other for backward scrolling and this would be applicable for capacitive type scrolling mode.
16	Clause 17.1: Page 18 & 19	The meter should be able to display the parameters in no-power condition by the use of push button and also should be able to upload the data to the MRI. This provision should be made in the form of rechargeable super capacitor back-up and primary battery.	We request you to remove rechargeable super capacitor. We will provide secondary battery for data downloading in no-power conditions. The meter shall able to upload the data to the MRI with the help of primary battery by enabling the communication mode by pressing push button. Kindly accept.	The Clause 17.1 stands amended as "The meter should be able to display the parameters in no-power condition by the use of push button and also should be able to upload the data to the MRI. This provision should be made in the form of rechargeable battery back-up and primary battery."
17	Clause 17.2: Page 19	METER READING AT POWER OUTAGE AND BATTERY: 17.2 The super capacitor shall be capable of back-up for display of parameters up to 48 hours from the instant of power failure.	we will provide cum kwh & md kw display parameters for billing purpose up to 48 hours. kindly accept.	The Clause stands amended as "17.2 The rechargeable battery shall be capable of back-up for display of parameters up to 720 hours from the instant of power failure".
18	Clause 19.0 : Page 19.	LOAD SURVEY & BILLING POINT REQUIREMENTS: The Meter shall record load survey of minimum 45 days (Power-On days) for KWH, KVAH, KW, KVA & Power Factor with integration period of 30 minutes. It shall be possible to select either demand or energy view at the BCS end (Load survey report should be available for all the available parameters). Also snap shot of Instantaneous values of Voltage, Phase Current, KWh reading, KW/KVA and PF shall be available with load survey.	As meter is DLMS Complaint and as per DLMS IS:15959 in load survey only three parameters average voltage,kwh & KVAH required. Kindly accept as per DLMS IS:15959	No change.
19	Clause 20.1: Page 20	(a) Optical port will be provided for local communication and RS-232 in the form of RJ-11. The port for local communication and baud rate shall be as per IS 15959. The RS-232 port should be able to operate on Low Power Radio with RF Mesh (directly up to DCU). Different communication technologies shall follow relevant National or International Standard as applicable.	We request you to remove RS232 in the form of RJ-11 for 1Ph Meter becausethere is no use for 1Ph Meter and also request you to remove Low Power Radio with RF Mesh (directly up to DCU).	The Clause stands amended as "(a) Optical port will be provided for local communication and RS-232 in the form of RJ-11 for remote communication. The port for local communication and baud rate shall be as per IS 15959".
20	Clause 25(A) : Page 21.	The offered meters to be tested should be type tested at any CPRI or National Test House.	Consider the other NABL accredited labs	The Clause stands amended as "The offered meters to be tested should be type tested at any CPRI or National Test House or NABL accredited laboratory".

21	Clause 1.0: Page 24	1.1 This specification covers the design, engineering, manufacture,..... made out of Sheet moulding compound or transparent polycarbonate in the State of Meghalaya.	Box with combination of SMC and Polycarbonate will not possible. We will provide with Polycarbonate Box. Please accept the same.	No change.
22	Clause 4.3: Page 25	The meter box shall be such that there shall be minimum 70 mm clearance at the bottom, 40 mm clearance on all top & both sides, 30 mm clearance at the front and 10mm clearance at the back between meter and meter box inner wall.	Box clearance depend upon the design of meter. We request you not to standardise the clearance of meter box. We will provide with our standard polycarbonate box for both 1Ph and 3Ph Meter. Please accept the same	The Clause Clause 4.3 stands amended as " The meter box shall be such that there shall be 70-80 mm clearance at the bottom, 10 mm minimum clearance on top, 10-40 mm on both sides, 10 mm minimum clearance at the front and 10mm clearance at the back between meter and meter box inner wall".
23	Clause 5.5: Page 25	The monogram of MePDCL shall be engraved on the mould of the meter box cover.	We request you to accept screen printing also in addition to engraved also.	The word "Property of MePDCL" shall be engraved in the box or provided seperately in the form of a Sticker. The clause 5.5 also stands amended as "The word "Property of MePDCL" shall be engraved in the box or provided seperately in the form of a Sticker".
24	Clause 5.6 Page 26	The meter box should have an opening (holes) on both the lower portion of the left & right hand part of the meter box for direct entry of the service pipe (40 mm dia) in the box. These two holes should be provided with polymeric materials collapsible gland for the incoming and outgoing cables.	40 mm dia is not required as it is too big	The Clause 5.6 is amended as "The meter box should have an opening (holes) on both the lower portion of the left &right hand part of the meter box for direct entry of the service pipe of up to 17 mm diameter for 1-phase meter box and up to 30 mm diameter for 3-phase meter box. These two holes should be provided with polymeric materials collapsible gland for the incoming and outgoing cables".
25	Clause 5.9 Page 26	4 nos. of key holes of diameter 6 mm shall be provided at the backside of the meter box to facilitate mounting of the meter box on the wall or pole 4 nos. of 75mm long, 6 mm diameter mounting screws with washers shall be provided along with the meter box.	exact 75 mm is too long	The Clause 5.9 is amended as "4 nos. of key holes of diameter 6 mm shall be provided at the backside of the meter box to facilitate mounting of the meter box on the wall or pole. 4 nos. of 75 mm long (maximum), 6 mm diameter mounting screws with washers shall be provided along with the meter box.
26	Clause 6.0: Page 26.	1 no. earth bolt of 6mm diameter x 20mm length with 2 nos. nuts and 2 nos. washers & a spring washer shall be provided. The irremovable earthing symbol is to be provided near earth bolt.	Earthing is not required for polycarbonate meter box. We request you to delete the clause.	Clarified that earthing bolt is not required for poly carbonate box.
27	Clause 9: Page 8	The meter should start registering energy at 0.4% of basic current at unity power factor output of the meter shall not produce more than one output pulse count.		The word "0.4%" appearing in Clause 9: Page 8 is amended as "0.2%". Other content of the clause remain the same.
28	Clause 11.8: Page 10.	The manner of fixing the cables to the terminal block should ensure adequate and should be capable to withstand, a current of 150% I _{max} for two hours continuously.		The words "6 mm. diameters" and "tinned", appearing in Clause 11.8: Page 10 is amended as "6mm ±2 mm diameters" and "zinc" respectively. Other content of the clause remain the same.
29	Clause 30 Page 23	New Clause inserted:		The Clause 30 is inserted in the EOI which reads as : “Clause 30: Warranty -The manufacturer shall provide a warranty for single and three phase static meters for not less than 5½ years from the date of manufacture"

In view of the clarifications and amendments made as indicated above, certain necessary modifications have been incorporated in the GTP formats. The amended GTP formats are also uploaded viz:

1	GTPs OF AC SINGLE PHASE STATIC ENERGY METER WITH LCD DISPLAY OF ACCURACY CLASS 1.0	Annexure - 1A (Amended)	Interested parties are to fill, print and sign their GTP offer from the excel file format “Annexure 1A,1B,1C (Amended)”, uploaded in the MeECL website www.meecl.nic.in . while submitting along with their EOI. The soft copies of the above GTPs are also to be submitted in the Compact Disc along with their EOI.
2	GTPs OF AC THREE PHASE STATIC WHOLE CURRENT ENERGY METER WITH LCD DISPLAY OF ACCURACY CLASS 1.0	Annexure 1B (Amended)	
3	GTPs OF METER BOX (POLYCARBONATE) SUITABLE FOR SINGLE PHASE & THREE PHASE STATICE ENERGY METER	Annexure - 1C: POLYCARBONATE BOX (Amended)	
4	GTPs OF METER BOX (SMC) SUITABLE FOR SINGLE PHASE & THREE PHASE STATIC ENERGY METERS	Annexure - 1C :SMC BOX (Amended)	

LETTER HEAD OF THE FIRM /COMPANY..			
	Annexure - 1A (Amended)		
GTPs OF AC SINGLE PHASE STATIC WHOLE CURRENT ENERGY METER WITH LCD DISPLAY OF ACCURACY CLASS 1.0			
Sl.No.	Description	Minimum Requirement	To be filled by Manufacturer as Offered:
1	Name of Manufacturer		
2	Meter Type& Serial number		
3	Standard Applicable with latest amendments	IS: 13779/1999 IS: 12346/1988 IS: 14434/1998 IS: 15707 IS: 15959 CBIP Technical Report. 325 IEC: 62053-21	
4	Rating		
	Accuracy Class	Class 1.0 or better	
	Rated Voltage	240V	
	Rated Current	Ib: 5.0A	
	Rated Frequency	50Hz ±5%	
	Power Factor	0.5 lag - Unity- 0.8 lead	
	Meter Constant (imp/KWh)	Manufacturer to specify	
5	i. Maximum continuous current rating (Amp)	600% of Ib	
	ii.Continuous current rating of terminals for two hours	150% I _{max}	
	iii.Running with no load & (-) 70 % to 120% of rated voltage	As per IS	
6	Short time over current for 10 milliseconds	As per IS	
7	Starting current at which meter shall run & continue to run	0.2% of Ib at rated voltage and unity power factor	
8	Power loss at rated frequency & reference temperature		
	i. Current circuit at rated voltage	Less than 4VA	
	ii. Voltage circuit at rated current	Less than 1.5W/10VA	
9	Display :		
	i. No. of digits	6+1	
	ii. Character height	8.0 x5.0 mm	
10	Continuous display	Yes (shall never be blanked out in all conditions except during power outage)	
11	Cycle of parameter display	15 seconds	
12	Forward and Backward scroll mode	Required	
13	Auto display mode	Required	
14	Operational indication-LED	KWh	
15	Communication port	i. Optical Port	
		ii. RS-232 (RJ-11)	
16	Battery of Real Time Clock	Non chargeable Lithium-ion having at least 10 year of guaranteed period.	
17	Memory	Manufacturer to specify	
18	Non volatile memory retention time in absence of power	10 (ten) years minimum.	
19	Memory capacity (MB)	Manufacturer to specify	
20	Perfomance of meter in tamper condition i. Incoming & Outgoing terminals interchange ii. Phase and neutral interchange iii. Incoming neutral disconnected. Outgoing neutral & Load connected to earth. iv. Incoming neutral connected to earth through resistor & load to earth v. Incoming (Phase & neutral) interchanged. load connected to earth vi. Incoming & Outgoing (phase & neutral) interchanged. load connected to earth.	The meter should work within the specified accuracy and energy is to be recorded in the forward direction	
21	Indication of above tamper condition	Auto/Push button scroll mode or Legend	
22	Provision to read in the absence of power	Required through rechargeable battery & by the use of push button	
23	General & Construtional Requirement :		
	i. Base	i. High impact strength non-hygroscopic, fire retardant, fire resistant, UV stabilized poly carbonate (LEXAN 503R or equivalent) ii. Shall conform to IP51/IP54 class degree of protection as per relevant standard.	
23	ii. Meter cover	High impact strength non-hygroscopic, fire retardant, fire resistant, UV stabilized poly carbonate (LEXAN 943A or equivalent)	
	iii. Terminal Block	i. High impact strength non-hygroscopic, fire retardant, fire resistant, UV stabilized poly carbonate (LEXAN 503R or equivalent)	
		ii. As per IS:13779 & CBIP technical Report 325	
		iii. dia. of terminal holes = 5.5 mm (min)	

	iv. Terminal cover	High impact strength non-hygroscopic, fire retardant, fire resistant, glass reinforced transparent poly carbonate & non-detachable with hinges arrangement (LEXAN 943A or equivalent)	
	v. Screw Material	Zinc/nickel plated	
	vi. Screw Size	2 screw in each terminal of size not less than M4 & head of 6±2mm dia.	
24	Centre to centre clearances between adjacent terminals	As per CBIP 325	
25	Transducers		
	i. Input	CT provided in phase and neutral element	
		Voltage : PT less Potential provider.	
	ii. Output	LCD	
	iii. CT- number of turns	Manufacturer to specify	
26	Fixing/sealing arrangement		
	i. Fixing of meter	3 fixing holes (one at top & two at bottom under terminal block). The top fixing screw shall not be accessible after meter is fixed to the meter box base	
26	ii. Sealing of meter cover to Base	At least two fixing screws for fixing meter cover with the meter base shall be provided. Each screw shall have at least one hole for sealing arrangement. The arrangement should be in such a manner that any access to the working part of the meter body will not be possible without breaking/removing/ tamper the said seals.	
27	Type of hinged undetectable terminal cover	Shall be hinged	
28	Suitability of meter to sustain over votage	Should sustain	
29	Electromagnetic compatibility (EMI/EMC severity level)	As per IS : 13779/1999	
30	Effect on accuracy of external electromagnetic interference of electrical discharge, external magnetic field	Should work within accuracy as per latest IS & CBIP technical report 325 with latest amendment.	
31	Injection of DC supply in neutral	Error beyond ±4% will not be acceptable for conditions not specified in IS:13779/1999 & CBIP technical report 325	
32	Current reversal, neutral disturbance, magnetic disturbance, magnetic tamper, etc	Current related events:100 (min) Voltage related events: 100 (min) Others : 100 (min)	
33	Drift in accuracy of measurement with time	Should not drift	
34	Name plate details	As per IS : 13779/1999 Clause 7.1	
35	Approximate weight of meter	Manufacturer to indicate	
36	Type of mounting	Projection type	
37	Calibration	Meter shall be software calibrated at factory & there shall not be any mechanical form of calibration so that any adjustment in calibration is not possible after freezing the meter constant	
38	Mounting of components on PCB	Shall be SMT & ASIC type	
39	Tests & Test Conditions	As per Clause 12 of IS: 13779/1999 or its latest amendments	
40	Warranty of the meter:	Not less than 5½ years	

(Signature of Authorised Signatory)

Name:

Designation:

Address:

LETTER HEAD OF THE FIRM /COMPANY..			
		Annexure 1B (Amended)	
GTPs OF AC THREE PHASE STATIC WHOLE CURRENT ENERGY METER WITH LCD DISPLAY OF ACCURACY CLASS 1.0			
Sl.No.	Description	Minimum Requirement	To be filled by Manufacturer as Offered:
1	Name of Manufacturer		
2	Meter Type& Serial number		
3	Standard Applicable	IS: 13779/1999 IS: 12346/1988 IS: 14434/1998 IS: 15707 IS: 15959 CBIP Technical Report. 325 IEC: 62053-21	
4	Rating		
	Accuracy Class	Class 1.0 or better	
	Voltage circuit at rated current	240V Phase to neutral, 415 V phase to phase with ± 5%	
	Rated Current	Ib: 10.0A	
	Rated Frequency	50Hz ± 5%	
	Power Factor	0.5 lag - Unity- 0.8 lead	
	Meter Constant (imp/KWh)	Manufacturer to specify	
5	i. Maximum continuous current rating (Amp)	600% of Ib	
	ii.Continuous current rating of terminals for two hours	150% Imax	
	iii.Running with no load & (-) 70 % to 120% of rated voltage	As per IS	
6	Short time over current for 10 milliseconds	As per IS	
7	Starting current at which meter shall run & continue to run	0.2% of Ib at rated voltage and unity power factor	
8	Power loss at rated frequency & reference temperature		
	i. Current circuit at rated voltage	Less than 4VA	
	ii. Voltage circuit at rated current	Less than 1.5W/10VA per phase	
9	Display		
	i. No. of digits	6+1	
	ii. Character height	8.0 x5.0 mm	
10	Continuous display	Yes (shall never be blanked out in all conditions except during power outage)	
11	Cycle of parameter display	15 seconds	
12	Forward and Backward scroll mode	Required	
13	Auto display mode	Required	
14	Operational indication-LED	KWh & KVarh	
15	Communication port	i. Optical Port	
		ii. RS - 232 (RJ-11)	
16	Battery of Real Time Clock	Non chargeable Lithium-ion having at least 10 year of guaranteed period.	
17	Memory	Manufacturer to specify	
18	Non volatile memory retention time in absence of power	10 (ten) years minimum.	
19	Memory capacity (MB)	Manufacturer to specify	
20	Performance of meter in tamper condition (i) Incoming & Outgoing terminals interchange (ii) Change of phase sequence (iii) Absence of neutral (iv) One or two or all three Phase current are reversed (v) Absence of two phases (vi) load drawn partially or fully through earth (vii) Presence of two wires	The meter should work within the specified accuracy and energy is to be recorded in the forward direction	
21	Indication of above tamper condition	Auto/Push button scroll mode or Legend	
22	Provision to read in the absence of power	Required through rechargeable battery & by the use of push button	
23	Provision for time of day	Should be provided for at least 3 time zones	
24	General & Constructional Requirement :		
	i. Base	i. High impact strength non-hygroscopic, fire retardant, fire resistant, UV stabilized poly carbonate (LEXAN 503R or equivalent)	
		ii. Shall conform to IP51/IP54 class degree of protection as per relevant standard.	
24	ii. Meter cover	High impact strength non-hygroscopic, fire retardant, fire resistant, UV stabilized poly carbonate (LEXAN 943A or equivalent)	
24	iii. Terminal Block	i. High impact strength non-hygroscopic, fire retardant, fire resistant, UV stabilized poly carbonate (LEXAN 503R or equivalent)	
		ii. As per IS:13779 & CBIP technical Report 325	
		iii. dia. of terminal holes = 8.5mm (Min)	

	iv. Terminal cover	High impact strength non-hygroscopic, fire retardant, fire resistant, glass reinforced transparent poly carbonate & non-detachable with hinges arrangement (LEXAN 943A or equivalent)	
	v. Screw Material	Zinc/nickel plated	
	vi. Screw Size	2 screw in each terminal of size not less than M4 & head of 6±2mm dia.	
25	Centre to centre clearances between adjacent terminals	18 mm	
26	Transducers		
	i. Input	CT provided in phase and neutral element	
		Voltage : PT less Potential provider.	
	ii. Output	LCD	
	iii. C.T. – no. of turns	Manufacturer to specify	
27	Fixing/sealing arrangement		
	i. Fixing of meter	3 fixing holes (one at top & two at bottom under terminal block). The top fixing screw shall not be accessible after meter is fixed to the meter box base	
	ii. Sealing of meter cover to Base	At least two fixing screws for fixing meter cover with the meter base shall be provided. Each screw shall have at least one hole for sealing arrangement. The arrangement should be in such a manner that any access to the working part of the meter body will not be possible without breaking/removing/ tamper the said seals.	
28	Type of hinged undetectable terminal cover	Shall be hinged	
29	Suitability of meter to sustain over voltage i.e phase to phase voltage injected between phase & neutral	Should sustain	
30	Electromagnetic compatibility (EMI/EMC severity level)	As per IS : 13779/1999	
31	Effect on accuracy of external electromagnetic interference of electrical discharge, external magnetic field	Should work within accuracy as per latest IS 13779 & CBIP technical report 325 with latest amendment.	
32	Injection of DC supply in neutral	Error beyond ±4% will not be acceptable for conditions not specified in IS : 13779/1999 & CBIP technical report 325	
33	Current reversal, neutral disturbance, magnetic disturbance, magnetic tamper, etc	Current related events: 100 (min) Voltage related events: 100 (min) Others : 100 (min)	
34	Drift in accuracy of measurement with time	Should not drift	
35	Name plate details	As per IS : 13779/1999 Clause 7.1	
36	Approximate weight of meter	Manufacturer to indicate	
37	Type of mounting	Projection type	
38	Calibration	Meter shall be software calibrated at factory & there shall not be any mechanical form of calibration so that any adjustment in calibration is not possible after freezing the meter constant.	
39	Mounting of components on PCB	Shall be SMT & ASIC type	
40	Tests & Test Conditions	As per Clause 12 of IS: 13779/1999 or its latest amendments	
40	Warranty of the meter:	Not less than 5½ years	

(Signature of Authorised Signatory)

Name:

Designation:

Address:

LETTER HEAD OF THE FIRM /COMPANY..			
	Annexure - 1C: POLYCARBONATE BOX (Amended)		
GTPs OF METER BOX (POLYCARBONATE) SUITABLE FOR SINGLE PHASE & THREE PHASE STATIC ENERGY METER			
Sl.No.	Description	Minimum Requirement	To be filled by Manufacturer as Offered:
1	Material of meter box	Sheet moulding compound or Polycarbonate As per IS: 13410/1992 / 14434	
2	Colour :		
	a) Base	Opaque/transparent	
	b) Cover	Transparent or Opaque with viewing window as the case may be.	
3	Dimension of Box	To be provided by manufacturer	
4	Clearance from Meter surface (General tolerance) :		
		10 mm to 40 mm	
	i. Left & Right side :		
	ii. Bottom from Terminal block	70 - 80 mm	
	iii. Front :	10 mm minimum	
	iv. Back:	10 mm	
	v. Top :	10 mm minimum	
5	Inlet & Outlet opening at the bottom part of the LHS & RHS of Meter Box	i. upto 17mm dia. for 1-phase	
ii. upto 30mm dia. for 3-phase			
6	Thickness of Meter box_base	2 mm (minimum)	
7	Thickness of Meter box_back & sides	2 mm (minimum)	
8	Sealing arrangement	2 Nos (minimum)	
9	Suitable for outdoor installation IP 54 or better	Yes /No	
10	U-shaped clamps/latches for holding the box with sealing arrangements	2 nos.	
11	Holes for mounting of meter box	4 nos. with screws of 6 mm dia. & 75 mm long (maximum)	
12	Meter mounting arrangement	1 no. at top & 2nos at the sides corresponding to the terminal block of the meter	
13	Marking of Box	As per IS:5133(Pt-II)	
14	Tests	As per IS:5133(Pt-II) & IS:11000	
15	Weight of the Box (in Kg)	Manufacturer to specify	
16	Engraving/Sticker of "Property of MePDCL "	Yes	

(Signature of Authorised Signatory)

Name:

Designation:

Address:

LETTER HEAD OF THE FIRM /COMPANY..			
	Annexure - 1C :SMC BOX (Amended)		
GTPs OF METER BOX (SMC) SUITABLE FOR SINGLE PHASE & THREE PHASE STATIC ENERGY METERS			
Sl.No.	Description	Minimum Requirement	To be filled by Manufacturer as Offered:
1	Material of meter box	Sheet moulding compound or Polycarbonate As per IS: 13410/1992 / 14434	
2	Colour :		
	a) Base	Opaque/transparent	
	b) Cover	Transparent or Opaque with viewing window as the case may be.	
3	Dimension of Box	To be provided by manufacturer	
4	Clearance from Meter surface (General tolerance \pm 5mm) :		
	i. Left & Right side :	40 mm	
	ii. Bottom from Terminal block	70 mm	
	iii. Front :	30 mm	
	iv. Back:	10 mm	
	v. Top :	30 mm	
5	Inlet & Outlet opening at the bottom part of the LHS & RHS of Meter Box	i. upto 17mm dia. for 1-phase	
		ii. upto 30mm dia. for 3-phase	
6	Thickness of Meter box_base	2 mm (minimum)	
7	Thickness of Meter box_back & sides	2 mm (minimum)	
8	Sealing arrangement	2 Nos (minimum)	
9	Suitable for outdoor installation IP 54 or better	Yes /No	
10	U-shaped clamps/latches for holding the box with sealing arrangements	2 nos.	
11	Holes for mounting of meter box	4 nos. with screws of 6 mm dia. & 75 mm long (maximum)	
12	Meter mounting arrangement	1 no. at top & 2nos at the sides corresponding to the terminal block of the meter	
13	Marking of Box	As per IS:5133(Pt-II)	
14	Tests	As per IS:5133(Pt-II) & IS:11000	
15	Earthing arrangement	1 no. earth bolt of 6 mm dia & 20 mm long with 2 nos. nuts & washers & 1 no. spring washer with earthing symbol.	
16	Weight of the Box (in Kg)	Manufacturer to specify	
17	Engraving/Sticker of "Property of MePDCL "	Yes	