
Expression of Interest (Eoi)

EOI for Empanelment of Channel Partners for Supply, Installation & Commissioning of Rooftop Solar Photovoltaic systems in the State of Arunachal Pradesh during the year 2017-18.

Floated by



ARUNACHAL PRADESH ENERGY DEVELOPMENT AGENCY

(A State Govt. Agency of Arunachal Pradesh)

Urja Bhawan, T.T. Marg, Itanagar -791 111

Papumpare District, Arunachal Pradesh

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OFFICE OF THE

DIRECTOR
ARUNACHAL PRADESH ENERGY DEVELOPMENT AGENCY
URJA BHAWAN, T.T MARG, ITANGAR -791111

No. APEDA/W-242/SPV Plant(Rooftop)/2015/

Date: 25th Sept.2017.**NOTICE INVITING EOI**

Arunachal Pradesh Energy Development Agency (APEDA) invites ON-LINE Expression of Interest (Eoi) for empanelment of Channel Partners for implementation of Rooftop Solar PV Systems in the State of Arunachal Pradesh for the year 2017-18 from the empanelled Channel Partners of MNRE, GoI.

Sl. No	Description of	Document Fee	Earnest Money	Last Date & Time for Submission/ uploading of Eoi.	Date & Time of Opening of Eoi.
1	Empanelment of Channel Partners for Supply, Installation and Commissioning of Grid Connected Rooftop Solar Photovoltaic Systems in the State of Arunachal Pradesh during 2017-18.	Rs. 10,000/-	Rs. 4,00,000 /-	Date: 16/10/2017 Time: 3.00 PM	Date: 17/10/2017 Time: 3.00 PM

Expression of Interest document can be downloaded from websites – www.arunachaltenders.gov.in and www.apeda.org.in from **26/09/2017 to 16/10/2017 till 3.00 PM.**

Eligibility: The intending bidders should be empanelled channel partners of MNRE, GoI under grid connected rooftop programme.

Director, APEDA reserves the right to reject any/all offers without assigning any reasons thereof.

Sd/-**Director, APEDA**

Arunachal Pradesh Energy Development Agency,
Urja Bhawan, T.T Marg, Itanagar -791 111.

Copy to:

1. The Director, IPR, Govt. of Arunachal Pradesh, Naharlagun with the request to publish above EoI in one of the national dailies and also in one of the local dailies.
2. The Chairman, APEDA for information.
3. The PS to HM (Power) for information.
4. The Commissioner (Power & NRE), Govt. of AP, Itanagar for information.
5. The DD, APEDA, Tezu, Aalo, Bomdila, Yachuli for information and publicity.
6. Notice Board.
7. The websites: www.arunachaltenders.gov.in and www.apeda.org.in
8. The AP, APEDA for information.
9. Office Copy.

Sd/-

Director, APEDA

Arunachal Pradesh Energy Development Agency,
Urja Bhawan, T.T Marg, Itanagar -791 111.

A. Required Details of Offer (Eoi to be accompanied with Offer as mentioned below).

Arunachal Pradesh Energy Development Agency (APEDA) – A State Nodal Agency for Promotion & Popularization of Renewable Energy Technologies & Systems and Energy Conservation in the State invites offers for **Empanelment of Channel Partner for Supply, Installation & Commissioning of Rooftop Solar Photovoltaic Systems in the State of Arunachal Pradesh for the year 2017-18.**

Offers are invited from **Registered MNRE Channel Partners (CP) including New Entrepreneurs and PSUs Channel Partners under grid connected Solar Rooftop Programme**, and having adequate infrastructure facilities for marketing, supply, installation, and to provide prompt & reliable after sales service and eligibility criterion as per the Offer Evaluation Criteria (OEC) of this document. Offers received from MNRE empanelled Channel Partners (CP) will only be taken into consideration. Offers received from others will not be taken into consideration and will be summarily rejected.

Offers submitted should be accompanied by non-refundable document fee of **Rs. 10,000/-** and an **Earnest Money Deposit** of **Rs.4,00,000/-** in the form of Demand Draft drawn on any Bank recognized by RBI separately in favour of **Director, APEDA, Itanagar** payable at **Itanagar**. Offers received without requisite document fee and Earnest Money Deposit will be summarily rejected.

Offers to be submitted in two Parts as mentioned in the following:

Part – I	Technical Offer Containing original document duly signed and sealed on every page, Earnest Money Deposit in the prescribed form, details of manufacturing & infrastructure facilities as per the document, Technical Specifications and Brochures on the models proposed, Documents in support of Offer Evaluation Criteria, any other documents/ papers in support of claims made by the party
Part – II	Financial Offer Schedule of Rates as per the proforma attached in the Eoi document.
Both offers in two separate envelopes should be packed in a single envelope super-scribed with offer detail and due date.	

Offers submitted by the CP should be valid up to **6 months** from the date of offer.

Sealed offers (hard copies), duly super scribed on the envelop as **“Empanelment of CP for Supply, Installation & Commissioning of Rooftop Solar Photovoltaic Systems in the State of Arunachal Pradesh for the year 2017-18”** should be submitted in the office of the **Director, APEDA, Urja Bhawan, TT Marg, Itanagar** after uploading in the web portal www.arunachaltenders.gov.in on or before the appointed date and time.

Part – I: Technical Offers received shall be opened on the date and time indicated in the Notice in the office chamber of Director, APEDA, Urja Bhawan, T.T Marg, Itanagar-791111.

Part – II: Financial Offers may also be opened on the same date and time or on some other date which will be announced separately through the web portal.

Director, APEDA may at its discretion change the date & time of opening of the offers without assigning any reasons thereof.

Director, APEDA reserves the right to reject any or all offers without assigning any reasons thereof.

C. CHECK LIST

To ensure that your offer submitted to APEDA is complete in all respects, please go through the following checklist and tick mark for the enclosures attached with your offer:

Sl. No	Description	Attached/ attached	Not	Page No. if Attached
1	Earnest Money Deposit in the prescribed form			
2	Document Fee in the prescribed form			
3	The original EOI document duly signed and sealed on every page, as a confirmation to have read the document and of acceptance of the terms and conditions of the document.			
4	A copy of GST registration certificate, Permanent Account Number (PAN) & Company Registration Certificate.			
5	Relevant IEC certificates for SPV panels, PCU and all the other machineries valid as on date.			
6	General Information about bidder as per Annexure - 1			
7	Declaration of the Bidders about any relatives working with APEDA as per Annexure - 2 of the EOI document			
8	Name and address of dealers/ distributors/ service stations in Arunachal Pradesh/ Assam along with copy of agreements as per Annexure- 3.			
9	SPV instruction manual copy			
10	All the pages of EOI documents/ attachments numbered and entire document spiral bound and signed.			

**DETAILS OF EARNEST MONEY DEPOSIT AND EOI DOCUMENT FEE
ATTACHED**

Sl. No	Description
1	<p><u>Earnest Money Deposit</u></p> <p>Earnest Money Deposit of Rs.submitted in the form of Demand Draft/ Bankers Cheque, drawn on _____ Bank, _____ Branch, bearing DD/BC No. _____ dated _____ is attached herewith.</p>
2	<p><u>EOI Document Fee</u></p> <p>EOI Document Fee of Rs.submitted in the form of Demand Draft/ Bankers Cheque, drawn on _____ Bank, _____ Branch, bearing DD/BC No. _____ dated _____ is attached herewith.</p>

1.0 INTRODUCTION

1. Background

Under the help of Central Financial Assistance / SUBSIDY from Government of Arunachal Pradesh and/ or MNRE under their SPV Roof Top Programme, APEDA wishes to select competent, experienced and financially sound **Channel Partners (CP) registered under grid connected rooftop of MNRE**; to supply, install, commission and to maintain Rooftop Solar Photovoltaic Grid connected Systems in the State of Arunachal Pradesh. APEDA would release the subsidy to the eligible CP after installation of systems as per terms and conditions of this EOI.

Above work is to be carried out on **"Turn Key Basis"** which includes identification of beneficiaries in the State of Arunachal Pradesh, collection of their share of cost after adjusting Government of Arunachal Pradesh (if any) / MNRE financial assistance, design, supply of SPV systems with all accessories and equipments, installation, testing, commissioning and maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years.

The total capacity of Rooftop SPV systems shall be 6 MW for

- Residential Consumers,
- Institutions
- Social Sectors
- Government buildings

This quantity may further increase as per availability of allocations from State and CFA from MNRE for this programme

2. Mode of Execution of Programme:

The basis of evaluation of the bids shall be the cost/rate quoted in the Price Schedule. To further clarify, installation and commissioning cost and taxes etc. shall be inclusive to the cost of supply of complete system including FIVE years comprehensive maintenance for comparison and evaluation. Proposers are required to quote rate / cost on firm basis and **no price variation on any account shall be considered.**

The selected authorized CP shall identify beneficiaries to supply, install, commission systems and **provide maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years.** They shall also be required to set up their repair and maintenance centers in Arunachal Pradesh for providing effective repair/maintenance services to the beneficiaries / users and meet conditions as given in the Scope of Work.

The Programme shall be carried out as per guidelines of MNRE and/or as given hereunder as and where applicable:-

- (i) The CP shall be allowed to install the systems conforming to the APEDA/ MNRE specifications / guidelines after authorization by APEDA.
- (ii) For this APEDA shall give specific targets / limits to each selected CP and fix prices for sale of systems to the user (beneficiaries).
- (iii) The subsidy sanction letter shall be issued to the CP on identifying the beneficiaries and submitting the complete list of beneficiaries.
- (iv) The bidder may claim subsidy from APEDA by submitting complete list of beneficiaries along-with full addresses, date of installation, models and makes and serial numbers of systems & PV modules and BOS supplied along with the photographs of installed system duly verified by APEDA and/or its authorized representatives or agency/ies as per the norm of APEDA.

2.0 SCOPE OF WORK

Scope of work covers identification of beneficiaries as per APEDA's conditions, Design, supply, installation, testing, commissioning and maintenance of SPV Grid connected Roof Top Systems in the State of Arunachal Pradesh conforming to technical specification enumerated in relevant APEDA/ MNRE guidelines as amended from time to time.

Detailed scope of work is given here under:-

2.1 Work of installation of SPV grid connected Systems shall involve:

- (i) Identification and motivation of the prospective beneficiaries
- (ii) Preparation of Detailed Project Report (DPR) of the proposed proposal of SPV power plant (Optional)
- (iii) Obtaining No Objection Certificate from DoP (Department of Power) for grid connectivity (if required)
- (iv) Collection of balance cost payable by beneficiary after deducting subsidy payable by APEDA/ MNRE.
- (v) Entering into supply and comprehensive maintenance contract (CMC) agreements with beneficiaries. CMC shall be for five years as per Maintenance services for 5 years with free replacement warranty on spare parts against manufacturing defects for five years
- (vi) Design, supply, civil work, erection, testing and commissioning of SPV grid connected Power Plant as per schedule given at the time of allotting targets
- (vii) The work covers design, supply, installation, commissioning and comprehensive maintenance for FIVE years
- (viii) Establishing "After Sales Service Centres" in concerned area to cater the maintenance needs of beneficiaries

APEDA reserves the right to allot any area(s) / districts to any authorized CP firm amongst all the selected/ authorized CPs.

2.2 PROJECT COST:

2.2.1 The Project cost shall include all the costs related to above Scope of work.

Bidder shall quote for the entire facilities on a "single responsibility" basis such that the total Bid Price shall cover the obligations mentioned in the Bidding Documents in respect of Design, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance for a period of 5 years goods and services including spares required if any, during the O&M period. The Bidder has to take all permits, approvals and licenses etc., provide training and such other items and services required to complete the scope of work mentioned above.

2.2.2 The price quoted is on lump sum turnkey basis including all taxes & duties applicable and the bidder is responsible for the total scope of work described as above.

2.2.3 The project cost shall remain firm and fixed and shall be binding on the Successful Bidder till completion of work for payment of subsidy amount irrespective of his actual cost of execution of the project during the award period. No escalation will be granted on any reason what so ever. The bidder shall not be entitled to claim any additional charges, even though it may be necessary to extend the completion period for any reason(s) what so ever.

- 2.2.4 The cost shall be inclusive of all duties and taxes etc. The prices quoted by the firm shall be complete in all respect and no price variation/adjustment shall be payable and it will hold good during the entire award period.
- 2.2.5 The operation & maintenance of Solar Photo voltaic Power Plant would include warranty against wear, tear, overhauling, machine breakdown and replacement of defective modules, invertors/ Power Conditioning Unit (PCU), spares, consumables & other parts for a period of 5 years.
- 2.2.6 The **Project cost** shall be as asked for in Schedule of Rates by the successful **Bidder's quote @ Rs/Wp (Watt peak) or Rs./KWp**. The project cost shall be in accordance with all terms, conditions, specifications and other conditions of the Contract as accepted by the APEDA and incorporated into the Agreement. The quoted price shall be exclusive of fee and other charges such as APEDA application registration fee, security deposit payable to office of APEDA and will be payable either by beneficiary to the CP separately.
- 2.2.7 The Bidder shall be responsible and take an Insurance Policy for transit-cum- storage-cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of materials at site, erection, testing and commissioning.
- 2.2.8 The Bidder shall also take insurance for Third Party Liability covering loss of human life, engineers and work men and also covering the risks of damage to the third party / material/ equipment/ properties during execution of the Contract. Before commencement of the work, the Bidder will ensure that all its employees and representatives are covered by suitable insurance against any damage, loss, injury or death arising out of the execution of the work or in carrying out the Contract. Liquidation, Death, Bankruptcy etc., shall be the responsibility of bidder.

2.3 Net Metering of Power:

Net metering is the concept which records difference between export of generated energy and import of energy from DoP grid during billing cycle. The SPV power consumer shall benefit the net metering facilities as per the related regulations as notified by APERC as amended from time to time.

The Empanelled CP shall bear the entire cost of metering arrangement provided including its accessories. The installation of meters, wherever applicable, shall be carried out by the CP as per the procedures in vogue of the DISCOM(s) with their permission.

2.4 Project Allocation and Sanction:

- 2.4.1 The identification of the projects (roof tops) at the time of bidding is not mandatory
- 2.4.2 The Successful Bidders selected shall be allocated capacity/ targets
- 2.4.3 The bidders who have been notified as eligible Bidders, shall be given **4 months** from the date of issue /allocation of targets for identification of rooftops and submission of Project sanction documents as per APEDA/ MNRE requirements amended from time to time:
- Detailed Project Report
 - No objection Certificate from the concerned DoP's office for grid connectivity

Further, eligible Bidders can start submitting their Project sanction documents as soon as they receive target allocation from APEDA. If the successful bidders fail to identify the projects for allocated capacity in full or part, within the time limit, in such case, it will be assumed that the bidder is not

capable to complete the allocated work and in this situation penalty will be imposed and this balance allocation will be awarded to another bidder.

- 2.4.4 If there is some left out quantity found due to incapability of the bidder at any time from the date of issue of allocation, this will be offered to other Successful Bidder(s) having ready proposals with them.
- 2.4.5 For identification of projects, APEDA may provide help such as publicity etc and will also make available the list of interested beneficiaries available with APEDA/ DoP. However the entire responsibility of finding the beneficiaries lies with the Bidder
- 2.4.6 APEDA will issue the Sanction Letter(s) for the Project(s) indicating the subsidy amount(s) which will be disbursed in line with the provisions of the EOI document. The Bidder shall complete the design, engineering, manufacture, supply, storage, civil work, erection, installation, testing & commissioning of each project within 3 months period from the date of issue of sanction letter.

2.5 Payment terms:

Empanelled firm (s) will have to supply and install the Solar Power Plants on the rates approved by APEDA in each group and will get payments as under:

2.5.1 Residential, Institutional & Social Sectors (except govt. organization) which are eligible for availing 70% CFA from MNRE

- (i) No mobilization advance would be paid by APEDA to the CP.
- (ii) 90% of the CFA (CFA from MNRE), shall be paid after successful installation, commissioning of the Solar PV Power Plant and Net Metering Connection after submission of documentary evidence as per format published by APEDA subject to release of CFA by MNRE. Or it will be released to the beneficiaries if payment has been released to CP by the beneficiaries.
- (iii) 100% of the amount due from beneficiary for Solar Power Plant shall be release by APEDA after submission of documentary evidence as per format published by APEDA on receipt of beneficiaries share by APEDA. Or it may be directly paid by the beneficiaries to CP.
- (iv) The MNRE subsidy shall be released upon receipt of its sanction and release of funds to APEDA.
- (v) Balance 10% of the CFA due from MNRE shall be treated as performance security and shall be paid against satisfactory performance of the Solar PV Power Plant during warrantee, operation and maintenance period. This amount shall be paid equally in 5 years after completion of one year from the date of commissioning at site. The CP shall have to submit annual performance & functionality report to APEDA for release of annual payment.

2.5.2 Government Organization which are eligible for availing Achievement link incentives from MNRE:

- (vi) No mobilization advance would be paid by APEDA to the CP.
- (vii) The State subsidy amount/ share for Solar PV systems shall be fixed by APEDA and the same shall be released to the CP as per the following:

100 % of beneficiaries'/ state share after submission of the following necessary documents **in duplicate** to APEDA & after on-site verification/ inspection of the systems by APEDA and/or its authorized inspection agency/ies, as per the norms of APEDA and after Commissioning:

- a) Receipt of Bills.
- b) Beneficiary-wise record of system duly typed in English as per APEDA/ MNRE requirement & all documentary evidence as per format published by APEDA.
- (viii) 90% of the CFA (CFA from MNRE), shall be paid after successful installation, commissioning of the Solar PV Power Plant and Net Metering Connection after submission of documentary evidence as per format published by APEDA.
- (ix) The MNRE subsidy shall be released upon receipt of its sanction and release of funds to APEDA from MNRE.
- (x) Balance 10% of the CFA from MNRE shall be treated as performance security and shall be paid against satisfactory performance of the Solar PV Power Plant during warrantee, operation and maintenance period. This amount shall be paid equally in 5 years after completion of one year from the date of commissioning at site. The CP shall have to submit annual performance & functionality report to APEDA for release of annual payment.

Note:

- (i) All provisions as amended by APEDA/ MNRE, GoI from time to time in respect of subsidy, norms of admissible beneficiary and allowable capacity of PV systems shall be applicable to this scheme accordingly.
- (ii) Remaining cost (Project Cost – CFA / Incentive from MNRE) will be borne by beneficiary/ State.

2.6 Model of SPV Systems and tentative Quantities:

APEDA proposes to take up installation of grid connected PV Power Plants {With/Without Battery Backup} under this programme. The details of tentative quantities are as under:

Sl. No	PV System Model	Proposed beneficiary	Individual system PV Capacity eligible for subsidy	Total Tentative Targets for 2016-17
1	SPV Grid connected Power Plants without Battery bank.	Residential Buildings (eligible for 70% MNRE subsidy of benchmark cost)	1 kW – 5 kW	1 MW
2	SPV Grid connected Power Plants without Battery Bank.	Institutional building which are eligible for availing subsidy upto 70% of the benchmark cost (Except Government building)	20 kW	2 MW
3	SPV Grid connected Power Plants without Battery Bank:	Social sector building which are eligible for availing subsidy upto 70% of the benchmark cost (Except Government building)	10 kW	1 MW
4	SPV Grid connected Power Plants without Battery Bank:	Government building which are eligible for availing achievement link incentive	10 kW to 100 kW	2 MW

3.0 ELIGIBILITY AND EXPERIENCE

- 3.1 **ELIGIBILITY:** MNRE Channel Partner including channel partner under category of New Entrepreneurs & PSU for grid connected Solar Rooftop programme registered as MNRE CPs (listed online).
- 3.2 **SPECIFICATIONS:** The specifications of SPV systems, for which EoIs are invited, are annexed. The notarized Test Report(s) of each of the components/ systems mentioned should be attached with the EoI and the same should be installed at site.
- 3.3 **AFTER SALES SERVICES:** Bidders should have well established network of service centers within the state of Arunachal Pradesh and in Assam and should have adequately trained staff available at service stations for repair and maintenance of Solar PV Systems after or before award.
- 3.4 Bidders will ensure that necessary spares are always available in their service centers to provide necessary after sales service promptly to the customers during the warranty and AMC period.

4.0 INSTRUCTIONS TO THE CHANNEL PARTNERS

- A.1 Offer should be submitted complete in all respects with all schedules, documents etc. of the EoI document. Offers shall be received in APEDA office upto the date and time as mentioned in the EoI form.
- A.2 APEDA reserves the rights to reject any or all the Offers or accept any Offer in total or in part or may divide the work among various Bidders, without assigning any reason thereof.
- A.3 EoIs should be accompanied with requisite Document fee and Earnest Money Deposit (EMD). Any EoI not accompanied by required Earnest Money Deposit (EMD) and the EoI document Fee shall be disqualified and no further consideration shall be given to such EoI. Bidders may note that no relaxation in this regard shall be made.
- A.4 Earnest Money Deposit (EMD) of unsuccessful Bidders shall be returned back upon finalization of EoIs.
Earnest Money Deposit of successful Bidder will be retained as a part of the Security Deposit.
- A.5 If any information provided by the Bidders is found to be concealed, suppressed or incorrect at later date or during finalization of the EoI or the Bidders withdraws their offer during finalization of the EoI, the EoI shall be liable to be rejected and company shall be debarred from executing any business with APEDA for the period of 3 years and the EMD of such Bidders shall be forfeited.
- A.6 Validity of the offer should be at least up to **6 months** from the date of opening of EoI. Without this validity the Offers shall be rejected.
- A.7 Before submission of the Offer, Bidders are required to make themselves fully conversant with the scope of the work, technical requirements and specifications, etc., so that no ambiguity arises on a later date in this respect.
- A.8 All information in the Offer shall be in English. Information in any other language should be accompanied by its certified/ notarized translation in English. Failure to comply with this may disqualify the Bidders.
- A.9 If the Bidders find discrepancies or omissions in the specifications or in EoI documents or if he is in doubt as to their meaning, he should at once intimate APEDA and obtain clarification in writing within 7 days from the date of announcement of EoI, prior to submitting his Offer. Any representation/ requests after 7 days from the date of announcement of EoI shall not be entertained.

- A.10** Any approach from the Bidders, his representative or his agent to influence the decision on the Offer, officially or otherwise, shall render the Offer liable to be summarily rejected.
- A.11** Offer should be submitted in sealed envelopes super scribed with "*Empanelment of CP for Supply, Installation & Commissioning of Rooftop Solar Photovoltaic System in the State of Arunachal Pradesh for the year 2017-18*". All the papers of EOI documents duly signed should be submitted in the envelope. Requisite Earnest Money Deposit and EOI Document Fee in the form of Demand Draft drawn on a nationalized bank pledged in the name of "**Director, APEDA, Itanagar**", payable at Itanagar should be attached with this bid
- A.12** Erases and other changes shall be initialed by the person/persons signing the Offer.
- A.13** Each page of the Offer document should be signed and stamped by the Bidders as a token of acceptance to terms and conditions mentioned herein.
- A.14** Offers of only those firms or individuals, who are found technically capable and sound for providing such services and who give satisfactory evidence of such experience shall only be considered.
- A.15** The general technical requirements mentioned are mainly for the guidance of the Bidders. These requirements are not intended to preclude ingenuity of designs or other improvements. If the Bidders proposes any deviation from these requirements those shall be considered provided they are necessary either to improve the utility, performance and efficiency or to secure overall economy without affecting quality and performance. The Bidders shall give a separate list containing points of deviations in his offer from the specifications asked for.
- A.16** The Bidders shall declare the name of the employee of APEDA and his relationship with him in case any employee of APEDA is a relative of the Bidders.
- A.17** In the event, the successful Bidders fails to sign the agreement with APEDA or accept the work order within specified time or withdraws his offer within the validity period or fails to accept the order for any reason whatsoever, then the earnest money deposited by the Bidders shall be forfeited by APEDA.
- A.18** APEDA reserves the right to accept any offer based on its merits and APEDA is not bound to allocate targets with the party having submitted the lowest offer. Thus party merely on the ground that their financial offer is lowest, does not necessarily qualify them for receiving the allocation of targets.
- A.19** Only Notarized copies of documents will be submitted in support of claims made by the party. Party shall bring the original copies of documents for verification by APEDA officials, if called for. Details of similar work done ONLY in last three years along with copies of the orders and certificates from the end user to be attached with the EOI. **Extra copies/ documents which are not specified in the document may not be attached to the offer.**

5.0 GENERAL TERMS AND CONDITIONS OF CONTRACT

- B-1** In this EOI and Contract/ Deed of Agreement to be followed/signed, unless the context otherwise requires:-

APEDA shall mean the Director, Arunachal Pradesh Energy Development Agency or his representative, with Head Office at Urja Bhawan, T.T Marg, Itanagar-791111, and shall include his successors and assignees.

The Bidders shall mean valid MNRE registered channel partners for grid connected rooftop programme. **Consortium or Joint Venture is not allowed in this EoI.**

- B-2 The Bidders shall be deemed to have carefully examined all the papers, drawings, etc. attached in the EoI/ contract. If he has any doubt as to the meaning of any portion of any condition/ specification, etc. he shall before signing the contract submit the particulars thereof to APEDA in order that such doubts are removed.
- B-3 The work shall be completed within the completion period as would be mentioned in the agreement, failing which penalty shall be imposed as time is the essence of the contract. If the Bidders fail to complete the work within time limit, APEDA reserves the right to cancel the allocations. This excludes delay in the completion of the work due to unforeseen reasons beyond the control and without fault and negligence of the Bidders including (but not restricted to) act of God or public anomie action of Government in its sovereign capacity, floods, epidemics, strikes, lockouts, fires and accidents. In the event of any of the aforesaid contingencies APEDA may be promptly kept informed by the Bidders by Fax/Telex/Telegram followed by confirmation in writing with documentary proof within fifteen days of commencement and cessation of Force Majeure circumstances. Under such circumstances reasonable extension of time shall be granted by APEDA. Application for such extension must be made before the due date of completion of work as per agreement. In the event of termination of the agreement, APEDA shall be at liberty to get the remaining part of the work done through any other agency/Bidders in the manner and on the terms it thinks proper. If the cost of executing the work as aforesaid shall exceed the balance due to the Bidders, and the Bidders fails to make good the deficiency, APEDA may recover it from the Bidders in any lawful manner.
- B-4 The Bidders shall have to comply with all rules, regulations, laws and bylaws enforced by local and State Govt. and also the organization in whose premises the work has to be done.
- B-5 The Bidders shall not, without the consent in writing of APEDA, transfer, assign or sublet the work under this contract or any substantial part thereof to any other party.
- B-6 If the Bidders neglects to execute the work with due diligence and expedition or refuses or neglect to comply with any reasonable orders within two days notice given in writing to the Bidders and if he fails to comply with the notice, then in such a case APEDA shall be at liberty to get the work or any part of it, executed through any other agency/Bidders in the manner and on the terms it thinks proper. If the cost of executing the work as aforesaid shall exceed the balance due to the Bidders, and the Bidders fails to make good the deficiency, APEDA may recover it from the Bidders in any lawful manner.
- B-7 APEDA shall have at all reasonable time access to the works being carried out by the Bidders under the contract. All the works shall be carried out by the Bidders to the satisfaction of APEDA.
- B-8 Any question, dispute or difference whatsoever arises between APEDA and Bidders, in connection with the agreement except as to matters, the decision for which has been specifically provided, either party may forthwith give to the other notice in writing of existence of such questions, dispute, difference and the same shall be referred to the sole arbitration of a person nominated by both the parties in mutual understanding. This reference shall be governed by Indian Arbitration Act prevailing at the time of dispute and the rules made there under. The award in such arbitration shall be final and binding on all the parties. Work under the agreement shall continue during the arbitration proceedings unless the APEDA or the Arbitrator directs otherwise.
- B-9 APEDA may at any time by notice in writing to the Bidders either stop the work altogether or reduce or cut it down. If the work is stopped altogether, the Bidders shall only be paid for work done and expenses legitimately incurred by him as on preparation of the execution of the work upto the date on which such notice is received by him. Such expenses shall be assessed by APEDA whose decision shall be final and binding on the Bidders. If the work is cut down the Bidders shall not be paid for the work as so cut down, but in neither case shall be paid any compensation what so ever for the loss or

- Profit which he might have made if he had been allowed to complete all the work included in the contract.
- B-10 Prior to dispatch, the materials in lots may be inspected and tested by APEDA at the Bidder's works.
- B-11 The system supplied or installed shall be guaranteed by the Bidders for a minimum period of **five years** in regard to quality of material, workmanship, performance, efficiency, installation, etc. Defects developed in the system within guarantee period, shall be rectified by the Bidders at his own expense promptly. In case the defects are not rectified within 2 days of the receipt of the complaint by the Bidders, APEDA shall have full liberty to remove such defect or undertake such repairs as may be necessary to restore the system in working condition. The expenditure so incurred by APEDA shall be deducted from Bidder's pending claims, security, etc. and if necessary may be recovered in other mode provided under the law. In the event of failure of the complete system, if necessary, the whole system shall be replaced by the Bidders promptly.
- B-12 Notices, Statements and other communications sent by APEDA through registered post or telegram or telex or to the Bidders at his specified address shall be deemed to have been delivered to the Bidders.
- B-13 The work shall be carried out by the Bidders with prior approval of APEDA. Work carried out without APEDA's approval shall not be accepted and the APEDA shall have right to reject it and to recover the cost as so incurred, from the Bidders.
- B-14 All equipment/material shall be suitably packed for transport/carriage at site and outdoor storage during transit as per best industrial practices and appropriate standards. The Bidders shall be responsible for any damage to the equipment during transit due to improper or inadequate packing. The cases containing easily damageable material shall be very carefully packed and marked with appropriate caution symbols i.e. 'FRAGILE, HANDLE WITH CARE' etc. The contents of each package shall bear marking that can be readily identified from the package list and packing shall provide complete protection from moisture, termites and mechanical shocks during shipment/transportation to site. Adequate protection must be provided for outdoor storage at site in tropical humid climate, wherever necessary proper arrangement for attaching signs for lifting shall be provided and all packages clearly marked with gross weight, signs showing 'UP' and 'DOWN' sides of boxes, contents of each package, order no. And date, name of the plant/equipments to which the material in the package forms the part of, and any handling and unpacking instructions considered necessary. The Bidders without any extra cost shall supply any material found short inside intact packing case. The Bidders shall ascertain prior to shipment, from concerned authorities, the transport limitations like weight and maximum allowable package size for transportation. All packing cases and packing material shall become the property of the purchaser.
- B-15 The Bidders shall provide one copy of the instruction manual and routine maintenance manual in English with each system supplied or installed. These manuals should contain all the relevant details and drawings required for proper maintenance of the system supplied or installed.
- B-16 The Bidders shall not display the photograph of the work and shall not take advantage through publicity of the work without written permission of APEDA.
- B-17 The inspection as mentioned in clause No. B-10 by APEDA's representative shall not relieve the Bidders from full responsibility of completing the work conforming to the requirement of this contract.
- B-18 Conditional Eols shall not be accepted.

6.0 GUIDELINES & SPECIFIC TERMS AND CONDITIONS

1. Supply, Installation & Commissioning of grid connected Solar Rooftop Systems - 6 MW in the State of Arunachal Pradesh shall be done through Direct Sales by CP authorized by APEDA as per the rates fixed by APEDA. The quantity/ capacity mentioned herein is indicative only and it may vary depending on allocation of funds and target and requirement of projects.
2. The successful Bidder will be required to enter into an agreement with the APRDA as per the draft agreement of this document. The programme implementation guidelines of APEDA/ MNRE, as declared from time to time, for SPV programme shall also be followed at all times.
3. CP will be responsible to provide adequate training on repair and maintenance to their dealers and outlets of Solar PV Systems and the end users for which Empanelment is granted by the Agency/ APEDA.
4. CP will ensure that necessary spares are always with their dealers and outlets to provide necessary after sales service to the customers during the guarantee period.
5. CP will ensure that the SPV systems are marketed by them and their dealers as per the rates fixed by APEDA. **APEDA reserves the right to cancel the Empanelment of CP, if any dealer appointed by them is found to be marketing systems at rates other than those fixed by APEDA. In such event, the Security Deposit of the CP will be forfeited.**
6. APEDA shall allocate targets to various CP after the finalization of Empanelment of CP for the year 2017-18. The targets allocated for identifying & registering of beneficiaries shall be completed within **a period of 4 months**, failing which the targets shall be reallocated to other CP and necessary penalty shall be imposed, upon review of the progress by APEDA.
7. SPV Rooftop Systems shall be manufactured and marketed by the CP and the prevailing subsidy from MNRE shall be paid to the CP on behalf of the beneficiaries. The prices of SPV Rooftop Systems shall be fixed by APEDA.
8. To avail reimbursement of subsidy, application for SPV Rooftop Systems shall be submitted by the authorized CP along with the necessary details as per APEDA / MNRE requirements.
9. **After the issuance of sanction letter by APEDA for the beneficiary, beneficiary will not be permitted to change the CP. Change in the name of beneficiary is also not allowed.** Fresh application has to be made for new beneficiary. **Subsidy once cancelled due to any reasons shall not be reconsidered.**
10. **Empanelled CP, to whom targets are allocated for the year 2017-18, will be required to deposit security deposit of Rs.5,00,000/- or 5% of subsidy value of the target allocated to them, whichever is more.** The Earnest Money will become a part of this Security Deposit. The Security Deposit will be accepted in the form of Demand Draft issued by Scheduled Bank in favour of Director, APEDA payable at Itanagar. The Security Deposit can also be submitted in the form of Bank Guarantee issued by Scheduled Bank as per APEDA's format with validity for 12 months. The Security Deposit submitted in the form of Demand Draft will be retained till completion of target given or 12 months whichever is later. No interest will be paid on the Security Deposit. **The Earnest Money Deposit of the successful bidders will be adjusted as security deposit** and will form part of the total security deposit required to be deposited by the successful bidder.
11. **In the event of granting additional targets, the CP will be required to deposit additional Security Deposit on prorata basis within one week of the issuance of the additional target.**
12. It is very critical to Install & Commission systems as per the targets set by APEDA before the end of financial year. To ascertain the manufacturing capabilities of each CP, no. of systems that could be supplied, installed and commissioned by the CP in the state, every CP is

required to submit with their Technical offer, information about manufacturing capacity of their factory and no. of systems that could be supplied by them within the year of contract in the State under agreement with APEDA as per the Annexure – A. In the event of failure to supply no. of systems as committed by the CP as per Annexure – A as accepted by them while receiving the targets, will lead to forfeiture of the Security Deposit up to 100% and will lead to disqualification of the CP for transacting business with APEDA for at least three years or the time duration as may be decided by the APEDA.

13. APEDA, at its discretion, may allocate target to more than one CP and will decide the targets to be allocated to them. Decision of APEDA in this matter, will be binding to all the CP.
14. In case of any type of misappropriations, cheating or intention of cheating, frauds, irregularities, malpractice, etc. the APEDA reserves the right to cancel the Empanelment without giving reasons thereof and forfeit the security deposit.
15. **Rates quoted by the CP will be inclusive of taxes, levies, duties, packing, forwarding, freight, insurance, loading unloading, supply, installation, commissioning, and any/ all charges for successful Supply & Installation of the system at any locations** in the State of Arunachal Pradesh and all expenses of marketing, commissions etc
16. The rates quoted by the CP will be inclusive of Service Tax, Work Contract Tax, VAT or any other taxes applicable for such work. Any escalation in such taxes/ levies during the tenure of the contract/ Empanelment will not be paid by APEDA and CP are advised to take into consideration any such escalations in the prevailing taxes/levies/duties.
17. During site inspection by APEDA staff/ authorized representative, if the systems are found uninstalled and false report of installation & commissioning is submitted to APEDA for claiming payment, Director, APEDA is empowered to forfeit Security Deposit up to 100% and will lead to disqualification of the CP for transacting business with APEDA for at least three years or the time duration as may be decided by the APEDA.

7.0 OFFER EVALUATION CRITERIA

Offers are invited from CP having adequate infrastructure facilities for manufacturing, marketing and to provide prompt & reliable after sales service and satisfying criterion as per the following Offer Evaluation Criteria (OEC). Offers of only those parties who are found qualifying based on following Offer Evaluation Criteria will be taken in to further consideration and prices of only those parties qualifying based on these criterion will be opened.

TECHNICAL

- 1) Offers received from only those parties having adequate **infrastructure to Supply, Market and provide after sales services in the state** will be taken in to consideration and offers received from others will be summarily rejected. Documentary evidences in support of the same should be enclosed with the offer.
- 2) The party should be Registered **MNRE Channel Partners (CP) including CP** under the category of New Entrepreneurs and PSUs **for grid connected Solar Rooftop Programme**.
- 3) The CP should have a valid **test certificate from MNRE Authorized Test Centers for the systems offered by them**. A Notarized copy of the same should be attached with the offer.
- 4) Parties must have **authorized dealers**. A **Notarized copy of such dealership or tie-up agreement** should be attached with the offer.

- 5) The party should have **sufficient technically qualified and well-experienced manpower for Marketing, Installation and after sales service of the systems**. Brief bio-data of the key personnel must be enclosed with the offers as per Annexure-II of the Document.

GENERAL

- 1) The party should declare if any relative is working with/in APEDA.
- 2) As an acceptance of terms and conditions, the document duly signed and sealed on every page should be returned along with the offer.
- 3) **50% of the total capacity of the project shall be allocated between the all eligible bidders** and balance 50% of the capacity shall be allocated upon the review of the progress and successful completion of allocated targets.

Offers not satisfying any of the above mentioned criteria will be liable for rejection.

8.0 DRAFT AGREEMENT OF EMPANELMENT
(ON RS.100 NON-JUDICIAL STAMP PAPER)

AGREEMENT FOR SUPPLY, INSTALLATION & COMMISSIONING OF ROOFTOP SPV SYSTEMS IN ARUNACHAL PRADESH BETWEEN CHANNEL PARTNER (CP) AND ASSAM POWER DISTRIBUTION COMPANY LIMITED, GUWAHATI FOR 2017-18 ROOFTOP SPV PROGRAMME.

Validity : From _____ to _____ (EXTENDABLE).

This agreement made at Itanagar on thisday of, 2017 between Arunachal Pradesh Energy Development Agency having its registered office at Urja Bhawan, T.T Marg, Itanagar -791111, hereinafter referred to as "APEDA" which expression shall (Unless be repugnant to the context or meaning thereof) will deem to include, its successors, heirs, executors & assignees of the First Party;

AND

M/s, hereinafter referred to as the "CP" which expression shall unless be repugnant to the context or meaning thereof deem to include its successors, heirs, executors & assignees of the Second Party for implementation of APEDA/ MNRE Solar Photovoltaic Programme 2017-18 in the State of Arunachal Pradesh.

PREAMBLE

Marketing of SPV systems at subsidized prices will be done by CP authorized by APEDA. APEDA will grant prevailing subsidy as per guidelines of APEDA/ MNRE on Rooftop Solar PV Systems marketed by CP as per terms & conditions mentioned hereunder.

It is hereby agreed by APEDA and the CP desirous of supply, installation and commissioning the Rooftop Solar PV Systems as per the scheme of APEDA/ MNRE, to implement the SPV programme with following terms and conditions:

1. GENERAL TERMS AND CONDITIONS

- 1.1 The CP shall supply Rooftop Solar PV System as per specifications of APEDA/MNRE, and shall install them throughout the state through dealers/ distributors network created by them only after the issuance of sanction by APEDA.
- 1.2 The CP shall give **five year warranty** for Rooftop Solar PV Systems and **ten year warranty** for Solar Module to the beneficiaries from the date of installation & Commissioning of Rooftop Solar PV System and undertake repairs/replacements free of cost against any manufacturing or material defects directly or through their dealer during the warranty period. Format of warranty card to be supplied with each Rooftop Solar PV System shall be as per APEDA/ MNRE requirement
- 1.3 The CP shall arrange to provide to each beneficiary, a SPV instruction manual as per APEDA/ MNRE requirement. The CP shall also arrange to instruct each beneficiary about routine maintenance procedure.
- 1.4 All repairing work shall be completed within one week after receipt of complaint from the user. The CP shall arrange to provide spares required by the user at user's cost even after the guarantee period is over for at least another period of five years.
- 1.5 It is mandatory for the CP to achieve targets allocated to them in all the areas of the State.
- 1.6 It is very critical to Install & Commission systems as per the targets set by the APEDA before the end of financial year. In the event of failure to supply no. of systems, as committed by the CP as per **Annexure – A** of the Eoi, and as accepted by them while receiving the

(Seal & Signature of the CP)

authorization, will lead to forfeiture of the Security Deposit up to 100% and will lead to disqualification of the CP for transacting business with APEDA for at least **three years** or the time duration as may be decided by the APEDA.

2. GUIDELINES FOR APPOINTMENT OF DEALERS

- 2.1 Dealer should have permanent office premises in ARUNACHAL PRADESH with a phone connection.
- 2.2 The dealership commission will be paid by the CP. 'After Sales Services' shall be provided by the respective dealers. They should maintain a work register for complaint received and those attended. **The complaints received by APEDA will be considered while reviewing the performance and allotment of targets.**
- 2.3 Dealers should maintain sufficient stock of spare parts for Rooftop Solar PV System at any given time. Working hours should be displayed on board.

3 MANUFACTURING/ SUPPLYING OF ROOFTOP SPV SYSTEMS

- 3.1 APEDA will not issue any formal orders but will allocate targets for sanction of subsidy of Rooftop SPV Systems fixed for that year. Each CP shall be given a target, of which the overall achievement should be at least **70% by end of 6 months** and 100% by end of **12 months** after allocation. The targets allocated will be reviewed every month. However, if the progress is not found satisfactory, APEDA reserves the right to reallocate the targets and impose penalty.
- 3.2 The CP shall at all times follow the specifications of APEDA/ MNRE for Rooftop Solar PV System. Subsidy and other benefits shall be available only on those Rooftop Solar PV System designs, which are tested and found satisfactory by APEDA
- 3.3 Serial Number (identification mark) must be permanently marked on all major components (PCU, Module etc.) of the Rooftop Solar PV System.

4 INSPECTION OF SPV SYSTEMS

- 4.1 APEDA reserves the right to inspect any number of SPV systems, any number of times at the addresses of the beneficiaries given by the CP.

5. IDENTIFICATION OF BENEFICIARIES

- 5.1 CP shall be responsible for the identification of genuine beneficiary. CP shall select the suitable beneficiaries after visiting the site and check the pre-feasibility for installation of systems. **All applications of beneficiaries need to be registered with APEDA.** Necessary application form will be available on APEDA website.
- 5.2 Private residential consumers shall be eligible for subsidy. **No individual would be given more than one system.**
- 5.3 Installation of the systems shall be done only after the issuance of sanction by APEDA.
- 5.4 All Rooftop Solar PV System will be manufactured & installed strictly in accordance with the specifications given by APEDA in the EoI. **All wiring shall be concealed/ in Rigid PVC pipe/ PVC patti as per the requirement of site.**
- 5.5 **After the issuance of sanction letter by APEDA, change of beneficiary is not allowed and beneficiary cannot change the CP.** Fresh application has to be made for new beneficiary. **Subsidy once cancelled due to any reason shall not be reconsidered.**

6 PAYMENTS**2.5.1 Residential, Institutional & Social Sectors (except govt. organization) which are eligible for availing 70% CFA from MNRE**

- (i) No mobilization advance would be paid by APEDA to the CP.
- (ii) 90% of the CFA (CFA from MNRE) on available from MNRE, shall be paid after successful installation, commissioning of the Solar PV Power Plant and Net Metering Connection after submission of documentary evidence as per format published by APEDA
- (iii) 100% of the amount due from beneficiary for Solar Power Plant shall be released by APEDA after submission of documentary evidence as per format published by APEDA and on deposit of same by the beneficiary to APEDA or it may be released by the beneficiary to the CP directly under intimation to APEDA.
- (iv) The MNRE subsidy shall be released upon receipt of its sanction and release of funds to APEDA from MNRE.
- (v) Balance 10% of the CFA due from MNRE shall be treated as performance security and shall be paid against satisfactory performance of the Solar PV Power Plant during warrantee, operation and maintenance period. This amount shall be paid equally in 5 years after completion of one year from the date of commissioning at site. The CP shall have to submit annual performance & functionality report to APEDA for release of annual payment.

2.5.2 Government Organization which are eligible for availing Achievement link incentives from MNRE:

- (i) No mobilization advance would be paid by APEDA to the CP
- (ii) The State subsidy amount for Solar PV systems shall be fixed by APEDA and subsidy shall be released to the CP as per the following:

100 % after submission of the following necessary documents **in duplicate** at APEDA & after on-site verification/ inspection of the systems by APEDA and/or its authorized inspection agency/ies, as per norms of APEDA and after Commissioning:

- a) Receipt of Bills.
- b) Beneficiary-wise record of system duly typed in English as per APEDA/ MNRE requirement & all documentary evidence as per format published by APEDA.
 - (i) 90% of the CFA (CFA from MNRE) on sanction from MNRE, shall be paid after successful installation, commissioning of the Solar PV Power Plant and Net Metering Connection after submission of documentary evidence as per format published by APEDA.
 - (ii) The MNRE subsidy shall be released upon receipt of its sanction and release of funds to APEDA.
 - (iii) Balance 10% of the CFA due from MNRE shall be treated as performance security and shall be paid against satisfactory performance of the Solar PV Power Plant during warrantee, operation and maintenance period. This amount shall be paid equally in 5 years after completion of one year from

The date of commissioning at site. The CP shall have to submit annual performance & functionality report to APEDA for release of annual payment.

Note:

- (i) All provisions as amended by APEDA/ MNRE, GoI from time to time in respect of subsidy, norms of admissible beneficiary and allowable capacity of PV systems shall be applicable to this scheme accordingly.
- (ii) Remaining cost (Project Cost – CFA / Incentive from MNRE) will be borne by beneficiary.

Any dispute between the CP and APEDA regarding Supply, Installation & Commissioning of Rooftop Solar Photovoltaic Systems shall be settled through negotiations and arbitration under Indian Arbitration Act - (1996), failing which it will be settled in the court of Law for which the jurisdiction will be Itanagar.

In witness whereof the parties set their hand in token of confirmation and acceptance of the terms and conditions herein above written & mentioned.

**Signature of Authorized
Signatory & Name of
Authorized Signatory
(On behalf of CP with name)**

**Signature of Authorized Signatory &
Name of Authorized Signatory

(On behalf of
Arunachal Pradesh Energy Development Agency)**

9.0 TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS FOR GRID CONNECTED SPV SYSTEMS

The proposed projects shall be commissioned as per the technical specifications given below. Any short comings will lead to cancelation of subsidy in full or part as decided by APEDA. The specifications, if any, in the APERC Regulation on Net Metering shall also be applicable.

1. DEFINITION

A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables, solar meter, bi-directional energy meter and switches. PV Array is mounted on a suitable structure. Grid tied SPV system is without battery (with battery backup of 2 hours for residential building) and should be designed with necessary features to supplement the grid power during daytime. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

Solar PV system shall consist of following equipments/components.

- (iv) Solar PV modules consisting of required number of **Crystalline** PV modules.
- (v) Grid interactive Power Conditioning Unit with Remote Monitoring System.
- (vi) Mounting structures.
- (vii) Junction Boxes.
- (viii) Earthing and lightening protections.
- (ix) IR/UV protected PVC Cables, pipes and accessories.
- (x) Solar Meter and Bi-directional Energy Meter

1.1 SOLAR PHOTOVOLTAIC MODULES:

1.1.1 The PV modules used should be made in India, as per MNRE requirements.

1.1.2. The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC61730 Part-2- requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS.

- a) For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701
- b) The total solar PV array capacity should not be less than allocated capacity (KWp) and should comprise of solar crystalline modules of minimum **200** Wp and above wattage. Module capacity less than minimum **200** watts should not be accepted
- c) Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.
- d) PV modules must be tested and approved by one of the IEC authorized test centers.

- e) The module frame shall be made of corrosion resistant materials, preferably having anodized aluminum.
- f) The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid.
- g) Other general requirement for the PV modules and sub systems shall be the following:
 - I. The rated output power of any supplied module can have tolerance of +/-3%.
 - II. The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
 - III. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.
 - IV. I-V curves at STC should be provided by bidder

1.1.3 Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each modules (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).

- a) Name of the manufacturer of the PV module
- b) Name of the manufacturer of Solar Cells.
- c) Month & year of the manufacture (separate for solar cells and modules)
- d) Country of origin (separately for solar cells and module)
- e) I-V curve for the module Wattage, I_m , V_m and FF for the module
- f) Unique Serial No and Model No of the module
- g) Date and year of obtaining IEC PV module qualification certificate.
- h) Name of the test lab issuing IEC certificate.
- i) Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001

1.1.4. **Warranties:**

a) **Material Warranty:**

- i. Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than five (05) years from the date of sale to the original customer ("Customer")
- ii. Defects and/or failures due to manufacturing
- iii. Defects and/or failures due to quality of materials
- iv. Non conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at the Owners sole option

b) **Performance Warranty:**

- i. The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 year period and not more than 10% after ten years period of the full rated original output.

2. ARRAY STRUCTURE

- a) Hot dip galvanized MS mounting structures shall be used for mounting the modules/ panels/arrays. Each structure should have angle of inclination as per the site conditions to take maximum insolation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.
- b) The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed in Assam (150 km/hr). It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.
- c) The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS4759, material thickness should be minimum 2.5 mm.
- d) Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Aluminium structures also can be used which can withstand the wind speed of respective wind zone. Necessary protection towards rusting need to be provided either by coating or anodization.
- e) The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels
- f) Regarding civil structures the bidder need to take care of the load bearing capacity of the roof and need arrange suitable structures based on the quality of roof.
- g) The total load of the structure (when installed with PV modules) on the terrace should be less than **60 kg/m²**.
- h) The minimum clearance of the structure from the roof level should be **300 mm**.

3. JUNCTION BOXES (JBs)

- a) The junction boxes are to be provided in the PV array for termination of connecting cables. The J. Boxes (JBs) shall be made of GRP/FRP/Powder Coated aluminum /cast aluminum alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JB's shall be such that input & output termination can be made through suitable cable glands.
- b) Copper bus bars/terminal blocks housed in the junction box with suitable termination threads conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single /double compression cable glands. Provision of earthings. It should be placed at **5 feet** height or above for ease of accessibility.
- c) Each Junction Box shall have High quality Suitable capacity Metal Oxide Varistors (MOVs) / SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.
- d) Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification

4. DC DISTRIBUTION BOARD:

- a) DC Distribution panel to receive the DC output from the array field.
- b) DC DPBs shall have sheet from enclosure of dust & vermin proof conform to IP 65 protection. The bus bars are made of copper of desired size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.

5. AC DISTRIBUTION PANEL BOARD:

- a) AC Distribution Panel Board (DPB) shall control the AC power from PCU/inverter, and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while in grid tied mode.
- b) All switches and the circuit breakers, connectors should conform to IEC60947, part I, II and III/ IS60947 part I, II and III.
- c) The changeover switches, cabling work should be undertaken by the bidder as part of the project.
- d) All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air -insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz
- e) The panels shall be designed for minimum expected ambient temperature of 45 degree Celsius, 80 percent humidity and dusty weather.
- f) All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.
- g) Should conform to Indian Electricity Act and rules (till last amendment).
- h) All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions

Variation in supply voltage : +/- 10%

Variation in supply frequency : +/- 3%

6. PCU/ARRAY SIZE RATIO:

- a) The combined wattage of all inverters should not be less than rated capacity of power plant under STC.
- b) Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.

7. PCU/ Inverter:

As SPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the "Power Conditioning Unit (PCU)". In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to the power conditioning unit. Inverter output should be compatible with the grid frequency. Typical technical features of the inverter shall be as follows:

(xi) Switching devices : IGBT/MOSFET

- (xii) Control : Microprocessor /DSP
- (xiii) Nominal AC output voltage and frequency : 415V, 3 Phase, 50 Hz(In case single phase inverters are offered, suitable arrangement for balancing the phases must be made.) or Single phase as per consumer requirements.
 - (xiv) Output frequency : 50 Hz
- (xv) Grid Frequency Synchronization range : + 3 Hz or more
 - (xvi) Ambient temperature considered : -20o C to 50o C
 - (xvii) Humidity : 95 % Non-condensing
 - (xviii) Protection of Enclosure : IP-20(Minimum) for indoor.
: IP-65(Minimum) for outdoor.
 - (xix) Grid Frequency Tolerance range : + 3 or more
 - (xx) Grid Voltage tolerance : - 20% & + 15 %
 - (xxi) No-load losses : Less than 1% of rated power
 - (xxii) Inverter efficiency(minimum): >95%
 - (xxiii) THD: < 3%
 - (xxiv) PF : > 0.9
- a) Three phase/ single phase PCU/ inverter shall be used with each power plant system.
- b) PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.
- c) The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power, inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.
- d) Built-in meter and data logger to monitor plant performance through external computer shall be provided.
- e) The power conditioning units / inverters should comply with applicable IEC/equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068-2(1, 2, 14, 30) /Equivalent BIS Std.
- f) The charge controller (if any) / MPPT units environmental testing should qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS std. The junction boxes/enclosures should be IP 65(for outdoor)/ IP 54 (indoor) and as per IEC 529specifications.
- g) The PCU/ inverters should be tested from the MNRE approved test centres /NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

8. INTEGRATION OF PV POWER WITH GRID:

The output power from SPV would be fed to the inverters which converts DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization. In case of grid failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid. Once the grid comes into service PV system shall again be synchronized with grid supply and load requirement would be met to the extent of availability of power. 4 pole isolation of inverter output with respect to the grid power connection need to be provided, as per regulation.

9. DATA ACQUISITION SYSTEM / PLANT MONITORING

- i. Data Acquisition System shall be provided for each of the solar PV plant.
- ii. Remote Monitoring and data acquisition through Remote Monitoring System software at the owner /APEDA location with latest software/hardware configuration and service connectivity

for online / real time data monitoring/control complete to be supplied and operation and maintenance/control to be ensured by the CP. **Provision for interfacing these data on APEDA server and portal in future shall be kept.**

10. **METERING:**

- a) The bi-directional electronic energy meter (0.5 S classes) shall be installed for the measurement of import/Export of energy as per guidance of APEDA.
- c) The bidder must take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to APEDA before commissioning of SPV plant.
- d) Reverse power relay shall be provided by bidder (if necessary), as per the APEDA requirement.

11. **POWER CONSUMPTION:**

- a) Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid.

12. **PROTECTIONS**

The system should be provided with all necessary protections like earthing, Lightning, and grid islanding as follows:

12.1. **LIGHTNING PROTECTION**

The SPV power plants shall be provided with lightning & over voltage protection. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc. The entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be provided as per IEC62305 standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.

12.2. **SURGE PROTECTION**

Internal surge protection shall consist of three MOV type surge-arrestors connected from +ve and -ve terminals to earth (via Y arrangement)

12.3. **EARTHING PROTECTION**

- i. Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lightning arrester/masts should also be earthed inside the array field.
- ii. 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.

12.4. **GRID ISLANDING:**

- i. In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off immediately. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as "islands." Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to

Islanding protection) disconnection due to under and over voltage conditions shall also be provided.

- ii. A manual disconnect 4 pole isolation switch (RCCB) beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance.

13. **CABLES**

Cables of appropriate size to be used in the system shall have the following characteristics:

- i. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
- ii. Temp. Range: -10°C to +80°C.
- iii. Voltage rating 660/1000V
- iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
- v. Flexible
- vi. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.
- vii. Cable Routing/ Marking: All cable/wires are to be routed in a RPVC pipe/ GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified.
- viii. The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25 years.
- ix. The ratings given are approximate. All the cables required for the plant are to be provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons.
- x. Multi Strand, Annealed high conductivity copper conductor PVC type „A“ pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armoured cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/equivalent BIS Standards as specified below: BoS item / component Standard Description Standard Number Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V,UV resistant for outdoor installation IS /IEC 69947.
- xi. The size of each type of DC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 1%.
- xii. The size of each type of AC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2 %.

14. **CONNECTIVITY**

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the APERC regulation for Grid connectivity and norms of APEDA/ Department of Power, Govt. of AP and amended from time to time.

15. **DRAWINGS & MANUALS:**

- i. Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical datasheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.
- ii. Approved ISI and reputed makes for equipment be used.

16. **SOLAR PV SYSTEM ON THE ROOFTOP FOR MEETING THE ANNUAL ENERGY REQUIREMENT**

The Solar PV system on the rooftop of the selected buildings will be installed for meeting the annual energy requirements of PV capacity permissible by APEDA as per regulation issued by APERC.

17. **SAFETY MEASURES:**

The bidder shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc.

18.0 **BATTERY**

- Tubular Lead Acid Battery
- Battery should have a minimum rating of 24V, 150 Ah at C/10 rate of discharge.
- 75 % of the rated capacity of the battery should be between fully charged & load cut off conditions.
- Battery should conform to the latest BIS/ International standards

Annexure – A**10.0 SUPPLYING CAPACITY**

Name & Address of the CP	
Address of the Proposed Manufacturing Facility	
Solar Module	
Battery	
Power Conditioning Unit (PCU)	

Sl. No	Item	Supplying Capacity per Month	Proposed No. of systems committed to be supplied, installed and commissioned in the State in one year. (Nos./ kW)
1	Rooftop Solar PV System – 1 kW	_____ Nos.	_____ Nos. & _____ kW
2	Rooftop Solar PV System – 10 kW	_____ Nos.	_____ Nos. & _____ kW
3	Rooftop Solar PV System – 20 kW	_____ Nos.	_____ Nos. & _____ kW
4	Rooftop Solar PV System – 30 kW	_____ Nos.	_____ Nos. & _____ kW
5	Rooftop Solar PV System – 50 kW	_____ Nos.	_____ Nos. & _____ kW
6	Rooftop Solar PV System – 100 kW	_____ Nos.	_____ Nos. & _____ kW

Name of the Authorized Signatory: _____

Signature of the Authorized Signatory: _____

Seal of the Company:

Annexure – 1**GENERAL INFORMATION ABOUT THE BIDDERS**

1	Name of the Company/ Bidder	
2	Postal Address	
3	Telephone nos. Fax no.	
4	e-mail address and URL	
5	Type of Company Attach Proof of Company Registration along with a copy of the Partnership Deed/ Article of Association and Memorandum of Understanding	(i) Proprietorship/ (ii) Partnership/ (iii) Private Limited/ (iv) Public Limited (Pl. tick appropriately)
6	Name and designation of the representative of the Bidders to whom all reference shall be made to expedite technical co-Ordination etc	
7	Details of workmen on muster roll Skilled/ unskilled. (attach copy of muster roll)	
8	Has the company/firm to pay any arrear of income tax? If yes upto what amount and which year?	
9	Has any Govt. Deptt./ Under-taking ever debarred the company/ firm from executing any work?	

It is certified that the information provided above is true to the best of my knowledge and belief. If any information found to be concealed, suppressed or incorrect by APEDA at later date, our Eoi shall be liable to be rejected and our company debarred from executing any business with APEDA.

Date:

Sign. and Stamp of the CP

ANNEXURE – 2

DECLARATION

(Strike off whichever is not applicable)

This is to declare that Mr./Ms. _____, employee of APEDA at _____(place), is related to our _____(designation & name).

OR

This is to declare that none of the Proprietors/ Partners/ Directors are having any relatives employed or working with APEDA.

Date:

Sign. & Stamp of the CP

Annexure – 3

Marketing Network addresses

Name & Address	Contact person, mobile number, fax no., email

MEMORANDUM OF UNDERSTANDING (format)***(to be signed in 3 copies, one for User Agency, one for Supplier and one for APEDA)***

This memorandum of understanding is made today on _____ between M/s.
 _____ (Supplier)
 _____ (Address)
 and _____

(hereafter referred as "**User Agency**") for installation of Grid connected Solar PV Rooftop System (GCRTS) under subsidy scheme 2017-2018 of MNRE/ APEDA.

It has been agreed upon by and between the said parties as under:

1. User Agency has registered the project with registration number _____ for installation of GCRT under MNRE/ APEDA's subsidy scheme 2017-2018 through the above authorized Supplier of APEDA.
2. A Subsidy in terms of Rs. per kW as fixed by APEDA would be disbursed by APEDA after successful installation and commissioning of Rooftop Solar System by private **Residential Consumers, Institutions, Social sectors & Government buildings.**
3. GCRTS installed under APEDA/MNRE subsidy scheme 2017-2018 will not be transferred/ sold/ disposed without prior approval of APEDA for a period of five years.
4. APEDA will not be responsible or party for any dispute with the manufacturer selected by the user agency.
5. User Agency shall follow the instructions given by Supplier for proper function of the system and its upkeep; and shall inform the Supplier immediately for its non – functioning. Supplier shall provide necessary service for the breakdown maintenance of the system for the **period of 5 years.**

This memorandum of understanding commencing from the date of signing of this Memorandum of Understanding will be valid for a period of five years.

In witness whereof these parties have set their hands in token of affirmation and acceptance of the terms and conditions herein above written and mentioned.

Signature on behalf of user agency:

On behalf of Supplier with rubber stamp

Date:

PART - II

FINANCIAL OFFER

- (i) Rates quoted by Bidder will be FOR destination prices inclusive of taxes, levies, duties, packing, forwarding, freight, insurance, loading unloading, supply, installation, commissioning, and any/all charges for successful Supply & Installation of the systems at any locations in the State of Arunachal Pradesh and all expenses of marketing, commissions etc
- (ii) The rates quoted by the Bidder will be inclusive of Service Tax, Work Contract Tax, VAT/ GST or any other taxes applicable to such work. Any escalation in such taxes/ levies during the tenure of the contract/ order, will not be paid by APEDA and Bidder are advised to take into consideration any such escalations in the prevailing taxes/levies/duties.
- (iii) The rates quoted shall be exclusive of APEDA Registration fee, Earnest Money, DISCOM connectivity fees for Net Metering etc.
- (iv) In no circumstances, escalation in the prices will be entertained.
- (v) The rates must be submitted as per the enclosed proforma of schedule of rates.
- (vi) **No Road Permit shall be given by APEDA to the CP regarding transportation of materials to site.**

SCHEDULE OF RATES

Name and address of CP	
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Sl. No	Items	Rate per Watt in figure (Rs./ Wp)	Rate per Watt in words (Rs./ Wp)
1	Rooftop Solar PV System – 1 KWp		
2	Rooftop Solar PV system – 5KWp		
3	Rooftop Solar PV System – 10 kWp		
4	Rooftop Solar PV System – 20 kWp		
5	Rooftop Solar PV System – 30 kWp		
6	Rooftop Solar PV System – 50 kWp		
7	Rooftop Solar PV System – 100 kWp		

Name of the Authorized Signatory:

Signature of the Authorized Signatory:

Seal of the Company:

(Seal & Signature of the CP)