

Invitation of Expression of Interest for Empanelment of Agencies/ EPC
contractors for Solar Rooftop Programme in Kerala under Distributed
Power generation.
(Grid connected, Off Grid& Hybrid Solar Power Plants)

Addendum to notification No. ANERT-TECH/337/2018-PE1(RTS)
Dated. 17.10.2018

17 th November 2018



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Sl. no	Page No. Reference	Clause of EoI published	Amended as	Remarks
	Page-7, Clause-V	v. For off- grid systems of capacity 10kW, Scheme approval and energisation approval has to be obtained from Electrical inspectorate.	v. For off- grid systems of capacity above 10kW, Scheme approval and energisation approval has to be obtained from Electrical inspectorate	
	Page-10 Clause 0.2	0.2 The Agency should have a valid GST registration. Copy to be submitted along with the EoI	0.2 The Agency should have a valid GST registration in Kerala. Copy to be submitted along with the EoI	
	Page-12 1.Financial Criteria Clause1.1	1.1 The maximum price for subsidised programme and non-subsidy programme has to be submitted in the price format enclosed. For subsidised programme maximum cost inclusive of GST should not exceed the bench mark cost fixed by MNRE. This has to be resubmitted as and MNRE changes their bench mark cost. Licensing fee 2.5% shall be additional.	1.1 The maximum price for subsidised programme and non-subsidy programme has to be submitted in the price format enclosed. Lowest quoted 10 rates only will be considered for initial listing. This list will be expanded based on a transparent process if required. This should be inclusive of GST and all. Licensing fee of 2.5% shall be additional. ANERT may request for revision of price as when required	
	Page-12 1.Financial Criteria Clause1.2	1.2 In the case of Non subsidy programme if the agency/ EPC contractor wishes to supply premium components and they feel the cost is higher than that for subsidy programme, they are provided with option to submit price bid for non-subsidy	1.2 In the case of Non subsidy programme if the agency/ EPC contractor wishes to supply premium components and they feel the cost is higher than that for subsidy programme.They are provided with option to submit price bid for non-subsidy programme also. The maximum price that	

		programme also. The maximum price that can be charged should be limited to this amount (all inclusive)	can be charged will be limited to lowest quoted 5 rates only and will be considered for initial listing. This list will be expanded based on a transparent process if required. This should be inclusive of GST and all. Licensing fee of 2.5% shall be additional.	
		New	1.10 The benchmark cost considered for subsidy will be the lowest cost quoted by the agency or the benchmark announced by MNRE whichever is less. Subsidy and any other incentive provided will be based on this amount. Benchmark cost is not inclusive of 2.5 % licencing fee.	
	II.A, 3.4(4) Connectivity	3Phase	I Phase/ 3Phase	
	Page 23 Table 2.3		See Annexure-1 of Addendum	
	Page No 26 Table 2.4		See Annexure-2 of addendum	
	Between Page26 and 27		See Annexure-3 of addendum	
	PART-III		See Annexure-4 of addendum	

Annexure-1

No	Capacity of the System	Capacity of SPV Module	Capacity of PCU (In KVA)	Battery Bank (minimum) Option-1 (Minimum 6 Hrs back up)	Battery Bank(Minimum) Option-2 (Minimum 3 Hrs back up)	Battery Bank Option-3 (Minimum 1 Hrs back up)
1	1kW	1000 Wp	1	7200Whr	3600Whr	2400Whr

Table 2.3

1. For higher capacity battery backup can be arrived by multiplying Whr capacity by system capacity ie[Whr X Capacity for 2kW , option -1 , 7200Whr x 2= 14400Whr].
2. The indicated Whr capacity for battery is minimum, if the EPC contractor feels it is not enough, he can provide more.

Annexure-2

Table 2.4

System Component	Capacity	Minimum Technical Compliance
Solar panel	Equal to the system Capacity	IEC 61215 / IS14286, IEC 61730 Part 1 & II IEC 61701
Battery	7200Whr/kW for Option -1 3600Whr/kW for option -2 2400Whr /kW for option-3	IS1651/IS13369 /IEC 61427/IS15549

System Component	Capacity	Minimum Technical Compliance
Power conditioning Unit	Equal to the System capacity with a Maximum allowable deviation <u>+ 20%</u>	IEC 61683 / IS 61683 IEC 60068-2 (1, 2, 14, 30) / Equivalent BIS Std Efficiency 85% and above at full load THD <5%
Cables		IEC 60227 / IS 694 IEC 60502 / IS 1554 (Pt. I & II)
Switches/ Circuit Breakers/ Connectors		IEC 60947 part I,II, III / IS 60947 Part I,II,III EN 50521
Junction Boxes /Enclosures for Inverters/ Charge Controllers		IP 54 (for outdoor) or IP 65 / IP 21(for indoor) as per IEC 529

Annexure-3 – Technical requirements Hybrid Solar Rooftop Power Plants

Configuration Proposed

1.1 The configuration proposed to be installed under “Solar Rooftop Programme” Scheme implemented by ANERT is as given below.

Sl.No	Capacity	Minimum Module Capacity	PCU capacity Maximum allowable deviation \pm 20%	Connectivity	Battery backup
1.	1kW	1kWp	1kW	I Phase/ 3Phase	Minimum 2 Hrs Battery backup has to be provided
2.	2kW	2kWp	2kW	I Phase/ 3Phase	Minimum 2 Hrs Battery backup has to be provided
3.	3kW	3kWp	3kW	I Phase/ 3Phase	Minimum 2 Hrs Battery backup has to be provided
4.	5KW	5kWp	5KW	1 phase /3Phase	Minimum 2 Hrs Battery backup has to be provided
5.	10kW	10kWp	10kW	3Phase	Minimum 2 Hrs Battery backup has to be provided
6.	15kW	15kWp	15kW	3Phase	Minimum 2 Hrs Battery backup has to be provided
7.	20kW	20kWp	20kW	3Phase	Minimum 2

					Hrs Battery backup has to be provided
8.	25kW	25kWp	25kW	3Phase	Minimum 2 Hrs Battery backup has to be provided

- 1.2 The capacity of the system is defined as the total capacity of solar modules.
- 1.3 When Grid power not available system should work as off grid power plant and shouldn't inject power to the grid. Necessary safety requirement has to be provided and shall be demonstrated, if required by utility or any other competent authority.
- 1.4 Agency must have an accredited installer and a licensed electrical contractor to install the Solar Power plant and his/her details has to be furnished for reference and verification.
- 1.5 Minimum/Maximum capacity of PCU shall be $\pm 20\%$ of module capacity.
- 1.6 The grid connected solar PV power plant comprises of solar PV modules with intelligent online inverter which feeds quality AC power to electrical loads taking energy from PV and feeding the excess generated electricity to the grid of Distribution Licensee through net metering facility. The connectivity should be as per CEA (Technical Standards for connectivity of the distributed generation resources) Regulations, 2013 and KSERC (Grid Interactive Distributed Solar Energy Systems) CEA Regulations, 2014 and amendments thereof if any.
- 1.7 The system installed should conform to the minimum technical requirements by MNRE, CEA, KSERC and ANERT (undertaking by the agency to be submitted as per Annexure II-C.
- 1.8 The plant should be sized based on the availability of shade free area for installing solar module array and the feasibility to connect to the grid by the distribution licensee. Maximum capacity of solar power plant availed by a beneficiary at a single location is 500 kW

- 1.9 The connectivity should be as per (Technical Standards for connectivity of the Distributed generation resources) Regulation, 2013.
- 1.10 KSERC (Grid Interactive Distributed Solar Energy Systems) Regulations, 2014 should be complied.
- 1.11 CEA Regulation 2010 has to be followed for Safety and Electricity Supply.
- 1.12 Metering should be as per CEA regulation 2006.
- 1.13 Any amendments thereof will also be applicable
- 1.14 The system should be connected to the mains -Single phase/ three phase -through a net/export-import meter tested and approved by a lab approved by the Distribution Licensee. Another Energy meter (Tested in approved labs) also has to be installed between the PCU and the point of interconnection , nearer to the net meter to record electricity generated from Solar power plant
- 1.15 All the components of the system should comply with the minimum technical requirements of the Grid connected Rooftop solar photovoltaic power plant scheme of MNRE and CEA regulations. Technical compliance certificate/ Test report from the approved laboratory of MNRE, NABL,IEC, BIS accredited has to be submitted for the main system components (solar PV module, Power conditioning unit) of all the models and brands proposed. The certificate should be valid as on the date of submission.
- 1.16 The test certificate shall be as per the prevailing format/procedure by MNRE. The PV modules must be tested and approved by an IEC/NABL/MNRE /BIS approved test centre
- 1.17 I –V curves of STC performance of the module should be submitted along relevant test certificates
- 1.18 The PV module(s) shall contain crystalline silicon solar cells.
- 1.19 PV modules of capacity 200Wp or higher capacity should be used.
- 1.20 Each PV module used in any solar power project must use a RF identification tag (RFID), which must contain the following information. The RFID should be inside the module laminate.(This is as per MNRE guidelines)
 - i. Name of the manufacturer of PV Module

- ii. Name of the manufacturer of Solar cells
- iii. Month and year of the manufacture (separately for solar cells and module)
- iv. Country of origin (separately for solar cell and module)
- v. I-V curve for the module
- vi. Peak Wattage, I_m , V_m and FF for the module
- vii. Unique Serial No. and Model No. of the module
- viii. Date and year of obtaining IEC PV module qualification certificate
- ix. Name of the test lab issuing IEC certificate
- x. Other relevant information on traceability of solar cells and module as per ISO 9000 series.

1.21 In addition to the above following details should be provided on the module as visible to the inspecting person.

- a. Name and address of manufacturer
- b. Make, model and Serial No
- c. Rated Power at STC
- d. V_{mp} , I_{mp} , V_{oc} & I_{sc}

1.22 A display board has to be placed near the PV array. Design and details to be provided will be provided by ANERT.

1.23 PV modules used in solar power plants/ systems must have a warranty for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.

1.24 The PCU (inverter) shall be a single unit for the capacity up to 2 kW and for capacity higher than 2kW it can be multiple also. Technical data sheet of the inverter indicating operating modes, protection, efficiency etc. should be provided by the bidder.

1.25 Hybrid inverters with on grid-off grid modes may also be provided.

1.26 PCU should comply following parameters

Output voltage 3 phase, 415 VAC
Below 5kW, it can also be single phase 230VAC depending on the consumer connection.
Maximum allowable variation of voltage is +/- 10%
Inverter/ PCU should be capable of synchronise with grid voltage between 110% and 80% of the rated output. Beyond this, system has to stop generating.

- 1.27 Generation data and other important parameters should be accessible through web- based remote monitoring communication link for 5kW and above.
- 1.28 Full protection against accidental open circuit, reverse polarity and AC /DC bus short-circuit shall be provided.
- 1.29 The PCU shall not produce Electromagnetic interference (EMI) which may cause malfunctioning of electronic and electrical instruments including communication equipment, which are located within the facility in which the PCU is housed.
- 1.30 The inverter enclosure shall be weatherproof and capable of surviving climatic changes and should keep the inverter intact under all conditions in the room where it will be housed. The inverter should be either wall/ pad mounted. Moisture condensation and entry of rodents and insects shall be prevented in the inverter enclosure. Components and circuit boards mounted inside the enclosures shall be clearly identified with appropriate permanent designations.
- 1.31 All doors, covers, panels and cable exits shall be provided with gasket or otherwise designated to limit the entry of dust and moisture.
- 1.32 The Junction boxes, enclosures for inverters/ Charge controllers should meet general requirements as per IP 54 /IP 65 (for outdoor)/ IP 21 (for indoor) as per IEC 529
- 1.33 Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

- 1.34 The system should have MOV type of arrestors for higher withstand of continuous PV-DC voltage during earth fault condition. SPD shall have safe disconnection and short circuit interruption arrangements.
- 1.35 Lightning protection should be provided by using metal oxide varistors as per IEC 62305 and suitable groundings such that induced transients find an alternate route to earth.
- 1.36 In built protection for internal faults including excess temperature, commutation failure, and overload and cooling fan failure (if fitted) is obligatory
- 1.37 Fast acting semiconductor type current limiting fuses at the main bus bar to protect from the grid short circuit contribution.
- 1.38 All the Electrical Grounding (earthing) should be as per IS 3043. Copper or GI single conductor has to be used.
- 1.39 A manually operated isolating switch between the distributed generation resource and the electricity system, which shall meet following requirements:
 - a) Allow visible verification that separation has been accomplished;
 - b) Include indicators to clearly show open and closed positions;
 - c) Be capable of being reached quickly and conveniently twenty four hours a day by licensee's personnel without requiring clearance from the applicant;
 - d) Be capable of being locked in the open position;
 - e) May not be rated for load break nor may have feature of over-current protection;
 - f) Be located at a height of at least 2.44 m above the ground level.
- 1.40 The PCU shall be tested to demonstrate operation of its control system and the ability to be automatically synchronized, operate in parallel with the grid of distribution licensee.
- 1.41 Factory test certificate of PCU shall be made available as a reference for inspection and testing.
- 1.42 DC isolation facility has to be provided in the PCU or externally.

- 1.43 Battery bank equivalent to provide 2 Hrs. backup has to be provided. The test certificates for the proposed batteries have to be submitted in advance to get it listed.
- 1.44 Switches/ Circuits Breakers/ Connectors should meet general requirements and safety requirements as per compliance required
- 1.45 Cabling practice: Cable connections must be made using PVC insulated copper cables, as per BIS specifications. All cable connections must be made using suitable terminations for effective contact. Cabling should be as per National Electrical Code and technical compliance required for the programme.
- 1.46 All cables outside of terminal/ panels/ enclosures shall be protected by conduits.
- 1.47 Cables may be run in UV stabilised PVC conduits in GI trays with covers for protection.
- 1.48 Cables shall be provided with dry type compression glands wherever they enter junction boxes, panels, enclosures.
- 1.49 Cable Marking: All cable/wires are to be marked in proper manner by good quality ferule or by other means so that the cable can be easily identified.
- 1.50 Structural material shall be corrosion resistant and electrolytic ally compatible with the materials used in the module frame, its fasteners, nuts and bolts. Galvanizing should meet ASTM A-123 hot dipped galvanizing or equivalent, which provides at least spraying thickness of 70 microns on steel as per IS 5905, if steel frame is used. Any other corrosion resistant material structures with adequate strength can also be used.
- 1.51 Each structure shall have its angle of inclination to the horizontal as per the site conditions. Solar module should be inclined towards south direction and installed at an angle of 10-15° from the horizontal. If any deviation is required, that has to be conveyed with the beneficiary and the generation loss that may occur may be made aware to the beneficiary and an undertaking from beneficiary may be submitted in this regard along with the project proposal / feasibility report. Maximum loss due to such deviation should not be more than 10% of the actual generation expected.

- 1.52 Each panel frame structure shall be so fabricated as to be fixed on the rooftop column/ wall structures. The structure should be capable of withstanding a wind load of 150-160 km/hr after grouting & installation. The lower end of the solar array must be minimum 30 cm above the rooftop. Grouting material for SPV structures shall be as per M15 (1:2:4) concrete specification.
- 1.53 The structures shall be designed for simple mechanical and electrical installation.
- 1.54 The array structure shall support SPV modules at a given orientation and absorb and transfer the mechanical loads to the rooftop column properly.
- 1.55 5 years warranty for the entire system should be provided by the supplier as per the conditions of the contract.
- 1.56 Copy of warranty certificate from manufacturer of module and PCU has to be given to the beneficiary as an attachment to the warranty certificate of the empanelled agency
- 1.57 Electrical installation shall be certified by a competent licensee of the Electrical Inspectorate (wherever applicable). Scheme approval and energisation approval has to be obtained from the authority designated for the same.
- 1.58 The agency shall agree to provide installation details of the PV modules and the support structures with appropriate diagrams and drawings.
- 1.59 Feasibility report on grid connectivity has to be obtained by the beneficiary from electrical distribution licensee for getting final approval for installation of Solar Power plant.
- 1.60 The eligible consumer shall obtain necessary sanction for installation and commissioning the solar energy system from Electrical Inspector having jurisdiction over the area, in accordance with provisions of the Central Electrical Authority (Technical standards for connectivity of distributed Generation) Regulations, 2013 and produce the sanction to Distribution Licensee.
- 1.61 The distribution Licensee shall test the solar energy system in accordance with the provisions of Central Electrical Authority (Technical Standards for Connectivity of Distributed Generation

Resources) Regulation.2013, within fifteen days from the date of submission of approval of Electrical Inspector.

- 1.62 One copy each of the approved drawing and diagrams showing important equipment, protection and control features shall be signed by the applicant and the licensee and shall be in possession of the applicant and licensee. One copy of this has to be submitted along with commissioning report to ANERT.
- 1.63 These drawing and diagrams shall be amended as and when any changes are made in the distributed generation resource or interconnection facility.
- 1.64 The applicant shall provide reasonable access and other required facilities to the appropriate licensee for inspection of the equipment.
- 1.65 The energy meter for recording Solar electricity generated and the two way meter for net metering has to be got tested from the authorised meter testing facility of the Distribution Licensee before installation. Or tested meter has to be obtained from distribution licensee.
- 1.66 Necessary formalities like submitting application for the clearance from the Distribution Licensee and providing connectivity have to be done by the beneficiary. Charges for this services if any, has to be remitted by the beneficiary.
- 1.67 An Operation, Instruction and Maintenance Manual, in English and Malayalam, should be provided with the system.
- 1.68 The following minimum details must be provided in the manual:
 - a. How to use
 - b. DO's and DON'T's
 - c. Regular maintenance and troubleshooting of solar power plant
 - d. Name ,address, phone number and E-mail ID of the contact person& service facility

1.69 **Minimum Technical requirements summary**

Table 2.2

S/N	System Component	Capacity/ rating	Minimum Technical Compliance
1.	Solar panel	As per the rating system selected	IEC 61215 / IS14286; IEC 61730 Part 1 & II; IEC 61701
2.	Power conditioning Unit	As per the rating system selected	IEC 61683 / IS 61683 (Efficiency 95% and above) IEC 60068-2 (1, 2, 14, 30) / Equivalent BIS Std. IEC 62116 –for islanding prevention Compliance to CEA (Distributed generation) regulation, 2013, IEC 61727 for utility interface
3.	Battery	3600Whr/kW or any other configuration which provided 2 Hrs Backup	IS1651/IS13369 /IEC 61427/IS15549
4.	Cables	For 15m wiring length AC & DC SIDE	IEC 60227 / IS 694 IEC 60502 / IS 1554 (Pt. I & II)
5.	Switches/ Circuit Breakers/ Connectors	As required	IEC 60947 part I,II, III / IS 60947 Part I,II,III EN 50521
6.	Junction Boxes/Enclosures for Inverters/ Charge Controllers	As required	IP 54 (for outdoor)or IP 65 / IP 21(for indoor) as per IEC 529
7.	Energy Meter for Recording Solar Electricity Generated		As per CEA regulations
8.	Two way meter for Distribution Licensee grid connection		As per CEA regulations

S/N	System Component	Capacity/ rating	Minimum Technical Compliance
9.	Electrical Grounding (Earthing)	Module array and the PCU	As per IS 3043

All certificates has to be submitted for approval of components.

Annexure-4

Invitation of Expression of Interest for Empanelment of Agencies/ EPC contractors for Solar Rooftop Programme in Kerala under Distributed Power generation.
(Grid connected, Off Grid& Hybrid)

Reference No. ANERT-TECH/337/2018-PE1(RTS)
Dated.17.10.2018

PART-III



Agency for Non-conventional Energy & Rural Technology
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2. Price offer for Subsidy Programme (Grid Connected)

Sl. No	Capacity of the System in kW	Base price of the system	GST and other taxes *	2.5% Non-refundable Licence Fee + inclusive 18% GST	Total cost of the system inclusive of GST , other taxes and license fee (Without Subsidy)**	MNRE benchmark cost inclusive of taxes and applicable fees
1	1					60,000
2	2					1,20,000
3	3					1,80,000
4	5					3,00,000
5	10					6,00,000
6	15					8,25,000
7	20					11,00,000
8	25					13,75,000
9	30					16,50,000
10	40					22,00,000
11	50					27,50,000
12	60					33,00,000
13	70					38,50,000
14	80					44,00,000
15	90					49,50,000
16	100					55,00,000
17	150					79,50,000
18	200					1,06,00,000
19	250					1,32,50,000
20	300					1,59,00,000
21	350					1,85,50,000
22	400					2,12,00,000
23	450					2,38,50,000
24	500					2,65,00,000

* This has to be arrived based on GST prevailing GST norms – A sample calculation to be shown in the box below

** . The price quoted by the bidder for solar system shall be inclusive of 2.5% of non-refundable licensing fee, cost of transportation, handling, and supply, installation and commissioning of the system (Standard installation) , cost of insurance, taxes if any and including 5 year warranty etc.

1 .The price quoted is applicable for any location in all fourteen districts of Kerala.

Date

Signature of the authorised signatory

Name

Designation

(Office Seal)

3. Price Offer for Subsidy Programme (Off Grid)

Sl . No	Capacity of the System in kW	Base price of the system	GST and other taxes*	2.5% Non-refundable Licence Fee Including 18% GST	Total cost of the system inclusive of GST , other taxes and licensing fee**	Battery Bank Options	MNRE benchmark cost inclusive of taxes and applicable fees
1	1					Option 1	100000
	1					Option 2	80000
	1					Option 3	68000
2	2					Option 1	200000
	2					Option 2	160000
	2					Option 3	136000
3	3					Option 1	300000
	3					Option 2	240000
	3					Option 3	204000
5	5					Option 1	500000
	5					Option 2	400000
	5					Option 3	340000
6	10					Option 1	1000000
	10					Option 2	800000

	10					Option 3	680000
7	15					Option 1	1350000
	15					Option 2	1080000
	15					Option 3	915000
	20					Option 1	1800000
8	20					Option 2	1440000
	20					Option 3	1220000
	25					Option 1	2250000
9	25					Option 2	1800000
	25					Option 3	1525000

* This has to be arrived based on GST prevailing GST norms – A sample calculation to be shown in the box below

** . The price quoted by the bidder for solar system shall be inclusive of 2.5% of non-refundable licensing fee, cost of transportation, handling, and supply, installation and commissioning of the system (Standard installation) , cost of insurance, taxes if any and including 5 year warranty etc.

1 .The price quoted is applicable for any location in all fourteen districts of Kerala.

Date

Signature of the authorised signatory

Name

Designation

(Office Seal)

4. Grid Connected Solar Power Plant-Price Offer for Non -Subsidy Programme (Premium Model)

Sl. No	Capacity of the System in kW	Base price of the system	GST and other taxes*	2.5% Non-refundable Licence Fee + 18% GST	Total cost of the system inclusive of GST , other taxes and license fee **	MNRE benchmark cost inclusive of taxes and applicable fees- (base cost for incentives)
1	1					60,000
2	2					1,20,000
3	3					1,80,000
4	5					3,00,000
5	10					6,00,000
6	15					8,25,000
7	20					11,00,000
8	25					13,75,000
9	30					16,50,000
10	40					22,00,000
11	50					27,50,000
12	60					33,00,000
13	70					38,50,000
14	80					44,00,000
15	90					49,50,000
16	100					55,00,000
17	150					79,50,000
18	200					1,06,00,000
19	250					1,32,50,000
20	300					1,59,00,000
21	350					1,85,50,000
22	400					2,12,00,000
23	450					2,38,50,000
24	500					2,65,00,000

* This has to be arrived based on GST prevailing GST norms – A sample calculation to be shown in the box below



** . The price quoted by the bidder for solar system shall be inclusive of 2.5% of non-refundable licensing fee, cost of transportation, handling, and supply, installation and commissioning of the system (Standard installation) , cost of insurance, taxes if any and including 5 year warranty etc.

1 .The price quoted is applicable for any location in all fourteen districts of Kerala.

Date

Signature of the authorised signatory
Name
Designation

(Office Seal)

5. Off Grid Solar Power Plant-Price Offer Off grid for Non -Subsidy Programme (Premium Model)

Sl. No	Capacity of the System in kW	Base price of the system	GST and other taxes*	2.5% Non-refundable Licence Fee + 18% GST	Total cost of the system inclusive of GST , other taxes and license fee**	Battery Bank Options	MNRE benchmark cost inclusive of taxes and applicable fees
1	1					Option 1	100000
	1					Option 2	80000
	1					Option 3	68000
2	2					Option 1	200000
	2					Option	160000

						2	
	2					Option 3	136000
3	3					Option 1	300000
	3					Option 2	240000
	3					Option 3	204000
4	5					Option 1	500000
	5					Option 2	400000
	5					Option 3	340000
5	10					Option 1	900000
	10					Option 2	720000
	10					Option 3	610000
6	15					Option 1	1350000
	15					Option 2	1080000
	15					Option 3	915000
7	20					Option 1	1800000
	20					Option 2	1440000
	20					Option 3	1220000
8	25					Option 1	2250000
	25					Option 2	1800000
	25					Option 3	1525000

* This has to be arrived based on GST prevailing GST norms – A sample calculation to be shown in the box below

** . The price quoted by the bidder for solar system shall be inclusive of 2.5% of non-refundable licensing fee, cost of transportation, handling, and supply, installation and commissioning of the system (Standard installation) , cost of insurance, taxes if any and including 5 year warranty etc.

1 .The price quoted is applicable for any location in all fourteen districts of Kerala.

Date

Signature of the authorised signatory

Name

Designation

(Office Seal)

6. Price Offer for Hybrid Systems (Battery backup: Minimum 3600 Whr/kW – 2 Hrs .backup)

Sl. No	Capacity of the System in kW	Base price of the system	GST and other taxes*	2.5% Non-refundable Licence Fee + 18% GST	Total cost of the system inclusive of GST , other taxes and license fee**
1	1				
2	2				
3	3				
4	5				
5	10				
6	15				
7	20				
8	25				

* This has to be arrived based on GST prevailing GST norms – A sample calculation to be shown in the box below

** . The price quoted by the bidder for solar system shall be inclusive of 2.5% of non-refundable licensing fee, cost of transportation, handling, and supply, installation and commissioning of the system (Standard installation) , cost of insurance, taxes if any and including 5 year warranty etc.

1 .The price quoted is applicable for any location in all fourteen districts of Kerala.

Date

Signature of the authorised signatory

Name

Designation

(Office Seal)