

TENDER DOCUMENT

Name of Work: Site Survey, designing, drawing, manufacturing, supply, installation, testing and commissioning of 100KWp Grid Connected Solar PV Plant including 5 years Annual Maintenance Contract(AMC) at Civil Secretariat, Itanagar, Arunachal Pradesh

- | | |
|--|------------------------------|
| 1. ESTIMATED COST | : RS.145.50 LAKHS |
| 2. COST OF TENDER | : RS.3000.00 |
| 3. EARNEST MONEY DEPOSIT | : RS.2.91 LAKHS |
| 4. LAST DATE OF SUBMISSION
OF TENDER (Online) | : 29/ 03/2017 upto 1600 Hrs. |
| 5. DATE OF OPENING OF
TECHNICAL BID (Online) | : 30/03/2017 at 1330 Hrs. |
| 6. DATE OF OPENING OF
PRICE BID (Online) | : 31/03/2017 at 1330 Hrs. |



Arunachal Pradesh Energy Development Agency (APEDA)

Urja Bhawan, TT Marg, Itanagar-791111

Papumpare District: ARUNACHAL PRADESH

E-Mail: apeda79@gmail.com

Tel.No. 0360-2211160

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CHAPTER - I
NOTICE INVITING TENDER



OFFICE OF THE DIRECTOR
ARUNACHAL PRADESH ENERGY DEVELOPMENT AGENCY
(A STATE GOVERNMENT AGENCY)
URJA BHAWAN, TADAR TANG MARG

Ph. : 0360 – 2211160 (O)
0360 – 2215963 (R)
[E-mail-
apeda79@gmail.com](mailto:apeda79@gmail.com)

NO. APEDA/W-294/SPV Plant (Civil Secretariat)/2017/2167-76 Dated, Itanagar 14th March'2017

NOTICE INVITING e-TENDER

Online tenders are invited by Arunachal Pradesh Energy Development Agency (APEDA), Itanagar in two parts, Part-I (Technical Bid) and Part-II (Price Bid) from reputed manufacturers of SPV Cells/ Modules / Battery / Electronics Systems and Systems Integrators, who are registered as Channel Partners of MNRE for turn-key execution of work “*Site survey, designing, drawing, manufacturing, supply, installation, testing & commissioning of 100KWp Grid Connected Solar PV Power Plant including 5 years AMC at AP Civil Secretariat, Itanagar, Arunachal Pradesh*” as per the standards & specifications of MNRE, Govt of India.

Interested bidders are required to conduct site survey of the area where the plants are to be installed and then design the plant according to site requirement. The bid documents can be downloaded from website www.apeda.org.in and www.arunachaltenders.gov.in from **1000Hrs of 15th March, 2017 till 1200 Hrs of 29th March, 2017**. The last date for submission of tender documents (online) shall be **29th March, 2017 till 1600 Hrs**. The Technical Bids shall be opened (online) on 30th March, 2017 at 1330Hrs and the Price Bids of those who qualify in the Technical Bids shall only be opened on 31st March at 1330 Hrs. The bidders are required to submit hard copies of their bids at the time of opening of technical bids for cross verification.

Sd/-
Director
APEDA, Itanagar.

Copy to :

1. The Chairman, APEDA, Itanagar for information please.
2. The Commissioner, Power & NRE, Govt. of A.P , Itanagar for information please.
3. The Addl. Secy.(Power), Govt. of AP, Itanagar for information.
4. The Director, Information & Public Relation, Govt. of A.P, Naharlagun with the request to publish the above NIT in one of the National Newspapers and in one of the Local Dailies.
5. The DD, APEDA, Aalo/Yachuli/Tezu/Bomdila/ Itanagar for information.
6. The Account Officer, APEDA, Itanagar for information.
7. Websites: www.apeda.org.in and www.arunachaltenders.gov.in
8. Office Copy.

Sd/-
Director
APEDA, Itanagar

CHAPTER -II
CHECK LIST OF ANNEXURES
(To be furnished by the Bidder)

Sl. No	Particulars	Submitted (Yes/ No.)	Page No.
1	Annexure- I (Covering Letter) to be in front page of bids		
2	Annexure –II (Details of Earnest Money)		
3	Annexure-III (Details of Work experience)		
4	Annexure-IV (Format for Warrantee Card)	Not to be submitted now.	
5	Annexure –V (Format for Monthly O&M and AMC/CMC report)	Not to be submitted now.	
6	Annexure-VI (Format for Power of Attorney /Authorization letter)		
7	Annexure-VII (Format for Annual Turnover of the Company)		
8	Annexure-VIII (Format for Handing over certificate after commissioning)	Not to be submitted now.	
9	Annexure- IX (Format for Completion Report)	Not to be submitted now.	
10	Annexure-X (Format for Performance Bank Guarantee)	To be submitted by successful bidder at the time of award.	
11	Annexure-XI (Suggestions from Bidder)		
12	Annexure –XII (A) & Annexure-XII (B) (Design and drawings are to be submitted by the bidder after site visit and based on the indicative layout plan given in the tender document)		

CHAPTER-III

PARTICULARS OF TENDER

1. NIT No. & Date : APEDA/W-294/SPV Plant (Civil Secretariat)/2017/2167-76
Dated, Itanagar 14th March'2017.
2. Name of Work (Package-I) :Site Survey, Designing, drawing, manufacturing, supply, installation, testing and commissioning of 100KWp Grid Connected Solar PV Plant at AP Civil Secretariat, Itanagar, Arunachal Pradesh.
3. Period for work completion :**06 months** from the date of signing of the agreement.
4. Cost of tender document :Rs 3000/- in the form of Bank Draft issued by a nationalized bank in favour of Director, APEDA payable at Itanagar.
5. Amount of Earnest Money :**Rs.2,91,000.00 (Rupees Two Lakhs Ninty One thousand)** only to be deposited along with the technical bid in the form of Demand Draft issued by a nationalized bank in favour of Director, APEDA, Itanagar payable at SBI, Itanagar.
6. Period of validity of tender :3 months from the date of opening of Financial/ Price bid.
7. Tenders are to be submitted in two Parts :
- Part-I (Technical Bid):**
All the qualifying Technical and Commercial documents like Test Certificates of the equipments, Make of the equipments, Experience Certificate with PO/ LoI/ Award Letter/ Completion Certificates, Credentials of the firm, Company's profile, Design aspects and drawings, Standards & specifications, etc including Earnest Money should be submitted in this Part. (Note: Participating bidders should physically visit and conduct site survey before taking part in the tender and then submit their design and drawings in the Technical Bid).
- Part-II (Price Bid):**
Nothing other than the Price Bid (Rates and Amount) should be submitted in this Bid.
8. Last Date and Time of submission of Bid : 29th March 2017 till 1600 Hrs.
9. Date and Time of opening of Technical Bid : 30th March 2017 at 13:30 Hrs
10. Date and Time of opening of Price Bid : 31st March 2017 at 1330 Hrs.
11. Place of opening of tender : Urja Bhawan, T.T. Marg, Itanagar -791111

CHAPTER -IV

GENERAL PARTICULARS OF TENDERER/ BIDDER

(To be furnished by the bidder)

1. Name of firm :
2. Postal Address :
3. Telegraphic address :
4. Telephone & Fax No :
5. E-mail :
6. Web site :
7. Name, Designation and Contact No., Landline and Mobile :
No. of the CEO/ Director/ MD/ Head of the company.
8. Name, Designation and Contact No., Landline and Mobile :
No. of the representative of the bidder to whom all
Correspondences and references shall be made.
9. Amount of the Earnest Money Deposited :
(Indicate DD No. & date)
10. Financial capability of the bidder to carrying out the work :
(to be proved with a solvency certificate issued by a bank)
11. Technical Soundness of the bidder
(Indicate works executed in last three years) :
12. Whether the bidder is a Proprietary Firm or Private Ltd. Co.
or a PSU or a Public Ltd. Company or a Joint Venture or
any other (Enclose Registration Certificate and MoA) :
13. Is the bidder a registered/ accredited Channel Partner of MNRE :
(Enclose Certificate)
14. TAN/ TIN No. (Enclose Certificate) :
15. PAN No. (Enclose PAN Card). :
16. Name and address of the Indian/ foreign :
Collaboration if any.
17. Mention name of equipments/ devices manufactured Or activities dealt
and or the activities dealt with by the firm/ Co. :

18. Has the bidder to pay arrears of income :
Tax? if yes, up to what amount and which year
19. Has the bidder been ever debarred by any :
Govt. Deptt./ Undertaking from undertaking any work or tender
20. Details of offer (please mention number of pages :
and number of Drawings attached).
21. Has the bidder any relative working in APEDA, :
(if yes, state the name and designation)

(Signature of Bidder)
with SEAL

CHAPTER-V

EXPERIENCE ON SPV POWER PLANT/ PROJECT COMPLETED

Please fill in information about similar projects undertaken

1. Name of organizations which awarded the works :
(Enclose copy of Work orders/PO/LoI/Award letter)
2. Nature of work done and location of the work :
3. Capacity of the SPV Power Plants Installed :
4. Total contract amount :
5. Year of award and year of Completion :
7. Was the work satisfactorily completed :
Within stipulated period? (Certificates from
Clients to be attached).

**(Signature of Bidder)
with SEAL**

CHAPTER - VI
DECLARATION BY THE TENDERER

I/We_____ (hereinafter referred to as the Tenderer or Bidder) being desirous of tendering for the work under the above mentioned tender and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the tender document, DO HEREBY DECLARE THAT-

1. The Tenderer is fully aware of all the requirements of the tender document and agrees with all provisions of the tender document.
2. The Tenderer is capable (technically & financially) of executing and completing the work as required in the tender.
3. The Tenderer accepts all risks and responsibilities directly or indirectly connected with the tender process and performance of the systems and works they would be supplying/ executing.
4. The Tenderer has no collusion with other tenderer, any employee of APEDA or with any other person or firm in the preparation of the bid.
5. The Tenderer has not been influenced by any statement or promises of APEDA or any of its employees, but only by the tender document.
6. The Tenderer is financially solvent and sound to execute the work.
7. The Tenderer is sufficiently experienced and competent to perform the contract to the satisfaction of APEDA.
8. The information and the statements submitted with the tender are true.
9. The Tenderer is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnels employed therein.
10. The Tenderer has not been debarred from similar type of work by APEDA or any Government undertaking/ Department.
11. This offer shall remain valid for acceptance for 3 (three) months from the date of opening of the tender.
12. The Tenderer has attached herewith the earnest money as required in the tender document.
13. The Tenderer accepts that the earnest money be absolutely forfeited by APEDA , if the tenderer fails to undertake the work or sign the contract within the stipulated period.
14. The Tenderer gives the assurance to execute the tendered work as per specifications, terms and conditions as laid down in the tender document.

(Signature of Bidder)
with SEAL

CHAPTER - VII
ELIGIBILITY CONDITIONS

1. The tenderer should be a registered manufacturing company/ firm of SPV Cells / Modules / Battery / PV System Electronics (Conforming to relevant National / International Standards) or experienced System Integrator registered/ accredited in MNRE as a Channel Partner who have already supplied ,installed and commissioned solar power plants of capacity not less than 100KWp (single power plant or aggregate) grid connected solar power plants in last three years. The experience certificate, related registration / empanelment certificates under the MNRE ,GoI should be substantiated.
2. Technical Performance of PV module/Battery/Balance of System (BoS) should be duly supported by valid test certificates issued by the IEC/NABL/MNRE approved test centres as per the guidelines of Jawaharlal Nehru National Solar Mission.
3. The Tenderer shall submit **latest test certificate of Solar PV Modules/Battery /PCU/Connecting cables etc as per IEC/ISI/MNRE Standards** (Details to be enclosed as per Technical Specification).
4. The tenderer should have valid **PAN Card and CST / VAT/TAN/TIN** registration certificate and a copy of same should be enclosed. Tenderer should also have Company's registration certificate
5. The tenderer should have adequate financial capability to meet the financial obligations in pursuant to the scope of works. In this regard, the **TURN OVER** of at least **Rs. 1.00 crore** in each of the past 3 years should be confirmed on the basis of Audit report/ audited balance sheets by CA . The tenderer should also submit the above information about the turnover in a summarized sheet verified by a registered C.A. along with the required EMD amount.
6. **The Consortium, Business Partnership, Power of Attorney holder and Joint Venture is/ are not allowed to participate in this tender.**
7. The Tenderer should have experience of supply and installation of solar power plant not less than 100KWp (single plant or aggregate) grid connecte in last 3 years. It should be substantiated by the documentary evidence like Supply Order/ Award Letter/Work Order/LoI/Agreement/Completion Report clearly indicating the Details of work, Standard & Specification, Project Cost etc.
8. The bidder should be financially sound/solvent to execute the work . A Solvency Certificate to the effect should be submitted by the tenderer. APEDA will have the liberty to decide the capability of the participating tendered based on this solvency certificate.
9. The successful bidder will be required to submit the Performance Gaurantee in the form of a Bank Guarantee equivalent to 5% of the total bid amount pledged in favour of Director, APEDA, Itanagar which should be valid till the completion of the project.
10. The bidders are required to visit the site and do proper assessment and then submit the bids with a **proper design and drawing** of the project. The bids without the proper design and drawing will not be accepted.
11. The bidders are required to submit the cost of tender document amounting to Rs.3000.00 (Rupees three thousand) only in the form of Demand Draft along with the technical bids. The scanned copy of the DD should be submitted online with the technical bids and the original copy of the DD with the hard copy of the bids.
12. The Tender should be submitted along with the Earnest Money Deposit (EMD) for Rs.2.91 Lakhs in form of Demand Draft from any nationalised bank in favour of the Director, APEDA, Urja Bhawan,

Itanagar. Tender without EMD will be rejected. The scanned copy of Demand Draft should be submitted online with the technical bids and the original copy with hard copy of bids.

13. The bidder should come with the original hard copies of the bids at the time of opening for cross verification.
14. The tender document downloaded from the website will be the guiding reference. Nothing should be written on it, but it should be submitted along with the bids by the tenderers duly signed and sealed on all pages.
15. The bidders are required to read the tender documents thoroughly carefully before preparing the bids to avoid rejection.

CHAPTER - VIII

INSTRUCTIONS TO BIDDERS

1.0 CONTENT OF TENDER DOCUMENT:

1.1 The tender procedures and terms and conditions are prescribed in the Tender Document. The tendere / bidder is expected to read the document carefully and examine all instructions, forms, terms, conditions and specifications etc. and follow them while preparing the tender. Failure to furnish all information and required documents as per the Tender document shall be considered as non-responsive and is likely to result in out-right rejection of the tender.

2.0 INFORMATION WHICH MAY BE FELT REOUIRED IN THE TENDER:

- 2.1 The tenderer may also provide any other information with the tender in the form of separate sheets, drawings, catalogues etc if he thinks that it is required so.
- 2.2 Any tender not containing sufficient descriptive material to describe the equipment proposed may be treated as incomplete and hence may be rejected. Such descriptive materials and drawings submitted by the tenderer shall be retained by the APEDA. Any departure from these drawing and descriptive material submitted shall not be permitted during the execution of contract without specific written permission of the APEDA.

3 .0 LOCAL CONDITIONS

3.1 It shall be imperative on each bidder to be fully informed of all local conditions and factors, which may have any effect on the execution of the works covered under these documents and specifications. APEDA shall not entertain any request for clarifications from the tenderer, regarding such local conditions during the tender process.

4.0 CLARIFICATION OF TENDER DOCUMENTS

- 4.1 A prospective tenderer requiring any clarification on the Tender Document may contact APEDA in writing or by e mail with the scan copy of signed letter .
- 4.2 Verbal clarifications and information given by the APEDA or its employees or its representatives shall not be in any way entertained.

5.0 AMENDMENT OF TENDER DOCUMENTS

5.1 At any time prior to the submission of the tender or prior to the opening of the financial bid, the APEDA may, for any reason, whether at its own initiative or in response to a clarification requested by the tenderer, modify the tender documents by amendments.

5.2.1 The amendment will be notified in writing or through website or by e mail to all prospective tenderers and will be binding on them. APEDA will bear no responsibility or liability arising out of non-receipt of the such ammendment in time or otherwise.

6.0 LANGUAGE OF BID AND UNIT OF MEASUREMENT:

The tender prepared by the tenderer and all correspondence and documents relating to the bid exchanged by the tenderer and APEDA shall be written in the English provided that any printed literature furnished by the Tenderer may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purpose of interpretation units of measurement shall be MKS system.

7.0 DOCUMENT COMPRISING THE BID

The tender prepared by the tenderer shall comprise the following components.

7.1 **Part – I (Technical & Commercial Bid):**

This part of bid will contain the following document. It is indicative only.

- (a) Covering letter as provided in tender document and should be in the front page.
- (b) Tender Document
- (c) Documentary evidence establishing that the bidder is eligible to tender and is qualified to perform the contract if its tender is accepted.
- (d) Earnest money furnished in accordance with the tender requirements.
- (e) Authorization letter of the tenderer, for the person representing his firm that he is authorized to discuss and sign with specific mention of this tender.
- (f) The tender document issued by APEDA will be the guiding reference. Nothing should be written on it and it should be submitted along with the bid by the tenderer duly signed and sealed on all pages.

7.2 **Part – II (PRICE BID)**

7.2.1 The Tenderer shall indicate unit prices and amount on the appropriate financial bid schedule attached to these documents. Price Bid should be submitted in a separate envelope as per the prescribed format given in the tender document. The envelope should be marked as the Price Bid (Part-II) after uploading in the tender web portal.

8.0 DUTIES AND TAXES

The price quoted should include all taxes and duties, custom duty, excise duty, service tax, sales tax, C.S.T., local taxes, Trade Tax/ VAT /Entry Tax of Arunachal Pradesh, Income Tax, Surcharge on income tax etc. if any. The tenderer shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable as per Government income tax & service tax norms will be payable by the tenderer. If any new tax/ duty is levied during the contract period the same will be borne by the firm exclusively. TDS will be deducted from the payment of the tenderer as per the prevalent laws and rules of Government of India and Government of A.P. The amount of taxes subject to TDS shall be shown clearly by the firm in the bills.

9.0 BID CURRENCIES

Prices shall be quoted in Indian Rupees (INR) only.

10.0 BID SECURITY (Earnest Money)

10.1 The bidder shall furnish, as part of its bid, bid security (Earnest Money) as mentioned in the tender document in the form of a bank draft issued by a nationalized bank or State Bank of India and its subsidiary banks recognised by the RBI in favour of “ Director, APEDA” payable at Itanagar.

10.2 Any bid not secured with the earnest money will be rejected by the APEDA as non-responsive.

10.3 No Interest shall be payable on the amount of earnest money and the same will be released, after the tenders have been decided, to those tenderers who fail to get the contract. The earnest money of successful tenders shall be converted into agreement security and shall be released as per the agreement of the project .

10.4 The Bid security (earnest money) may be forfeited:

10.4.1 If a bidder withdraws its tender during the period of tender validity specified on the tender form.

10.4.2 If the successful tenderer fails to sign the contract within stipulated time period.

10.4.3 If the tenderer fails to carry out the work as per the agreement.

11.0 PERIOD OF VALIDITY OF TENDER

11.1 Validity of the offer should be **3 months** from the date of opening of the financial bid of the tender. Without this validity the tenders will be rejected.

11.2 In exceptional circumstances; the APEDA will solicit the tenderer’s consent to an extension of the period of validity. The request and the response there of shall be made in writing.

12.0 FORMAT AND SIGNING OF TENDER

12.1 The bid must contain the name, residence and places of business of the persons making the tender and must be signed and sealed by the Tenderer with his usual signature. The name and designations of all persons signing should be typed or printed below the signature.

12.2 Tender by corporation/ company must be signed with the legal name of the corporation/ company by the President, Managing Director, Chief Executive Officer, Director or by the Secretary or other designation. Without disclosing his Principal, the tender may be rejected.

12.3 The original copy of the Tender shall be typed or written in indelible ink and shall be signed by the tenderer or a person duly authorized to bid and bidder to the contract. The person authorised to represent the firm should be a regular employee and should be an executive level officer. The letter of authorization shall be submitted along with the bids. All the pages of the bid shall be initialled by the person or persons signing the tender.

12.4 The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Tenderer in which case such corrections shall be initialled by the person or persons signing the tender.

13.0 SUBMISSION PROCEDURE OF TENDER

- 13.1 The tender must be complete in all technical, commercial and financial aspects and should contain requisite certificate, drawings, informative literature etc. as required in the specification. Any queries made should be promptly replied within following time schedule.
- 13.2 Fax/Email query required to be replied by fax/mail with full signature : 2 days
- 13.3 Query by letter to be replied by letter : 7 days
- 13.4 All the pages of the tender document, attachments, drawings, etc. should be duly sealed and signed by the authorised signatory. Failure to do so might lead to rejection of the offer.
- 13.5 There should be a single covering sealed envelope for each tender and it should contain two separate envelopes (sealed) superscripted as **Part-I (Technical and Commercial Bid) and Part-II (Price Bid/Financial Bid)**.
- 13.6 **Part-I (Technical and Commercial Bid)** should contain earnest money, technical specification, Commercial terms & conditions, brochures, literatures, etc. All parts of tender documents and annexures (except financial / price bid) duly signed should be submitted in the first envelope. Requisite earnest money in the form of Bank Draft should also be attached.
- 13.7 **Part-II (Price / Financial Bid)** should contain financial bid only. The tenderer should submit price bid duly signed on the original Financial Bid attached with this tender document. It should be superscripted with **Part-II (Price / Financial Bid)**. Anything in regard of financial condition, payment terms, rebate, etc. mentioned in Financial bid may make the tender invalid. Therefore, it is in the interest of the tenderer not to write anything extra in Part-II except the unit price and amount.
- 13.8.1 Both the **Part –I** and **Part – II** and the covering sealed envelopes super scribed with the Tender NIT No. and Date of Opening , should be submitted to the Director, APEDA, Urja Bhawan, T.T. Marg, Itanagar-791111 (Arunachal Pradesh.)

14.0 EXPENSES OF AGREEMENT

A formal agreement shall be entered between APEDA and the successful tenderer for the proper fulfilment of the contract. The expenses of completing and stamping of the agreement shall be paid by the tenderer.

15.0 DEADLINE FOR SUBMISSION OF BIDS

Bids must be submitted at the date and time specified in the tender documents.

16.0 LATE BIDS

No late bid and no claim regarding late submission shall be entertained.

17.0 TENDER OPENING AND EVALUATION

- 17.1 First envelope superscripted as Part – I (Technical Bid) shall be opened at the time and date mentioned in the tender notice in the presence of tenderers, who choose to be present.

17.2 Second envelope superscripted as Part – II(Price Bid) shall be opened after obtaining commercial clarifications and establishing technical suitability of the offer as per schedule provided in the tender document. Second envelope of only those Tenderers shall be opened whose documents given in first envelope (Part-I) shall be found commercially clear and technically suitable and shall be done within one week from the date of opening of Part-I or on the same day as may be decided, but after proper evaluation of Technical Bid.

17.3 In case it is not possible to open second envelop (Part-II) or Part-I on the day fixed due to unavoidable circumstances then the opening shall be postponed and shall be done on next working day. It will be in the interest of the tenderers/ bidders to send their authorized representatives well conversant with the tender and competent enough to take decision on technical and financial matters at the time of opening of tender.

18.0 CLARIFICATION OF TENDER

18.1 To assist in the examination, evaluation and comparison of bids, the APEDA may at its discretion ask the bidders for clarification(s) of their bid. The request for clarification and the response shall be in writing.

19.0 AWARD OF CONTRACT

19.1 APEDA reserves the right of negotiation with eligible tenderers before finalization of the tender

19.2 The APEDA reserves the right at the time of award of contract to increase or decrease the quantity of goods and change locations of supply without any change in price or other terms and conditions.

19.3 APEDA reserves the right to reject any or all the tenders or accept any tender in total or in parts thereof.

20.0 NOTIFICATION OF AWARD

Prior to the expiry of the period of tender validity the APEDA will notify the tenderers by registered letter or e-mail or Fax that the bid has been accepted.

21.0 EXECUTION PERIOD

The work shall have to be completed within 06 **months** from the date of award of work/ Letter of Intent(LoI).

22.0 CONTRACT AGREEMENT

Before execution of the work, a Contract Agreement for execution of the work shall be signed by APEDA with the successful tenderer. Tenderer has to sign the agreement within 7 days of communication of acceptance of the offer by APEDA; otherwise earnest money of the tenderer deposited with the tender shall be forfeited and the work shall be put to retender.

23.0 SITE VISIT AND SIZING OF PLANT

The bidders are required to visit the site of installation prior to taking part in the tender and work out the capacity that can be installed as per the layout drawing attached in the Tender Document.

CHAPTER - IX
GENERAL CONDITIONS OF TENDER / CONTRACT

1.0 DEFINITIONS AND GENERAL ASPECTS OF WORK:

- 1.1 APEDA shall mean Arunachal Pradesh Energy Development Agency, represented by its Director or his representative with Head office at Urja Bhawan, T.T. Marg, Itanagar -79111 and shall also include its successors in interest and assignees. The contractor shall mean the person whose tender has been accepted by APEDA and shall include his legal representatives, successors in interest and assignees.
- 1.2 The work shall be completed within **06 months** from the date of signing of Agreement/Award Letter/loI which ever is earlier. However, APEDA may in case of urgency ask the firm to complete the work earlier, with the mutual consent of the contractor. In case the contractor fails to execute the said work within stipulated time, APEDA will be at liberty to get the work executed from the open market without calling any tender and without any notice to the contractor, at the risk and cost of the contractor. Any additional cost incurred by APEDA shall be recovered from the contractor. If the cost of executing the work as aforesaid exceeds the balance due to the contractor, and the contractor fails to make good the additional cost, APEDA may recover it from the contractors' pending claims against any work in APEDA or in any lawful manner.
- 1.3 That on the request of the contractor and also in the interest of the organization the APEDA is authorized to extend the validity of the agreement, subject to the condition that the request of the contractor is received before the expiry of the agreement period, or any extended period granted to the contractor if there is a valid ground.
- 1.4 The contractor will not be allowed to operate in the state through authorized dealers/third party/ power of attorney holder for execution of the orders. It will be the sole responsibility of the contractor to execute orders placed as per time schedule and to ensure quality parameters, specifications and other requirements provided in the tender document and as per agreement.
- 1.5 In the interest of the work and the programme, agreement executed between the tenderer and the APEDA may be extended to a mutually agreed period, if the need so arises.
- 1.6 It shall be sole responsibility of the contractor to get verified the quality & quantity of the supplied material at the site of delivery and also for the work executed.

2.0 LIQUIDATED DAMAGES

- 2.1 If the contractor fails to perform the services within the time periods specified in the contract, the APEDA shall without prejudice to its other remedies under the contract, deduct from the contract price as liquidated damage, a sum equivalent to 1% of the price of the unperformed services for each week of delay until actual performance up to a maximum deduction of 10% of the delayed services. If the contractor fails to supply the systems within the 06 weeks, the work order will be treated as cancelled and the entire security or earnest money deposit will be forfeited and APEDA may consider blacklisting of the contractor.
- 2.2 The contractor shall have to comply with all the rules, regulation, laws and by-laws in force and the instructions if any, of the organization, in whose premises the work has to be done. APEDA shall have no liability in this regard.

3.0 FORCE MAJEURE

- 3.1 Notwithstanding the provisions of clauses contained in this deed; the contractor shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfil his obligation under this deed due to event of force majeure circumstances.
- 3.2 For purpose of this clause, "Force majeure" means an event beyond the control of the contractor and not involving the contractor's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of Govt. either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes.
- 3.3 If a force majeure situation arises, the contractor shall promptly notify the APEDA in writing within a week from the date situation so arises.
- 3.4 The High court of Guwahati, Itanagar Bench shall alone have jurisdictions over any dispute between APEDA and the Contractor.
- 3.5 The contract 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.
- 3.6 APEDA shall have at all reasonable time access to the works being carried out by the contractor under this contract. All the work shall be carried out by the contractor to the satisfaction of APEDA.
- 3.7 The contractor should have Service Centre or Technical Experts in Arunachal/ nearby the state to provide the repairs & maintenance services promptly.
- 3.8 If any question, dispute or difference what so ever shall arise between APEDA and the contractor, in connection with the agreement except as to matters, the decisions for which have been specifically provided, either party may forthwith give to the other notice in writing of existence of such question, dispute or difference and the same shall be settled amicably and in case it is not possible to settle amicably then a sole common arbitrator will be appointed by both the parties together and get the matter settled. The reference shall be governed by the Indian Arbitration Act, and the rules made there under. The award in such arbitration shall be final and binding on both the parties. Work under the agreement shall be continued during the arbitration proceedings unless the APEDA or the arbitrator directs otherwise.
- 3.9 APEDA may at any time by notice in writing to the contractor either stop the work all together or reduce or cut it down. If the work is stopped all together, the contractor will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to 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 contractor. If the work is cut down the contractor will not 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.

4.0 INSPECTION AND TESTS

- 4.1 The following inspection procedures and tests are required by the APEDA in the presence of representative of the contractor with the representative of APEDA of the concerned area , if so desired.
- 4.2 The APEDA or its representative shall have the right to inspect and / or to test the goods to confirm their conformity to the contract. The special conditions of contract and / or the Technical specifications shall specify what inspections and test the APEDA requires.

5.0 INSPECTION AT WORKS

- 5.1 The APEDA or their duly authorized representative shall have at all reasonable times access to the contractor premises or works and shall have the power at all reasonable time to inspect and examine the materials and workmanship of the works during its manufacturing and installation.
- 5.2 The contractor is required to get the entire lot of the ordered material inspected at one time, before the supply of the materials. In case the contractor fails to get the entire lot inspected at one time, the total expenses of the further inspection will be borne by the tenderer/ contractor. APEDA reserves the full rights to waive off inspection of materials.
- 5.3 The inspection by APEDA and issue of dispatch instruction there on shall in no way limit the liabilities and responsibilities of the tenderer/ contractor in respect of the agreed quantity & quality assurance programme forming a part of the contract. Nothing shall in any way release the tenderer/ contractor from any guarantee or other obligations under this contract.

6.0 NOTICE / COMMUNICATION

Notice, statement and other communications sent by APEDA through registered post or telegram or fax or email to the contractor at his specified addresses shall be deemed to have been delivered to the contractor.

7.0 EXTRA WORK

Any work which is not covered under this contract but is essentially required for the completion of job shall be carried out by the contractor to the satisfaction of APEDA for which no extra payment shall be made separately.

8.0 DESIGN AND DRAWINGS

The work shall be carried out by the contractor as per design and drawings approved by APEDA, wherever, necessary, the contractor shall submit relevant designs and drawings for approval in APEDA, well in advance. Work carried out without APEDA's approval shall not be accepted and the APEDA shall have right to get it removed and to recover the cost so incurred from the contractor. Design and drawings mentioned in the Technical Specification should also be complied.

9.0 INSTRUCTION AND ROUTINE MAINTENANCE MANUAL

The contractor shall provide two copies of instruction manual and routine maintenance manual (O&M) with each system supplied or installed, this shall be English. One copy at Hq office and one copy at site shall be supplied. The following minimum details must be provided with manual.

- (a) About the complete photovoltaic system including PV modules, battery and electronics.
- (b) Do's and Don'ts
- (c) Clear instructions on regular maintenance and trouble shooting of the Systems.
- (d) Name & address of the contact person in case of non-functioning of the systems.
- (e) Firm shall provide address post card and log card with the systems for proper record and quick maintenance of installed system during warranty and AMC period.

10.0 PATENT RIGHT AND ROYALTIES

The Contractor shall indemnify the APEDA against all third party claims of Infringement of patent, royalties' trademark or industrial design rights arising from use to the goods or any part thereof.

11.0 PACKING AND FORWARDING

11.1 Contractors, wherever applicable, shall after proper painting, pack and crate all the equipment in such manner so as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till time of installation. Contractor shall be held responsible for all damage due to improper packing.

11.2 The contractor shall inform the APEDA of the date of each shipment from his works, and the expected date of arrival at the site at least 7 days in advance.

12.0 DEMURRAGE, WHARFAGE, ETC

All demurrage, wharf age and other expenses incurred due to delayed clearance of the material or any other reason shall be to the account of the contractor.

13.0 INSURANCE

The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation; natural calamities shall be included in the bid price.

14.0 TRANSPORTATION

The tenderer is required under the contract to deliver the goods to the site. The storage/handling etc shall be sole responsibility of the contractor till the commissioning/ handover of the system to the end user/APEDA as the case may be.

15.0 TERMINATION FOR INSOLVENCY

APEDA may at any time terminate the contract by giving written notice to the contractor without compensation to the contractor, if it becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the APEDA.

16.0 TERMINATION FOR CONVENIENCE

The APEDA, may by written notice sent to the tenderer/ contractor, terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the purchaser's convenience in the interest of APEDA.

17.0 APPLICABLE LAW

The contractor shall be interpreted in accordance with the laws of the purchaser's country i.e. India. The station of APEDA Directorate, Itanagar shall have exclusive jurisdiction in all matters arising under this contract.

18.0 NOTICE

18.1 Any notice given by one party to the other in pursuant to the contract shall be sent in writing or by telegram or telex/ cable and confirmed in writing to the address specified for that purpose.

18.2 A notice shall be effective when delivered or on the notice's effective date, which ever is later.

19.0 TAXES AND DUTIES

The price quoted should include all taxes and duties, custom duty, excise duty, service tax, sales tax, C.S.T., local taxes, Trade Tax/VAT/Enrty Tax of Arunachal pradesh, Income Tax, Surcharge on income tax etc. if any. The tenderer shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable as per Government income tax & service tax norms will be payable by the contractor. If any new tax/duty is levied during the contract period the same will be borne by the firm exclusively. TDS will be deducted from the payment of the contractor as per the prevalent laws and rules of Government of India and Government of A.P. in this regard.

20.0 IDENTIFICATION AND TRACEABILITY

Each PV module used in any solar power project must use a RF identification tag (RFID), which must contain the following information. The RFID can be inside or outside the module laminate, but must be able to withstand harsh environmental conditions.

- (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 cells 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.

21.0 AUTHORIZED TESTING LABORATORIES/ CENTERS

21.1 The PV modules must be tested and approved by one of the/MNRE/IEC/NABL authorized test centers. Test certificates can be from any of the IEC certified/ MNRE /NABL Accredited Testing /Calibration Laboratories.

21.2 Test certificates for the BoS items/ components can be from any of the NABL/IEC/ Accredited Testing-Calibration Laboratories/ MNRE approved test centres.

21.3 Latest test certificates along with I-V Curve should be enclosed with the tender as per the Check List of Annexures.

22.0 ANNUAL MAINTENANCE CONTRACT (AMC)

22.1 On signing of the contract agreement, it will be presumed that the contractor has entered into a comprehensive Annual Maintenance Contract (AMC) with APEDA for 5 years after warranty/guarantee period of 2 years. During the AMC period, the contractor, shall maintain the plant by providing the spare parts of all defective and consumable items. They should have an office at Itanagar or at a nearby place within Assam. The cost of AMC shall be quoted by the contractor separately. Manufacturing defects or any other defects coming under the preview of Warrantee shall be replaced /rectified at free of cost. But, parts not covered under warrantee will be paid. Decision of APEDA in this regard will be final and binding.

23.0 WARRANTY OF EQUIPMENTS

23.1 The mechanical structures, electrical works including power conditioners/inverters/charge controllers/maximum power point tracker units/distribution boards/digital meters/switchgear/ storage batteries, etc. and overall workmanship of the SPV power plants/systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 02(two) years from the date of installation and commissioning.

23.2 PV modules used in solar power plants/ systems must be warranted 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.

23.3 Performance Guarantee of Equipment: In addition to the 2 years warranty as already provided, the tenderer shall guarantee satisfactory performance of the equipment and shall be responsible through AMC for a period of 05(five) years from the date expiry of warrantee. Defects if any shall be removed at his own cost when called upon to do so by the APEDA or by the user during this period.

23.4 The contractor shall rectify defects developed in the system within Warranty period promptly. In case the defects are not rectified within 07 days of the receipt of the complaint by the contractor, APEDA shall have full liberty to restore the system in working condition. The expenditure so incurred by APEDA shall be deducted from the contractor pending claims, security deposit or in other lawful manner. During the warranty, following maintenance will be required to be carried out by the contractor.

Quarterly checking up, keeping and replacement of any component or sub-components of the system for proper operation of the system.

Repairing/ replacement of all defective components and sub-components including battery of the system as per the requirement to ensure proper operation of the system.

In case of any damage or breakage of the component due to negligence or fault of beneficiary or theft etc, the same shall be replaced at users cost.

The safety and security of the system shall be sole responsibility of the user.

24.0 PERFORMANCE GUARANTEE

The successful bidder will have to deposit a Performance Guarantee in the form of BG equivalent to 05% of the bid amount including the EMD amount. The Performance Guarantee may be deposited in the form of Bank Guarantee/ DCR /Fixed Deposit pledged in favour of Director, APEDA from any nationalised bank valid till the completion period of the projects. The Performance Guarantee shall be released after installation & commissioning of the project in all

respect; however, 10% balance payment shall be retained as performance security till completion of the warrantee period.

25.0 PAYMENTS TERMS

The payments shall be made as per the following terms and conditions.

- 25.1 60% of the material/ equipment cost and transportation will be released on receipt of the materials after necessary verification and measurement by site engineers as per technical standard & specifications, terms & conditions specified in the contract and on receipt of duly verified bills along with record entry in Measurement Book by the site engineers.
- 25.2 30% of the material/ equipment cost and transportation cost and 90% of the installation cost of contract value will be released after installation, testing and commissioning of the system along-with the Handing over Certificate, Completion Report and successful commissioning certificate along with the photographs duly countersigned by the designated officer of APEDA and on the satisfaction and taking over by the user.
- 25.3 10% balance of the contract amount shall be retained as performance security and released @ 2% at the end of each year for 5 years on satisfactory performance . The contractor shall raise bill of 2% of the ordered value at the end of each year along with satisfactory performance report duly certified by the concerned officer and user.

OR

It may be released after 1 year of successful operation against Bank Guarantee of equivalent amount valid till completion of Warantee/ Guarantee period of 2 years.

26.0 OTHERS CONDITIONS

- 26.1 I-V curve of the PV module , technical details such as Voc, Isc , Vmp, PR, cell efficiency and P max etc. shall be submitted along with the bid and along with the materials.
- 26.2. The Contractor in consultation with concerned Officer of APEDA will conduct training programme for the user, focusing on main features, operation and maintenance of the systems before commissioning of the project.
- 26.3 After successful commissioning of the system and training, the system will be handed over to the user in the presence of Project Officer of concerned area of APEDA and properly documented.
- 26.4 It shall be the sole responsibility of the contractor to get verified the quality & quantity of the supplied material at the site of delivery.
- 26.5 Firm/Party shall be responsible for proper installation of system with required orientation/ proper sitting of Solar Modules. Firm/Party shall also be responsible for regular top-up of electrolyte/ distilled water, repairs & maintenance of defect, providing spare parts during warrantee and AMC period. The quarterly date may be fixed for the same. Firm shall depute an authorized representative whenever required at the time of inspection etc.
- 26.6 The tender document signed and sealed on each page by the authorised signatory and annexure duly attached in the last of the document making one document should be enclosed.
- 26.7 The work will be done as per current technical specifications of MNRE guidelines for JNNSM and CPWD for Civil works.

27.0 OPENING OF SERVICE OUT AND EMPLOYMENT OF LOCAL YOUTH

The successful bidder will have to open a service outlet at Itanagar and employ local youth(s) having diploma or degree in suitable engineering disciplines to provide technical and material support for proper operation and maintenance of the system installed.

CHAPTER- X **SCOPE OF WORK**

- 1.1 The work shall include site survey, design, drawing, manufacturing, supply, installation, testing & commissioning of 100KWp Grid Connected Solar PV Power Plant at Civil Secretariat, Itanagar, Papum Pare District in Arunachal Pradesh on turnkey basis as per the standard and specifications of MNRE, GoI and as per site conditions including Net Metering arrangement with the existing grid and 5 years AMC (Annual Maintenance Contract).
- 1.2 All works required for proper installation of Solar PV Power Plant including necessary civil work and welding works for mounting structures of solar module shall be done by the contractor. The entire work shall be performed on turnkey basis. All the works related to the proper installation and functioning of the system shall have to be carried out by the contractor in the prices offered by them.
- 1.3 It should be clearly noted that the Solar Power Plant has to be installed on raised structures from the ground in the Parking area of AP Civil Secretariat, Itanagar. The structures should be designed in such a way that they are accommodated in the parking area to form a parking shed for the vehicles and the solar modules are installed on top to from roof for the car shed. The structures should give a good asthetic look to the whole set up.
- 1.4 The civil work will include concreting of parking area and car passages in addition to the foundation work including providing floor tiles.
- 1.5 The contractor should follow the instruction of the Agency/APEDA while designing the whole work. A rough sketch map of the area showing placement of the proposed car shed where modules will be installed is given in the document or it can be had from the Agency separately.
- 1.6 Required wiring if required and wherever required shall have to be done by the contractor. All the wiring shall have to be done in concealed conduits wiring /surface wiring. The cables will be made of copper conductor in all respects.
- 1.7 The plant has been proposed to be a Solar PV Power Plant cum Car Shed/Parking Shed so, bidder should design the plant accordingly.
- 1.8 The interested bidders will have to physically visit the project site at Civil Secretariat, Itanagar and discuss with the APEDA for any clarification and first hand information about the conceptualisation of the project.
- 1.9 The land in the proposed area is not flat so, intending bidder should have a clear idea of the site and then design accordingly. After site visit, the bidders will do the design and drawing of all the components of the project/ plant according to the area and landscape available at site.
- 1.10 The modules should be installed in raised structures made of properly/hot dip galvanised MS iron angles/ channels/ pipes of various assorted sizes. The modules shall be installed in a slope as per the required angle of tilt and latitude of the area to attain maximum efficiency and optimum energy output.
- 1.11 The site for the control room should be decided suitably and designed according to the land / area available and as per the project requirement.
- 1.12 The plant should be designed to facilitate the power to be fed into the existing grid 440V within the Civil Secretariat which belongs to the Department of Power.
- 1.13 The plant should have all the necessary provisions of Net Metering facilities for recording the energy export and import.
- 1.14 All the equipments shall meet the standards and specifications prescribed by IEC//ISI /MNRE/NABL approved test labs. Installation and testing shall also be done by following the set standards and specifications prescribed for the same.

- 1.15** After installation, testing and commissioning also, the successful bidder shall have to operate and maintain the plant for 5 years.
- 1.16** The complete Solar PV Power Plant including indoor and outdoor fittings shall be warranted by the contractor against any manufacturing/ design/ installation defects for a minimum period of 2 years and 25 Years for PV Module from the date of installation.
- 1.17** Required Earthing pits, Lighting Arrestor for whole system of power plant should be provided by the contractor.
- 1.18** The contractor will make all necessary arrangements for satisfactory operation, maintenance and performance of the Power Plant during 2 years warranty periods. After completion of warranty periods, AMC/CMC for another five years will be effective.
- 1.19** Rectification of all the defects developed in the Solar PV Power Plant during warranty periods shall have to be done by the contractor promptly, at the most within 7 days from the date of receipt of compliant.
- 1.20** The AMC/CMC will include rectification /replacement of all the defective and consumable components/items including batteries. During AMC/CMC period, all the arrangements for keeping the Solar PV Power Plant functional shall be the sole responsibility of the contractor. During the Warranty period, the contractor shall ensure that the plant is maintained and operated without any trouble.
- 1.21** After completion of the proposed works, clearances of all temporary works/ materials shall be the sole responsibility of the contractor and this shall be removed immediately after the requirement of such temporary work is completed.
- 1.22** All the non functional parts/ materials/ items replaced during the AMC/CMC period shall be the property of the APEDA.
- 1.23** The contractor will conduct on-site training of the purchaser's/ user's personnel regarding the operation, maintenance and repairing/replacement of electronics and electrical items of the Power Plant.
- 1.24** During warranty periods, AMC/CMC period, the contractor shall have to submit annual performance report from user agency regarding functionality of the system.
- 1.25** The contractor should have enough technical persons and technicians to install and operate the system and should have service centre in Arunachal Pradesh to attend the complaints promptly.
- 1.26** The bidders are required to assess the potential as per the area available in the open space of the parking area and indicate/furnish the same in their bid.
The capacity may be less than or more than 100 KWp. It has to be designed according to the area available.

CHAPTER -XI
TECHNICAL SPECIFICATIONS

(The proposed projects shall be commissioned as per the technical specifications given below. Any shortcomings will lead to cancelation of contract in full or part as decided by the APEDA and the decision of APEDA will be final and binding on the contractor.)

1.0 SOLAR PHOTOVOLTAIC MODULES:

- 1.1** The PV modules used should be made in India.
- 1.2** The PV module should have efficiency not less than 14% and Fill Factor not less than 74%.
- 1.3** The PV modules used must qualify to the latest edition of IEC PV module qualification test for Crystalline Silicon Solar Cell Modules, IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 Part-2- requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS.
- 1.4** For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701.
- 1.5** The total solar PV array capacity should not be less than 100000Wp for 100KWp power plant and should comprise of solar crystalline modules of minimum 250 Wp.
- 1.6** Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.
- 1.7** PV modules must be tested and approved by one of the IEC/NABL/MNRE Accredited authorized test centers, NISE/ETDC/ERTL/UL/TUV Rheinland.
- 1.8** The module frame shall be made of corrosion resistant materials, preferably having anodized aluminium.
- 1.9** The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid.
- 1.10** Other general requirement for the PV modules and subsystems shall be the Following:
- i. The rated output power of any supplied module shall 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 curve of the each PV module, technical details such as V_{oc} , I_{sc} , V_{mp} , PR, cell efficiency and P_{max} etc. shall be supplied along-with the bid and with the consignment .
 - v. Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each module. (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 , FF, PR 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.

1.11 WARRANTY OF PV MODULE

(a) Material Warranty :

- (i) The manufacturer should warrant the solar Modules(s) to be free from the defects and / or failures specified below for a period not less 25 years from the date of sale to the original customer (“Customer”), 2 (two) years for rest of the materials, battery, PCU etc.
- (ii) Materials should be free from defects and/or failures due to manufacturing.
- (iii) Free from 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 bidder will repair or replace the solar module(s), at his own risk and cost.

(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.

2.0 ARRAY STRUCTURE

- a) Hot dip galvanized MS mounting structures should 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 of 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 (-wind speed of 200 km/ hour may be considered). It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard and may submit wind loading calculation sheet to APEDA. 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 IS 4759.
- d) Structural material shall be corrosion resistant and compatible with the materials used in the module frame, its fasteners, nuts and bolts. Aluminium structures also can be used which can withstand the given wind speed. 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 land and need to arrange suitable structures based on the quality of land.

3.0 JUNCTION BOXES(JBS)

- a) The junction boxes ,where ever require 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 Aluminium /cast aluminium 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) 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 for monitoring and disconnection for each of the groups.

4.0 DC DISTRIBUTION BOARD (DCDB)

DCDB shall be provided between PCU and solar array. It should have protection circuits of suitable rating for connection and disconnection of array.

5.0 AC PANEL BOARD

AC Panel Board shall be provided in between PCU and outgoing line. It should have protection circuit of suitable rating for connection and disconnection of outgoing line.

- a) AC Panel Board shall control the AC power from PCU/ inverter, and should have necessary surge arrestors.
- b) All switches and the circuit breakers, connectors should conform to IEC 60947, 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 volts, 50 Hz as required as per the design.
- e) The panels shall be designed for minimum expected ambient temperature of 45 degree Celsius, 80 percent humidity and dusty weather.
- f) Should conform to Indian Electricity Act and rules (till last amendment).
- g) All the 415 AC or 230 volts devices / equipment like insulators, circuit breakers, etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the $\pm 10\%$ variation in supply voltage, $\pm 3\%$ variation in frequency.
- h) Isolation switches should be provided for switching in and switching out for proper operation of the system in synchronisation with the grid.

6.0 PCU / ARRAY SIZE RATIO.

- a) The combined wattage of all inverters should not be less than rated capacity of power plant under STC if more than one inverter is used. The tender should design and suggest / prescribe the number of PCU to be used.

- b) Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.

7.0 SOLAR GRID 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. Inverter output should be compatible with the grid frequency and voltage. It should have in- built anti-islanding features. Typical technical features of the inverter shall be as follows:

• Switching device	:	IGBT based.
• Control	:	Microprocessor / DSP
• Nominal AC output voltage and frequency	:	415V, 3 – Phase, 50 Hz
• Output frequency	:	50 Hz
• Grid Frequency Synchronization range	:	+/- 3 Hz or more
• Ambient temperature considered	:	-20° C to 50° C
• Humidity	:	95 % Non-condensing
• Protection of Enclosure	:	IP-20(Minimum) for indoor.
	:	IP-65(Minimum) for outdoor.
• Grid Frequency Tolerance range	:	+/- 3 or more
• Grid Voltage tolerance	:	- 20% & + 15 %
• No-load losses	:	Less than 1% of rated power
• Inverter efficiency (minimum)	:	> 95%
• THD	:	< 3%
• PF	:	Unity
• Protection	:	<ul style="list-style-type: none"> - Over voltage (automatic shut down) - Under voltage (automatic shut down) - Overload - Short circuit (circuit breaker & electronics protection against sustained fault). - Over Temperature
• Indication	:	<ul style="list-style-type: none"> - Array on - MPPT charger on - Inverter ON - Load on solar/ battery - Grid charger on - Load on Grid - Grid on
• Display parameters	:	<ul style="list-style-type: none"> - Charging current - Charging voltage - Voltage of PV panels - Output voltage - Grid voltage - Inverter loading - Output frequency

9.0 PROTECTIONS

- a) Three phase PCU shall be used for 100 kWp 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) 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.
- e) The charge controller (if any) / MPPT units environmental testing should qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS Std.
- f) 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.

10.0 LIGHTING PROTECTION

- a) The SPV power plants shall be provided with lightning & overvoltage 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 IEC 62305 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.

11.0 SURGE PROTECTION

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

12.0 EARTHLING PROTECTION

- a) 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. Earth Resistance shall be tested in presence of the representative of Department/SECI as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.
- b) 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.

13.0 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: –10oC to +80oC.
- 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 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. 25years.
- ix. Bidder should indicate the size and length of the cable as per system design requirement. All the cables required for the plant should provided by the bidder. Any change in cabling sizes, if desired by the bidder should be done after citing appropriate reasons. All cable schedules/layout drawings approved prior to installation.
- 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.
- 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 %.
- xiii. All cables to be supplied should be as per BIS and should have proper current carrying capacity and should not be heated.
- xiv. All indoor wiring is to be done in a casing capping system. As and when required flexible pipe may also be used.
- xv. One necessary tools kit and spares will have to be provided by the supplier.

14.0 TOOLS & TACKLES AND SPARES

- a) After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the bidder for maintenance purpose.
- b) A list of requisite spares in case of PCU/inverter comprising of a set of control logic cards, IGBT driver cards etc. Junction Boxes, Fuses, MOVs / arrestors, MCCBs etc along with spare set of PV modules be indicated, which shall be supplied along with the equipment. A minimum set of spares shall be maintained in the plant itself for the entire period of warranty and Operation & Maintenance which upon its use shall be replenished. The major components required for maintenance will be maintained in the concerned Division Office and at least 50% of the quantity will be always available compared to the number of plants under each division.

15.0 DANGER BOARDS AND SIGNAGES:

- a) Danger boards should be provided wherever necessary as per IE Act. /IE rules as amended up to date at battery –cum- control room, solar array area and main entry from administrative block. Text of the sign board may be finalized in consultation with APEDA.

16.0 DRAWINGS & MANUALS TO BE FURNISHED BY CONTRACTOR AFTER AWARD OF WORK/ CONTRACT.

The Contractor shall furnish the following drawings after receipt of Award letter / Signing of Agreement.

- a) General arrangement and dimension layout .
- b) Schematic drawing showing the requirement of SV panel, placement of panels with tilt , Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
- c) Structural drawing along with foundation details for the structure.
- d) Layout of solar Power Array and shadow analysis.
- e) Two sets of Manuals on O&M with details should be furnished by the contractor after completion of the work, one at Hq office and other at the site of project.

17.0 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 DISPLAY BOARD

The bidder has to display a board at the project site mentioning the following:

- a) Plant Name, Capacity, Location, , Date of commissioning, Name of Implementing Agency, total Cost of the Projects etc.
- b) The size and type of board and display shall be approved by Engineer-in-charge of the project.

CHAPTER - XII
DETAILS OF PROJECT SITE

The site of the project, Civil Secretariat is in the heart of the capital city of Arunachal Pradesh, Itanagar, which is around 400KM from Guwahati, Assam and is accessible in all weather by car, train and helicopter .There is a daily train service from Guwahat to Naharlogun and vice versa that starts at 10.00PM from both side, Naharlogun is within the Itanagar city and is 13KM from Itanagar.

One can reach Itanagar by flight from Lilabari airport in Assam which is around 63KM from Itanagar, but flight route is from Kolkata – Guwahati - Lilabari. Arunachal Pradesh is a restricted area, so Inner Line Permit (ILP)/ Entry Pass is required to enter in any part of Arunachal. ILP can be obtained from the Resident Commissioners, New Delhi/ Kolkata/ Guwahati etc. APEDA can also help the contractors in the obtaining ILP.

Working season of any project in Arunachal Pradesh is normally between October to April every year, so, contractor needs to plan to complete the work in these months because rain starts from the month of April and may last till September. Itanagar is the Capital town of Arunachal Pradesh so, there is no fooding and lodging problems, hotels and lodges are available on affordable cost.

CHAPTER -XIII
TECHNICAL BID

(This is to be submitted along with Technical and Commercial bid documents, Part -I)

1.	Solar Module:	
	Type of Cell (Mono/Polycrystalline)	:
	Manufacturer of Module/Make (Tata BP Solar/HHV/CEL/Vikram/Waaree/Maharshi Solar/Moserbaer /Equivalent make)	:
	Year of manufacturing	:
	Open Circuit Voltage (Voc)	:
	Short Circuit Current (Isc)	:
	Max.voltage of PV module(Vmax)	:
	Max.Current of PV module(Imax)	:
	Max.Power Out put of array	:
	No. of PV module in one array (in series)	:
	No. of PV arrays (in parallel)	:
	Efficiency of Module	:
	Performance Ratio of Module	:
	Cell efficiency	:
	Total capacity of SPV panels at STC :	:
	Number of Modules	:
	Rating of each module(Min 250Wp)	:
	Test certificate enclosed or not	:
	If yes certified by whom	:

	Period of Warrantee (manufacturers) product	:	
2	Solar Grid Connected Inverter with Auto anti islanding features.		
	Make (ABB/Delta/Fronious/SMA/Sungrow/Equivalent make)	:	
	Quantity (Min 2Nos.)	:	
	Capacity(Min 50 KW)	:	
	Indicators provided	:	
	LED/LCD display message	:	
	DC input voltage range	:	
	Output voltage (AC)	:	
	Frequency	:	
	Rating	:	
	Output wave shape	:	
	Efficiency	:	
	TDH range	:	
	Ambient temperature	:	
	Humidity range	:	
	Short circuit protection	:	
	Enclosure	:	
	Enumerate various protection systems provided	:	
3.	Panel Board : The Panel Board should have the following provisions -		
	Graphic Indication	:	
	Main on	:	
	Inverter on	:	
	Solar/AC main	:	
	Input voltage & frequency in numeric	:	
	Inverter Switch On/ Off Indicator	:	
	Output frequency/output load - in numeric	:	
	Power Generated(KW) indicator	:	
	Energy Generated(KWH) indicator	:	
	Short circuit Indicator	:	
	Over Load Indicator	:	
	Main fuse Blown – Indicator & Alarm	:	
	Fault Indicator	:	
4	Construction of Control Room with RCC framed structure with Size:8mx6m		
5	Cables:	Make	Quantity
	Module interconnections. Size: Sqmm cu cable)	:	
	Array parallel interconnection (Size: Sqmm cu cable)	:	
	Array or JB to PCU: (Size: Sqmm cu cable)	:	
	PCU to LT Panel Board: (Size: Sqmm cu cable)	:	
6	Details of Net Metering equipments and other accessories as required .		

CHAPTER - XIV
FINANCIA BID / PRICE BID

(To be submitted in a separate envelope super-scribed as Financial or Price Bid (Part-II) and put in the covering envelope)

RATES AND AMOUNT TO BE QUOTED BY THE BIDDERS IN THE FOLLOWING FORMATS

Sl. No.	Components of the Project	Quantity & Capacity	Make	Rate (Per unit In Rs.)	Total (In Rs.)
1	Design, Manufacturing and Supply of SPV modules (Mono/Poly crystalline),250Wp and above with aggregate capacity of 100 KWp.				
2	Design, Manufacturing and Supply of Solar Grid Connected Inverter of 2x50 KW with Auto Anti-Islanding feature.	2x50KW			
3	Design, Manufacturing and Supply of mounting structures made of hot dip galvanized iron Channels, angles, pipes etc of assorted size as required		As per MNRE/BIS standard		
4	Design, Manufacturing and Supply of earthing equipments (Chemical earthing), GI strip and accessories as required.	As per the requirement of plant	As per MNRE/ IEC/ISO standard		
5	Design, Manufacturing and Supply of connecting cables (copper) of assorted sizes, junction box and connectors etc as required.	1Lot (XLPE/ PVC insulated)	As per IEC/ISO standard		
6	Design, Manufacturing and Supply of lighting arrestors.	1 sets	As per MNRE/ IEC/ISO standard		
7	Design, manufacturing, supply of Net Meter, LT Panel and other required accessories.	1 sets	As per MNRE/ IEC/ISO standard		
8	Design and Construction of Control Room with RCC frame structures.				
9	Providing CC flooring with Floor tiles above CC Flooring of 50 mm Thickness for Parking Area.				
10	Transportation of Materials from Ex-works upto the site.	1 Lot	-----		

11	Installation, testing and commissioning of above items/equipments i/c all the required civil works and materials.	1 lot	-----		
12	Annual Maintenance Contract for 5 Years after expiry of warranty periods	5years			
13	Differential cost for differential capacity above 100 KWp				
				Grand Total:	

(Rupees)

1. Certified that rate quoted above is as per the requirement, specifications, terms & condition mentioned in the tender.
2. The rates are inclusive of all taxes & duties, VAT/Entry Tax of Arunachal Pradesh, transportation up to site, insurance etc. what so ever.

Signature of Tenderer / Bidder:
Name, Designation / Post held:
Seal:

Note: The capacity of the Power Plant is to be designed and decided as per the area available in the parking space. It may be more than 100 KWp. The bidder are required to assess the capacity and indicate the same with the differential cost involved.

Annexure-I
FORMAT FOR COVERING LETTER
(To be submitted in the official letter head of the company)

FROM:-
(Full name and address of the Tenderer)

M/S.....
.....
.....
.....

To,

The Director
Arunachal Pradesh Energy Development Agency
Urja Bhawan, T.T. Marg
Itanagar-791111

Subject: - Offer in response to e-NIT No: APEDA/
Dated..... for site survey, designing, drawing, manufacturing, supply, installation,
testing & commissioning of 100KWp Grid Connected Solar PV Plant at
Civil Secretariat, Itanagar, Arunachal Pradesh including 5 years Annual Maintenance
Contract(AMC)

Sir,

We hereby submit our offer in full compliance with the terms & conditions of the above mentioned tender. The tender document, duly signed on each page is submitted as a proof of our acceptance of all specifications as well as terms & conditions specified in the tender document.

We confirm that, we are registered manufacturer/channel partner of the MNRE and have the capability both technically and financially to design, manufacture, supply, install and commission the grid connected solar power plant mentioned in the Tender Document within the stipulated time frame .

The tender is submitted in a sealed envelope containing both the Technical Bid and Commercial Bid in two separate sealed envelopes marked Part-I & Part-II.

(Signature of Bidder)
With Seal

Annexure-II
DETAILS OF EARNEST MONEY

(To be submitted in the official letter head of the company)

Sl. No.	Particulars	Details
1.	Demand Draft No. & Date	
2	Amount of Demand Draft (in Rs.)	
2.	Issuing Bank	
3	Validity of the Demand Draft	
4.	Demand Draft issued in favour of whom?	

Signature & Seal of the bidder

Annexure-III
DETAILS OF WORK EXPERIENCE/ WORK EXECUTED IN LAST 5 YEARS .

Sl. No.	Name of Agency/ Organization who awarded the work.	Purchase Order/Award letter No. & Date	Capacity & Quantity of SPV Power Plant	Ordered value (Amount in Rs.)	Date of Commissioning.

(Signature of Authorized Signatory)

Name:

Designation:

Company Seal:

Note:

1. Attach photocopies of Award letter/Purchase Order/LOI etc.
2. Attach photocopies of certificates of satisfactory performance of system.

Annexure-IV
WARRANTEE CARD

(To be submitted in the official letter head of the company)

1	Name & Address of the Manufacturer/ Supplier of the system	
2	Name & Address of the Purchasing Agency	
3	Date of Supply of the System	
4	Details of PV Module(s) Supplied in the System	
5	a) Name of the Manufacturer	
	b) Make	
	c) Model	
	d) Serial No.	
	e) Wattage of the PV Module(s) under STC	
	f) Guarantee Valid Up To	
6	Details of Inverter	
	a) Name of the Manufacturer	
	b) Make	
	c) Model	
	d) Batch/ Serial No(s).	
	e) Month & Year of Manufacture	
	f) Capacity & Efficiency	
(g) Guarantee Valid Up To		
7	Designation & Address of the Person to be Contacted for Claiming Warrantee Obligations	

(Signature of Authorized Signatory)

Name:

Designation:

Company Seal.

Annexure-V

FORMAT FOR MONTHLY O&M AND AMC / CMC/WARRANTY REPORT

[On the letterhead of Bidding Company]

To,

The Director,
Arunachal Pradesh Energy Development Agency
Urja Bhawan, TT Marg
Itanagar

Sub: Site survey, design, drawing, manufacturing, supply, installation and commissioning of 100KWp Grid Connected Solar PV Plant at Civil Secretariat, Itanagar, Arunachal Pradesh including 5 years Annual Maintenance Contract(AMC).

Dear Sir,

It is to inform you that the above mentioned solar power plant has been visited and carried out the maintenance works under AMC/CMC as mentioned below.

Date of Installation of plant

Sl. No	Place of Installation.	System Details		Date of Site Visit	Details of AMC / CMC/ Warranty activities undertaken by Technician	Name and Signature of Concerned field Officer of APEDA .	Name and Signature of Controlling Officer of APEDA
		Module No.					
		PCU/ Inverter No.					
		Unit Generated					

(Signature of Authorized Signatory)

Name:

Designation:

Company Seal:

Annexure -VI
FORMAT OF POWER OF ATTORNEY FOR SIGNING OF BID

POWER OF ATTORNEY / AUTHORIZATION LETTER

(To be on non-judicial stamp paper of Rs.500/- as per Stamp Act relevant to place of execution.)

Know all men by these presents, we.....(name and address of the registered office) do hereby constitute, appoint and authorize Mr. / Ms.....(name and residential address) who is presently employed with us and holding the position of..... as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our bid for **the tender notified by Arunachal Pradesh Energy Development Agency (APEDA), Itanagar** including signing and submission of all documents and providing information / Bids to the Arunachal Pradesh Energy Development Agency, representing us in all matters before [Insert Name], and generally dealing with Arunachal Pradesh Energy Development Agency in all matters in connection with our bid for the said Project. We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

For

_____Signature

Accepted by

_____ (Signature)

(Name, Title and Address of the Attorney)

Note: The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants (s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.

Annexure-VII
FORMAT FOR SUBMISSION OF ANNUAL TURNOVER

1. NAME OF THE FIRM/ COMPANY:
2. ADDRESS :
3. CONTACT NO:.....

Sl.No.	Financial Year	Turn over
1	2013 -14	
2	2014-15	
3	2015-16	

Signature of Charter Accountant with name & seal.

Date:

ANNEXURE-VIII
FORMAT OF HANDING OVER CERTIFICATE

FOR SOLAR POWER PLANT (AFTER COMMISSIONING)

(To be submitted in triplicate in the official letter head of the company/contractor)

Certified that **SOLAR POWER PLANT** of capacity **KWp** has been installed, tested and commissioned successfully at (location details / full address of site) and has been handed over on (Date) to (APEDA/Users) (Name authority to whom handed over) with the following assets.

Sl. No.	Name of Equipment /System	Details	Remarks
1	<u>Solar PV Modules</u>		
	i) Make		
	ii) Module No.		
	iii) Wattage of each module		
	iv) Year of manufacture		
2	<u>String Combiner Box</u>		
	i) Make and Model No.:		
	ii) Nos. of SCBs		
	iii) Rating		
	iv) Solar Power Generator /PCU		
	v) Make		
	vi) Sl. No.		
	vii) Quantity:		
	viii) Capacity:		
3	<u>Mounting Structure, Accessories, Cables</u>		
4	<u>All Types of protections.</u>		

(A) Installation Report:

1. Verified that civil work carried out as per PWD norms: Yes/No
2. Verified that all solar modules are installed in shadow free area and correctly oriented from horizontal: Yes/No
3. Verified that the power conditioning unit has been checked at full load: Yes/No
4. Verified that all cable are crimped, terminated and routed properly: Yes/No
5. Verified that battery are laid out as per drawing

and have not received damage during transportation: Yes/No

6. It has been verified that Solar Power Generator/ inverter are installed Properly and cable termination in the enclosure are tight and secured and have not received any damage during transportation: Yes/No

7. It has been verified that earthing kit & lightning arresters have been installed and connected properly: Yes/No

8. It has been verified that training for operation & minimum maintenance of the systems has been provided to end user:
Yes/No

9. It has been verified that user manual has been provided to end user: Yes/No

(B) Commissioning Report:

Sl.No.	Date	Time	Array Voltage	String Combiner Box Status	Solar Solar Power Generator / Inverter Status	Whether the system was working in grid interactive mode or not. (Yes/No)

(C) M/s has installed, commissioned and handed over the solar power generating system. The usage and the minimum maintenance for the systems have been explained to end user/authorities and APEDA Officials at site. During commissioning, the above system was tested and found to be working satisfactorily for 50 hours.

(D) User's Remarks, if any :

.....
.....
.....

<u>Handed Over by:</u> For M/s. _____ (Authorized Signatory) Name: Seal :	<u>Taken Over by User:</u> (Signature) Name: Designation: Agency/Organisation:
<u>Project Officer:</u> (Signature) Name: Designation: Agency/Organisation:	<u>Deputy Director:</u> (Signature) Name: Designation: Agency/Organisation:

Copy to:

1. Copy to User.

2. Copy to Director, APEDA, Itanagar
3. Copy to Contractor

Annexure- IX
FORMAT FOR COMPLETION REPORT OF SOLAR PV POWER PLANT

Sl. No.	Component	Observation
1	Name of the Project:	
2	Category :- Nodal Agency (Name and Complete Address)	
	Site/ Location with Complete Address	
	Longitude/ Latitude	
	Shadow Free Area	
3	Capacity of system installed (KWp)	
4	Specification of the Modules	
	Make of Modules	
	Wattage	
	Module Efficiency (Enclose I-V curve of any of the module used in the system)	
	Nos.	
	No of series & Parallel combinations	
	Tilt Angle of Modules	
4.1	IEC certificate Date of issue Agency Validity Enclose a IEC certificate	
4.2	Whether imported or indigenous	
4.3	Whether RFID tag is pasted or not?	
4.4	If so, tag is inside or outside. If not, the reason?	
4.5	Type of RFID	
5	PCU	
	Make & rating, Type of Charge controller/ MPPT	
	Make & Capacity of inverter	
	Out : Single Phase/3 Phase	
	Whether hybrid or stand alone	
	Whether indigenous or imported	
	Enclose test certificate as per MNRE requirement	
	Input Voltage to Inverter	
6	Structures	
	Tracking or non tracking	
	Indigenous or imported	
7	Cables Make and size	
	Enclose Certificate: Rating:	
	Voltage of cable	
8	Distribution Box	

	Name	
	Make	
	Certificate	
9	Earthing and protections	
	Lightening Arrester (Type)	
	Earthing (Type)	
10	Date of Commissioning	
11	Generation data since Installation.	
12	Monitoring Mechanism for the installed system	
	Technical Person Trained to maintain system Name with Mobile no.	

Annexure -X
FORMAT FOR PERFORMANCE BANK GUARANTEE
(FOR PERFORMANCE SECURITY)

(To be stamped in accordance with Stamp Act if any, of the Country of the Issuing Bank)

Bank Guarantee No. :..... Date.....

To

Arunachal Pradesh Energy Development Agency
Urja Bhawan, TT M
Itanagar, Pin code 791111
Arunachal Pradesh

Dear Sirs,

In consideration of the [Arunachal Pradesh Energy Development Agency].....herein after referred to as the 'Purchaser' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) having awarded to M/s[Supplier's Name]with its Registered/Head Office at(hereinafter referred to as the 'Supplier', which expression shall unless repugnant to the context or meaning thereof, include its successors administrators, executors and assigns), a Contract by issue of Purchaser's Notification of Award No.dated.....and the same having been unequivocally accepted by the Supplier, resulting into a Contract bearing No.....dated.....valued atforand the Supplier having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to (Rupees) (*).....to the Purchaser.

We.....[Name &Address of the Bank].....having its Head Office at.....(hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Purchaser, on demand any and all monies payable by the Supplier to the extent of(*).....as aforesaid at any time

upto.....(@).....[days/month/year] without any demur, reservation, contest, recourse or protest and/or without any reference to the Supplier. Any such demand made by the Purchaser on the Bank shall be conclusive and binding notwithstanding any difference between the Purchaser and the Supplier or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this Guarantee during its currency without previous consent of the Purchaser and further agrees that the Guarantee herein contained shall be enforceable as per the provisions of the Bid document including all amendments thereto.

The Purchaser shall have the fullest liberty, without affecting in any way the liability of the Bank under this Guarantee, from time to time to extend the time for performance of the Contract by the Supplier. The Purchaser shall have the fullest liberty, without affecting this Guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Supplier, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Purchaser and the Supplier or any other course or remedy or security available to the Purchaser. The Bank shall not be released of its obligations under these presents by any exercise by the Purchaser of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Purchaser or any other indulgence shown by the Purchaser or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Bank.

The Bank also agrees that the Purchaser at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Supplier and notwithstanding any security or other guarantee that the Purchaser may have in relation to the suppliers liabilities.

Notwithstanding anything contained hereinabove our liability under this Guarantee is restricted to..... (*).....and it shall remain in force upto and including.....(@).....and shall be extended from time to time for such period, by M/s..... [Supplier's Name].....on whose behalf this Guarantee has been given.

Dated this.....day of 20.....at.....

Witness:

(Signature).....

(Name).....

(Signature).....

(Name).....

..... (Designation with Bank Stamp).....
(Official Address)

Attorney as per Power of Attorney

No.....

Dated.....

Notes:

1. The stamp papers of appropriate value shall be purchased in the name of guarantee issuing Bank or the party on whose behalf for BG is being issued. The Bank Guarantee shall be issued on a stamp paper of value as applicable in the State of India from where Bank Guarantee is issued or the State of India from where BG shall be operated, whichever is higher.

2. (*) The amount shall be as specified in the Bid documents.

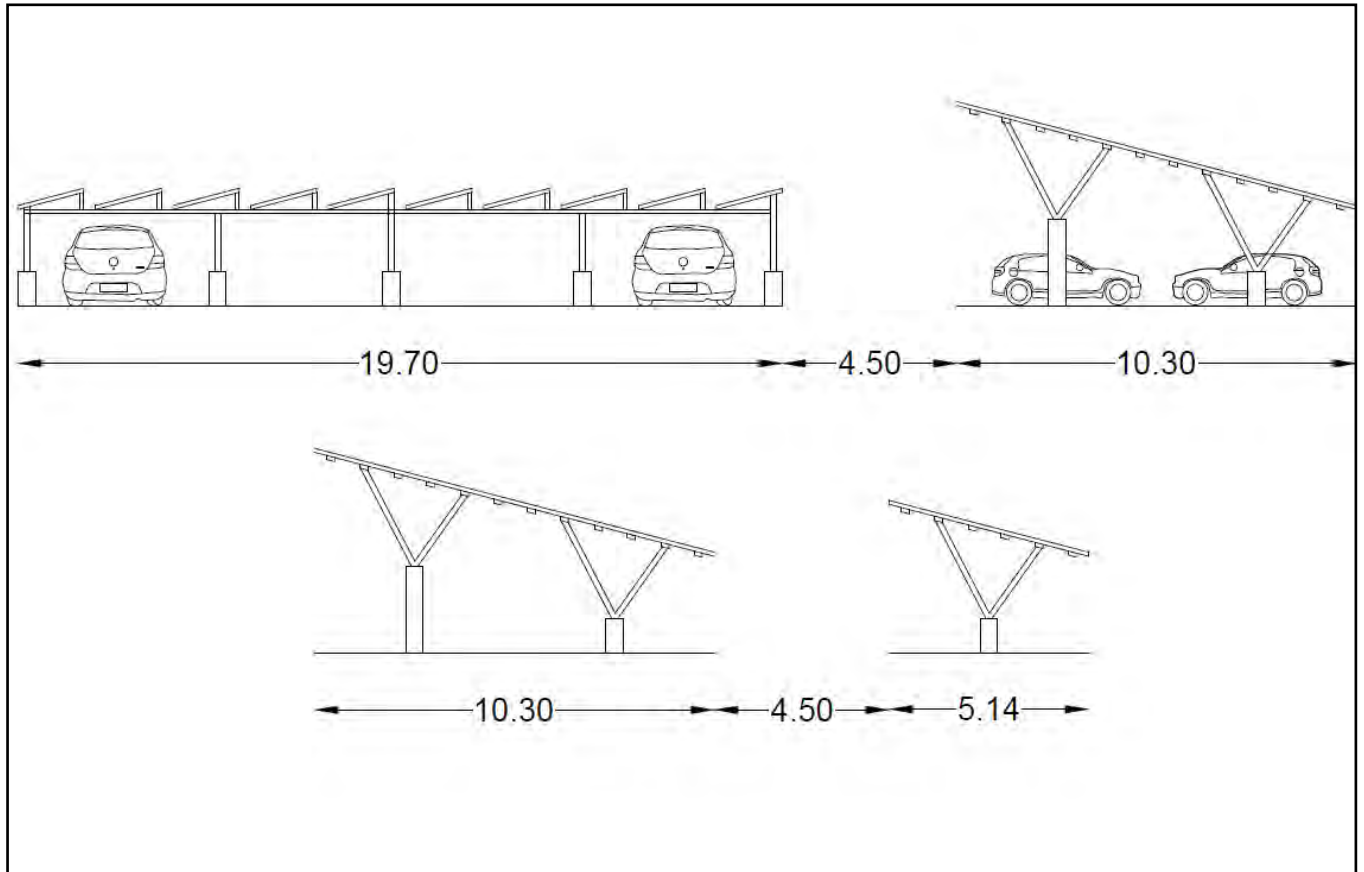
Complete mailing address of the Head Office of the Bank to be given.

(@)The Bank Guarantee shall be from a Bank as per provisions of SCC Scheduled List of Banks of the Bid Documents including all Amendments thereto.

ANNEXURE-XI
SUGGESTIONS FROM BIDDER

Sl. No.	Subject Matter / Topic	Reference to Tender Document	What is said/ specified in Tender Document	What should be or what is suggested.

ANNEXURE-XII (A)
INDICATIVE LAYOUT PLAN OF THE PROJECT



ANNEXURE-XII (B)
INDICATIVE LAYOUT PLAN OF THE PROJECT

