



**RFP FOR “Design,  
Engineering, Supply,  
Installation, Testing,  
Commissioning, Operation  
and Maintenance of Grid  
connected  
Rooftop Solar Photovoltaic Power  
Plants on Buildings/Spaces at  
IAHE, A-5, Sector-62, Noida (UP)  
under Power Purchase  
Agreement (PPA)”**



## Table of Contents

|   |    |
|---|----|
| NOTICE INVITING TENDER (NIT) .....  | 5  |
| Disclaimer .....  | 8  |
| List of Abbreviations and Definitions .....                               | 10 |
| 1. Instruction to Bidders .....   | 15 |
| 1.1 General Information and Guidelines .....                              | 15 |
| 1.1.1 Purpose .....   | 15 |
| 1.1.2 Consortium .....  | 15 |
| 1.1.3 Sub-Contracting .....   | 17 |
| 1.1.4 Completeness of Bid .....   | 17 |
| 1.1.5 Proposal Preparation Costs .....                                    | 18 |
| 1.1.6 Pre-bid Meeting and Queries .....                                   | 18 |
| 1.1.7 Amendment of RFP Document .....                                     | 19 |
| 1.1.8 Supplementary Information to the RFP .....                          | 19 |
| 1.1.9 DHARAMSHALA SMART CITY LIMITED's Right to Terminate the Process ... | 19 |
| 1.1.10 Site Visit and Verification of Information .....                   | 19 |
| 1.2 Key Requirements of the Bid .....                                     | 20 |
| 1.2.1 RFP Document/Tender Fee .....                                       | 20 |
| 1.2.2 Earnest Money Deposit (EMD) .....                                   | 20 |
| 1.3 Instruction to Bidders .....  | 22 |
| 1.3.1 Bid Submission Format .....   | 22 |
| 1.3.2 Bid Submission Instructions .....                                   | 22 |
| 1.3.3 Late Bid and Bid Validity Period .....                              | 24 |
| 1.3.4 Modification and Withdrawal of Bids .....                           | 24 |
| 1.3.5 Non-conforming Bids .....   | 24 |
| 1.3.6 Language of Bids .....  | 24 |
| 1.3.7 Authentication of Bid .....   | 24 |
| 1.3.8 Acknowledgement of Understanding of Terms .....                     | 25 |
| 1.4 Evaluation Process .....  | 25 |
| 1.4.1 Bid Opening .....   | 26 |
| 1.4.2 Evaluation of Pre-Qualification Proposals .....                     | 27 |
| 1.4.3 Evaluation of Technical Proposal .....                              | 27 |
| 1.4.4 Financial Proposal Evaluation .....                                 | 28 |
| 1.4.5 Pre-Qualification Criteria .....                                    | 29 |
| 1.4.6 Technical Evaluation Criteria .....                                 | 30 |
| 1.5 Award of Contract .....   | 30 |



|       |  |    |
|-------|--|----|
| 1.5.1 | Award Criteria .....   | 30 |
| 1.5.2 | Letter of Acceptance (LoA) .....   | 31 |
| 1.5.3 | Signing of Contract .....  | 31 |
| 1.5.4 | Failure to Agree With the Terms & Conditions of the RFP / Contract .....                     | 31 |
| 1.5.5 | DHARAMSHALA SMART CITY LIMITED's Right to accept any Bid and to Reject any or All Bids ..... | 31 |
| 1.6   | Performance Bank Guarantee .....   | 31 |
| 1.7   | Right to Vary Quantity .....   | 32 |
| 1.8   | Warranty & Maintenance .....   | 33 |
| 1.9   | Insurance .....  | 34 |
| 2.    | Scope of Work and Technical Specification. ....  | 36 |
| 2.1   | Scope of work ("Service") .....  | 36 |
| 2.2   | List of Government Buildings in Dharamshala identified for Solar Power plant .....           | 38 |
| 2.3   | Technical Specification .....  | 39 |
| 2.3.1 | The Specifications for the equipment listed above will be as follows: .....                  | 39 |
| 3.    | General Conditions of Contract (GCC) .....   | 65 |
| 3.1.  | Governing Law .....  | 65 |
| 3.2.  | Project Implementation Schedule, Deliverables and Payment Terms .....                        | 65 |
| 3.2.1 | Deliverables & Payment Schedule .....  | 65 |
| 3.2.2 | Payment Terms .....  | 65 |
| 3.3.  | Confidential Information .....   | 66 |
| 3.4.  | Change in Laws and Regulations .....   | 66 |
| 3.5.  | Force Majeure .....  | 67 |
| 3.6.  | Settlement of Disputes .....   | 67 |
| 3.7.  | Time of Completion .....   | 68 |
| 3.8.  | Termination .....  | 69 |
| 3.9.  | Payment upon Termination .....   | 71 |
| 3.10. | Liquidated Damages .....   | 71 |
| 3.11. | Other Conditions .....   | 71 |
| 3.13. | Risk Purchase .....  | 72 |
|       | Annexure 1- Guidelines for Pre-Qualification Proposal .....                                  | 73 |
|       | Annexure 1.1 - Check-list for the Pre-Qualification Proposal .....                           | 73 |
|       | Annexure 1.2 - Pre-Qualification Cover Letter .....  | 74 |
|       | Annexure 1.3 - Format to share Particulars of the Bidder .....                               | 76 |
|       | Annexure 1.4 - Consortium Agreement .....  | 77 |

---



|  |     |
|--|-----|
| Annexure 2. – Guidelines for Technical Proposal.....   | 79  |
| Annexure 2.1 - Check-list for the documents to be included in the Technical Proposal .....   | 79  |
| Annexure 2.2. - Technical Bid Cover Letter .....   | 80  |
| Annexure 2.3. - Format to Project Citation .....   | 82  |
| Annexure 2.4. - Format for OEM Authorization .....   | 83  |
| Annexure 3-Guidelines For Financial Proposal .....   | 84  |
| Anexure 3.1 - Financial Proposal Cover Letter .....  | 84  |
| Annexure 3.2 - Financial Proposal Format & Instructions .....  | 87  |
| Annexure 4- Format for Declaration by the bidder for not being Blacklisted / Debarred .....  | 89  |
| Annexure 5 - Format of sending pre-bid queries.....  | 90  |
| Annexure 6- Power of Attorney .....  | 91  |
| Appendix 7 – Format for Bank Guarantee for Earnest Money Deposit .....   | 94  |
| Annexure 8 – Format for Performance Bank Guarantee .....   | 96  |
| Annexure 9 – List of buildings Proposed for “Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Government Buildings/Spaces at Dharamshala under PPA model” ..... | 100 |
| Contract Forms .....   | 101 |
| 1.10. Letter of Acceptance .....   | 102 |
| 1.11. Contract Agreement.....  | 103 |



## NOTICE INVITING TENDER (NIT)

REF No. **IAHE/04/Green Initiatives/2018**

**Date- 13.08.2018**

IAHE (hereafter referred to as “ACADEMY”) invites bids from the eligible bidders for **“Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at IAHE, A-5, Sector-62, Noida (UP) under PPA”**

1. Government of India has launched Jawaharlal Nehru National Solar Mission (JNNSM) which now has a target of 100,000 MW of grid solar power by 2022, out of which grid connected rooftop Solar PV systems is considered as very potent area and has a target of 40,000 MW. To achieve energy security and for having good optics, it is envisaged to develop solar rooftop projects on large scale by utilizing vacant roofs of buildings and adjoining lands of the campus etc.
2. MNRE (Ministry of New and Renewable Energy, Government of India) desires to implement grid connected rooftop solar PV projects on the roofs of Government buildings/offices as well as ground mounted Solar PV systems as a part of its Renewable Energy Initiatives.
3. The IAHE is implementing Solar Power Project under Green Initiative Mission.

Sealed single state two envelope (Technical & Financial bids) unconditional Tenders in **hard duplicate copy** are invited from reputed, experienced and financially sound Firms/Companies for “Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at IAHE, A-5, Sector-62, Noida (UP) under PPA” on turnkey basis upto 12:00 noon on 20.09.2018 (Thursday) as detailed below:

|   |   |
|---|---|
| Date & Time of release/downloading of tender document | 16.08.2018 from 15:00 hrs   |
| Last date & time of downloading of tender document    | 18.09.2018 upto 15:00 hrs   |
| Last Date & time of submission of Bid                 | 20.09.2018 upto 12:00 hrs   |
| Pre Bid meeting                                       | 07.09.2018 at 15:00 hrs at IAHE Campus, Noida,<br>Email: <a href="mailto:director.iahe@gmail.com">director.iahe@gmail.com</a> |
| Date & Time for opening of Technical Proposal         | 25.09.2018 at 15:00 hrs   |
| Date & Time for opening of Financial Proposal         | 05.10.2018 at 15:00 hrs   |
| Performance Bank Guarantee (Security Deposit)         | 10% of Contract amount (to be furnished before signing of the contract) by the successful bidder                              |
| Time of Completion of work                            | Two months from date of signing of the Agreement  |
| Operation & Maintenance                               | 5 years after commissioning of the project  |



2. The interested bidder may download the “Tender Document” available on free of cost at the website: [www.iahe.org.in](http://www.iahe.org.in)

3. **Submission of Bid**

The first cover shall contain the technical bid along with proof of valid PAN, GST, undertaking of self-declaration in confirmation of never ever been blacklisted and or were no debarring action against the firm for any default whatsoever and EMD (Earnest Money Deposit) amounting to Rs70,000/- in the form of Demand Draft/Bankers Cheque of a scheduled bank drawn in favour of “**Indian Academy of Highway Engineers**” payable at “**Noida**”.

The second cover shall contain the Financial Quote/ tender in the Price/Financial Bid.

Both first & second covers containing technical & financial bid respectively shall be enclosed in a third sealed cover subscribing “**Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at IAHE, A-5, Sector-62, Noida (UP) under PPA**” must be submitted (by registered post with AD or Dropped at Reception desk) addressed to:

**Addl. DG & Director,  
Indian Academy of Highway Engineers (IAHE) ,  
Plot no.-A-5, Institutional Area, Sector 62, Noida-201301 (U.P) on & before 29.08.2018  
upto 12:00 hrs.**

4. Work completion period is Forty Five days from the date of issue of LOA/Work order.

5. IAHE reserves the right not to proceed with the Project, to alter the timeline reflected in this document, or to change the process or procedure to be applied. It also reserves the right to decline to discuss the Project further with any party submitting a proposal. No reimbursement or cost of any type will be paid to persons, entities, or consortiums submitting a proposal by under or pursuant under this RFP.

(SS Nahar)

Addl. DG (Roads) & Director (IAHE)



*Indian Academy of Highway Engineers*  
A-5, Institutional Area, Sector-62, Noida (UP) – 201 301 (India)  
Website: [www.iahe.org.in](http://www.iahe.org.in)



*Indian Academy of Highway Engineers*  
A-5, Institutional Area, Sector-62, Noida (UP) – 201 301 (India)  
Website: [www.iahe.org.in](http://www.iahe.org.in)





## List of Abbreviations and Definitions

### List of Abbreviations

|              |   |
|--------------|---|
| <b>ABD</b>   | Area Based Development                    |
| <b>AMC</b>   | Annual Maintenance Contract               |
| <b>BCA</b>   | Bachelors in Computer Application         |
| <b>BEC</b>   | Bid Evaluation Committee                  |
| <b>CAMC</b>  | Comprehensive Annual Maintenance Contract |
| <b>CBSE</b>  | Central Board of Secondary Education      |
| <b>CCTV</b>  | Closed Circuit Television                 |
| <b>CEO</b>   | Chief Executive Officer                   |
| <b>DB</b>    | Distribution Board                        |
| <b>DCR</b>   | Domestic Content Requirement              |
| <b>DLP</b>   | Digital Light Processing                  |
| <b>DMC</b>   | Dharamshala Municipal Corporation         |
| <b>IAHE</b>  | Dharamshala Smart City Limited            |
| <b>DVD</b>   | Digital Video Disc                        |
| <b>DVR</b>   | Digital Video Recorder                    |
| <b>EMD</b>   | Earnest Money Deposit                     |
| <b>FAQs</b>  | Frequently Asked Questions                |
| <b>FF</b>    | Fill Factor                               |
| <b>Fm</b>    | Financial Proposal                        |
| <b>Fw</b>    | Financial Score Weightage                 |
| <b>GCC</b>   | General Conditions of Contract            |
| <b>HD</b>    | High Definition                           |
| <b>HDMI</b>  | High-Definition Multimedia Interface      |
| <b>HP</b>    | Himachal Pradesh                          |
| <b>IEC</b>   | International Electrochemical Commission  |
| <b>INR</b>   | Indian Rupees                             |
| <b>IP</b>    | Internet Protocol                         |
| <b>IR</b>    | Infra Red                                 |
| <b>JNNSM</b> | Jawaharlal Nehru National Solar Mission   |
| <b>KVA</b>   | kilo-volt-ampere                          |
| <b>KWP</b>   | Killo Watt peak                           |
| <b>LED</b>   | Light Emitting Diode                      |
| <b>LoA</b>   | Letter of Acceptance                      |
| <b>MBPS</b>  | Megabytes per Second                      |
| <b>MCA</b>   | Master of Computer Applications           |
| <b>MCB</b>   | Miniature Circuit Breaker                 |
| <b>MD</b>    | Managing Director                         |
| <b>MDF</b>   | Medium-density Fibreboard                 |
| <b>MNRE</b>  | Ministry of New and Renewable Energy      |



---

---

|                |   |
|----------------|---|
| <b>MPPT</b>    | Maximum Power Point Tracker                           |
| <b>NCERT</b>   | National Council of Educational Research and Training |
| <b>NEFT</b>    | National Electronic Fund Transfer                     |
| <b>NIT</b>     | Notice Inviting Tender                                |
| <b>O&amp;M</b> | Operation and Maintenance                             |
| <b>OEM</b>     | Original Equipment Manufacturer                       |
| <b>PBG</b>     | Performance Bank Guarantee                            |
| <b>PCP</b>     | Pan-City Proposals                                    |
| <b>PCU</b>     | Power Conditioning Unit                               |
| <b>PMPO</b>    | Peak Music Power Output                               |
| <b>POC</b>     | Proof of Concept                                      |
| <b>PVC</b>     | Poly Vinyl Chloride                                   |
| <b>RAM</b>     | Random-access memory                                  |
| <b>RFP</b>     | Request for proposal                                  |
| <b>RTGS</b>    | Real-Time Gross Settlement                            |
| <b>SCP</b>     | Smart City Proposal                                   |
| <b>Sf</b>      | Financial Score                                       |
| <b>SMPS</b>    | Switched-Mode Power Supply                            |
| <b>SPOC</b>    | Single Point of Contact                               |
| <b>SPV</b>     | Solar Photovoltaic                                    |
| <b>St</b>      | Technical Score                                       |
| <b>TB</b>      | Terabyte  |
| <b>TCB</b>     | Total Cost of Bid                                     |
| <b>Tw</b>      | Technical Score Weightage                             |
| <b>UPS</b>     | Uninterruptible Power Supply                          |
| <b>USB</b>     | Universal Serial Bus                                  |
| <b>VDSL</b>    | Very-high-bit-rate digital subscriber line            |
| <b>VGA</b>     | Video Graphics Array                                  |
| <b>VWB</b>     | Visual White Board                                    |



---

## Definitions:

In this “Bid / RFP Document” the following words and expression will have the meaning as herein defined where the context so admits

1. **“1 MWp”** for the purpose of conversion in **kWp** shall be considered as 1000 kWp.
  2. **“Affiliate”** shall mean a company that either directly or indirectly
    - a. controls or
    - b. is controlled by or
    - c. is under common control with
    - d. A Bidding Company and “control” means ownership by one company of at least twenty six percent (26%) of the voting rights of the other company.
  3. **“ABD”** Shall mean Area Based Development in the Dharamshala Smart city proposals.
  4. **“Benchmark cost”** shall mean per Wp cost defined by MNRE for solar power plants without battery. For the purpose of this RFP, the bench mark cost as given in the enclosures with this RFP.
  5. **“B.I.S”** shall mean specifications of Bureau of Indian Standards (BIS);
  6. **“Bid / Tender”** shall mean the Techno Commercial and Price Bid submitted by the Bidder along with all documents / credentials / attachments / annexure etc., in response to this RFP, in accordance with the terms and conditions hereof.
  7. **“Bidder / Bidding Company”** shall mean Bidding Company submitting the Bid. Any reference to the Bidder includes Bidding Company / including its successors, executors and permitted assigns as the context may require;
  8. **“Bid Deadline”** shall mean the last date and time for submission of Bid in response to this RFP as specified in Bid information Sheet;
  9. **“Bid Capacity”** shall means capacity offered by the bidder in his Bid under invitation.
  10. **“BoQ”** Bill of Quantity
  11. **“CEA”** shall mean Central Electricity ACADEMY.
  12. **“Chartered Accountant”** shall mean a person practicing in India or a firm whereof all the partners practicing in India as a Chartered Accountant(s) within the meaning of the Chartered Accountants Act, 1949;
  13. **“Capacity Utilization Factor”** (CUF) shall mean the ratio of actual energy generated by Solar Photovoltaic project over the year to the equivalent energy output at its rated
-



capacity over the yearly period. (CUF = **actual annual energy generated from the plant in kWh / (installed plant capacity in kWp \* 365 \* 24)**).

14. **“Competent Authority”** shall mean Managing Director cum CEO of DAHRAMSHALA SMART CITY LIMITED himself and / or a person or group of persons nominated by Managing Director / CEO for the mentioned purpose herein;
  15. **“Commencement Date”** shall be the same as contract date.
  16. **“Commissioning”** means Successful operation of the Project / Works by the successful Bidder, for the purpose of carrying out Performance Test(s) as defined in RFP.
  17. **“Company”** shall mean a body incorporated in India under the Companies Act, 1956 or Companies Act, 2013 including any amendment thereto;
  18. **“Contract”** Agreement made between IAHE and the selected bidder on issue of LOA.
  19. **“Contract date”** Date of signing the contract
  20. **“Contract Amount”** The total price quoted by the selected bidder
  21. **“IAHE”** Dharamshala Smart City Limited
  22. **“EMD”** Earnest Money Deposit
  23. **“HPSEB”** means Himachal Pradesh State Electricity Board
  24. **“IEC”** shall mean specifications of International Electro-technical Commission;
  25. **“kWp”** shall mean kilo-Watt Peak;
  26. **“kWh”** shall mean kilo-Watt-hour;
  27. **“LoA”** letter of acceptance
  28. **“MNRE”** shall mean Ministry of New and Renewable Energy, Government of India;
  29. **“Price Bid”** shall mean the Bidder’s quoted Price as per the Section - IV of this RFP;
  30. **“O&M”** shall mean Operation & Maintenance of 5 years for PPA model of Rooftop Solar PV system.
  31. **“PBG”** Performance Bank Guarantee
  32. **“PV”** means Photovoltaic
  33. **“RFP”** shall mean Request for Selection (RFP) / Bid document / Tender document
  34. **“Rooftop Solar PV”** shall mean the Solar PV systems installed on the Flat / Sloped roof/ ground shall be covered under this scheme.
  35. **“Wp”** shall mean Watt Peak.
-



### **Interpretations**

1. Words comprising the singular shall include the plural & vice versa.
2. An applicable law shall be construed as reference to such applicable law including its amendments or re-enactments from time to time.
3. A time of day shall save as otherwise provided in any agreement or document be construed as a reference to Indian Standard Time.
4. Different parts of this contract are to be taken as mutually explanatory and supplementary to each other and if there is any differentiation between or among the parts of this contract, they shall be interpreted in a harmonious manner so as to give effect to each part.
5. The table of contents and any headings or sub headings in the contract has been inserted for case of reference only & shall not affect the interpretation of this agreement.



## Instruction to Bidders

### General Information and Guidelines

#### 1.1.1 Purpose

IAHE seeks the services of a reputed company, for **“Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at IAHE, A-5, Sector-62, Noida (UP) under PPA”** (hereinafter referred to as the “Project”). This document provides information to enable the bidders to understand the broad requirements to submit their Proposals. The detailed scope of work is provided in Section 2.0 of this RFP document.

#### 1.1.2 Consortium

- i. The Bidder for participation in the Selection Process, may be a single entity or a group of entities (the “Consortium”), coming together to execute the project. The term 'Bidder' used herein would apply to both a single Entity and a Consortium.
- ii. The Successful Bidder at no given point of time, may assign or delegate its rights, duties or obligations under the Agreement/ Contract except with prior written consent of the Authority
- iii. No bidder applying individually, or as a member of a Consortium, as the case may be, can be a member of any other consortium bidding for the Project.
- iv. In the event the bidder is a Consortium, it shall, comply with the following additional requirements:
  - a) Number of members in a consortium shall not exceed 2 (Two) including the Lead Member



- b) The Members of the Consortium shall nominate one member as the Lead Member
- c) The Members of the Consortium shall be jointly and severally responsible for successful implementation of the Project throughout the terms of the contract.
- d) The Lead Member shall be authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Consortium or its members respectively from time to time in the response to this RFP.
- e) The Members of the Consortium shall submit a Consortium Agreements set out in Annexure 1.4 *inter alia* consisting of the following:
- Undertake that each of the members of the Consortium shall have an independent, definite and separate scope of work, allocated as per each member's field of expertise.
  - Commit to the profit and loss sharing ratio of each member.
  - Commit to the scope of work, rights, obligations and liabilities to be held by each member.
  - Provide a brief description of the roles and responsibilities of individual members; and clearly define the proposed administrative arrangements (organization chart) for the management and execution of the Project.
  - Include a statement to the effect that all the members of the Consortium shall be jointly and separately liable for all obligations in relation to the Contract until the completion of the Project in accordance with the Contract
- f) In case the Successful Bidder is a Consortium, then no change in the Lead member is permissible. Change of the other member in the Consortium can be done only under extreme circumstances such as non-performance of that member, insolvency or bankruptcy of that member, which shall be
-



---

done only with the prior written approval of the ACADEMY. Provided that in the event of any such approved change of Consortium member, the new member (company) replacing outgoing Consortium member shall have same or higher financial, technical and legal qualifications as the outgoing member, and to the satisfaction of IAHE. In the event ACADEMY does not grant approval for the change of the Consortium member (other than the Lead Member) or suitably qualified replacement member (companies) are not available/ found, the exit of such Consortium member shall constitute a breach of the Contract.

- g) All members of the consortium are required to follow the highest level of work ethics, if any member of the consortium has a Conflict of Interest or indulges in Prohibited Practices; the whole Consortium is liable to be disqualified. Further, in the event any entity has been barred by the Central Government, any State Government, a statutory ACADEMY or a public sector undertaking, as the case may be, from participating in any project or bid, and the bar subsists as on the date of Last Date of Submission, it would not be eligible to submit a Proposal either by itself or as part of a Consortium.

### **1.1.3 Sub-Contracting**

Sub-Contracting is not allowed for this RFP

### **1.1.4 Completeness of Bid**

The bid should be complete in all respects. Failure to furnish all information required by the RFP document or submission of a proposal not substantially responsive to the RFP document in every respect will be at the bidder's risk and may result in rejection of its Bid and forfeiture of the EMD.





---

### 1.1.5 Proposal Preparation Costs

- 1 The bidder shall submit the bid at its cost and expense. ACADEMY shall not be held responsible for any cost incurred by the bidder. Submission of a bid does not entitle the bidder to claim any cost and rights over ACADEMY and ACADEMY shall be at liberty to cancel any or all bids without giving any notice.
- 2 All materials submitted by the bidder shall be the absolute property of ACADEMY and no copyright etc. shall be entertained by ACADEMY.

### 1.1.6 Pre-bid Meeting and Queries

1. ACADEMY will host a Pre-Bid meeting as per the date mentioned in the RFP Bid Information Sheet. The authorized representatives, limited to 2, of the interested bidders may attend the pre-bid meeting at their own cost. The purpose of the meeting is to provide bidders with information regarding the RFP and the proposed solution requirements in reference to the RFP. Pre-Bid meeting will also provide each bidder with an opportunity to seek clarifications regarding any aspect of the RFP and the Project.
  2. All bidders shall e-mail their queries to [director.iahe@gmail.com](mailto:director.iahe@gmail.com) in the form and manner as prescribed in Annexure 5. The response to the queries will be published on **Error! Hyperlink reference not valid.** No queries will be entertained thereafter. The response of ACADEMY shall become integral part of RFP document. ACADEMY shall not make any warranty as to the accuracy and completeness of responses.
  3. ACADEMY shall endeavor to respond to the questions raised or clarifications sought by the Bidders. However, ACADEMY reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this clause shall be taken or read as compelling or requiring ACADEMY to respond to any question or to provide any clarification.
  4. ACADEMY may also on its own motion, if deemed necessary, issue interpretations and clarifications to all Bidders. All clarifications and
-



interpretations issued by ACADEMY shall be deemed to be part of the Bidding Documents. Verbal clarifications and information given by ACADEMY or its employees or representatives shall not in any way or manner be binding on ACADEMY.

#### **1.1.7 Amendment of RFP Document**

- 1 All the amendments made in the document would be published on the e-Tendering Portal only and shall be part of RFP.
- 2 The Bidders are advised to visit the e-tendering portal on regular basis to check for necessary updates. ACADEMY also reserves the right to amend the dates mentioned in this RFP.

#### **1.1.8 Supplementary Information to the RFP**

If ACADEMY deems it appropriate to revise any part of this RFP or to issue additional data to clarify an interpretation of provisions of this RFP, it may issue corrigendum(s) to this RFP. Any such corrigendum shall be deemed to be incorporated by this reference into this RFP.

#### **1.1.9 DHARAMSHALA SMART CITY LIMITED's Right to Terminate the Process**

ACADEMY may terminate the RFP process at any time and without assigning any reason. ACADEMY reserves the right to amend/ edit/ add/ delete any clause of this RFP Document. This will be informed to all and will become part of the RFP and information for the same would be published on the e-Tendering portal.

#### **1.1.10 Site Visit and Verification of Information**

- a) The Bidder are encouraged to visit and examine the site or sites and obtain for itself, at its own responsibility and risk, all information that may be necessary for submission of the bid and entering into the Contract. The costs of visiting the site or sites shall be at the Bidder's own expense.
- b) ACADEMY will arrange for the Bidder and any of its personnel or agents to gain access to the relevant site or sites, provided that the Bidder gives



ACADEMY adequate notice of not less than 5 (Five) days prior to such proposed visit.

- c) No site visits shall be arranged or scheduled after the deadline for the submission of the Bids and prior to the award of Contract.

## 1.2 **Key Requirements of the Bid**

### 1.2.1 RFP Document

RFP can be downloaded from the website [www.iahe.org.in](http://www.iahe.org.in).

### 1.2.2 Earnest Money Deposit (EMD)

- 1 In terms of this RFP, a Bidder is required to submit EMD as per the Bid Information Sheet in the form of Demand Draft/ Fixed Deposit Receipt(s)/ Bank Guarantee issued by any nationalized/ scheduled commercial bank in favour of "Indian Academy of Highway Engineers" payable at Noida.
- 2 The EMD of unsuccessful bidders will be returned within 90 (ninety) days from the date of opening of the financial proposal. The Bid Security, for the amount mentioned above, of the Successful Bidder would be returned upon submission of Performance Bank Guarantee for an amount equal to 10% of Total Contract Value in the format provided in Annexure 8 of the RFP.
- 3 No interest will be paid by ACADEMY on the EMD amount and EMD will be refunded to all the bidders (including the Successful Bidders) without any accrued interest on it.
- 4 The bid submitted without EMD, mentioned above, will be summarily rejected.
- 5 The EMD may be forfeited:
  - a. If a bidder withdraws its bid or increases its quoted prices during the period of bid validity or its extended period, if any.



- b. In case of a Successful Bidder, if the bidder fails to sign the contract in accordance with the terms and conditions.
  - c. If during the bid process, a bidder indulges in any such deliberate act as would jeopardize or unnecessarily delay the process of bid evaluation and finalization.
  - d. If, during the bid process, any information is found false/ fraudulent/ *mala fide*, and then ACADEMY shall reject the bid and, if necessary, initiate action.
- 6 The decision of ACADEMY regarding forfeiture of the EMD shall be final and binding upon bidders.



## 1.3 Instruction to Bidders

### 1.3.1 Bid Submission Format

The entire Bid shall be submitted strictly as per the format specified in this RFP. Bids with any deviation from the prescribed format are liable for rejection.

### 1.3.2 Bid Submission Instructions

1. Sealed single state two envelope (Technical & Financial bids) unconditional Tenders in **hard duplicate copy** must be submitted (by registered post with AD or Dropped at Reception desk) addressed to:

**Addl. DG & Director,  
Indian Academy of Highway Engineers (IAHE) ,  
Plot no.-A-5, Institutional Area, Sector 62, Noida-201301 (U.P) on & before  
29.08.2018 upto 12:00 hrs.**

2. The following points shall be in consideration for submission of bids:
  - a. ACADEMY shall not accept delivery of Bids in any manner other than that specified in this RFP. Bid delivered in any other manner shall be treated as defective, invalid and rejected.
  - b. The Bidder is expected to price all the items and services sought in the RFP and proposed in the technical proposal. The Bid should be comprehensive and inclusive of all the services to be provided by the Bidder as per the scope of work and in accordance with the terms and conditions as set out in the Contract.
  - c. ACADEMY may seek clarifications from the Bidder on the technical proposal. Any of the clarifications by the Bidder on the technical proposal should not have any commercial implications. The Financial Proposal submitted by the Bidder should be inclusive of all the items in the technical proposal and should incorporate all the clarifications provided by the Bidder on the technical proposal during the evaluation of the technical offer
  - d. Technical Proposal shall not contain any financial information.
  - e. If any Bidder does not qualify the pre-qualification criteria stated in



Section 1.4.5 of this RFP, the technical and financial proposals of the Bidder shall not be opened. Similarly, if the Bidder does not meet the technical evaluation criteria, the financial proposal of the Bidder shall not be opened.

- f. It is required that all the proposals submitted in response to this RFP should be unconditional in all respects, failing which ACADEMY reserves the right to reject the proposal.



### **1.3.3 Late Bid and Bid Validity Period**

Bids received after the due date and the specified time (including the extended period if any) for any reason whatsoever, shall not be entertained and shall not be opened. The validity of the bids submitted before deadline shall be till 180 days from the last date of submission of the bids.

### **1.3.4 Modification and Withdrawal of Bids**

No bid shall be withdrawn in the interval between the deadline for submission of bids and the expiration of the validity period specified by the bidder on the bid form. Entire EMD shall be forfeited if any of the bidders withdraw their bid during the validity period.

### **1.3.5 Non-conforming Bids**

A Bid may be construed as a non-conforming proposal and ineligible for consideration:

- a. If it does not comply with the requirements of this RFP
- b. If the Bid does not follow the format requested in this RFP or does not appear to address the particular requirements of ACADEMY.

### **1.3.6 Language of Bids**

The Bids should be submitted in English language only. If any supporting documents submitted are in any language other than English, then the translation of the same in English language is to be duly attested by the bidder and submitted with the bid, and English translation shall be validated at ACADEMY's discretion.

### **1.3.7 Authentication of Bid**

- a) Authorized person of the bidder who signs the bid shall obtain the ACADEMY letter from the bidder, which shall be submitted with the Bid. All pages of the bid and its annexure, etc. shall be signed and stamped by the person or persons signing the bid.



- 
- b) The Bidder should submit a Power of Attorney as per the format set forth in Annexure 6, authorizing the signatory of the Bid to commit the Bidder.

### 1.3.8 Acknowledgement of Understanding of Terms

By submitting a Bid, each Bidder shall be deemed to acknowledge that he has carefully read all sections of this RFP, including all forms, schedules, annexure, corrigendum and addendums (if any) hereto, and has fully informed itself as to all existing conditions and limitations.

## 1.4 Evaluation Process

- a. ACADEMY will constitute a Bid Evaluation Committee (BEC) to evaluate the responses of the bidders
- b. The BEC constituted by ACADEMY shall evaluate the responses to the RFP (Envelope 1 and Envelope 2) and all supporting documents / documentary evidence. Inability to submit requisite supporting documents / documentary evidence, may lead to rejection.
- c. The decision of the BEC in the evaluation of responses to the RFP shall be final. No correspondence shall be entertained outside the process of negotiation/ discussion with the Committee.
- d. The BEC may ask for meetings with the Bidders to seek clarifications on their proposals and may visit Bidder's Site to validate the credentials/ citations claimed by the bidder.
- e. The BEC reserves the right to reject any or all proposals on the basis of any deviations.
- f. Each of the responses shall be evaluated as per the criteria and requirements specified in this RFP.
- g. Please note that BEC may seek inputs from their professional, external experts in the Bid evaluation process.
-





---

### **1.4.1 Bid Opening**

- a. Total transparency shall be observed and ensured while opening the Bids. All Bids shall be opened in the presence of Bidder's representatives who choose to attend the Bid opening sessions on the specified date, time and address.
  - b. ACADEMY reserves the rights at all times to postpone or cancel a scheduled Bid opening.
  - c. Bid opening shall be conducted in 2 (Two) Stages;
    - Stage 1 - RFP Document fee and Bid Security/EMD, Pre-Qualification Proposal and Technical Proposal
    - Stage 2- Financial Proposal
  - d. The venue, date and time for opening the Pre-qualification Proposal are mentioned in the RFP Bid Information Sheet. The date and time for opening the Financial Proposals would be communicated to the qualified bidders.
  - e. The Financial Proposals of only those bidders will be opened who fulfils all criteria in Technical Evaluation.
  - f. The Bidder's representatives who are present shall sign a register evidencing their attendance. In the event of the specified date of Bid opening being declared a holiday for ACADEMY, the bids shall be opened at the same time and location on the next working day. In addition to that, if the representative of the Bidder remains absent, ACADEMY will continue process and open the bids of all the bidders
  - g. During Bid opening, preliminary scrutiny of the Bid documents shall be made to determine whether they are complete, whether required EMD has been furnished, whether the Documents have been properly signed, and whether the bids are generally in order. Bids not conforming to such
-



preliminary requirements shall be prima facie rejected. ACADEMY has the right to reject the bid after due diligence is done.

#### **1.4.2 Evaluation of Pre-Qualification Proposals**

- a) ACADEMY shall open Envelope 1 marked “Pre-Qualification cum Technical Document” on Bid opening date.
- b) Response to the Pre-Qualification Requirements shall be evaluated in accordance with the requirements specified in this RFP and in the manner prescribed in Section 1.4.5 of the RFP. **Each of the Pre-Qualification condition mentioned in Section 1.4.5 of the RFP is MANDATORY.** In case the Bidder does not meet any one of the conditions, the bidder will be disqualified.
- c) The Pre-Qualification proposal must contain all the documents in compliance with instructions given in the Annexure 1.

#### **1.4.3 Evaluation of Technical Proposal**

The evaluation of the Technical Proposals will be carried out in the following manner:

- a) ACADEMY will review the technical bids of the short-listed bidders to determine whether the technical proposals are substantially responsive. Bids that are not substantially responsive are liable to be disqualified at ACADEMY’s discretion.
  - b) Bidders' proposal will be evaluated as per the requirements and guidelines specified in the Annexure 2 and technical evaluation criteria as mentioned in Section 1.4.6 of the RFP.
  - c) The Bidders are required to submit all required documentation in support of the evaluation criteria specified (e.g. Detailed Project citations and copy of work order, clients contact information for verification, and all others components) as required for technical evaluation.
  - d) At any time during the Bid evaluation process, BEC may seek oral/ written clarifications from the Bidders. The BEC may seek inputs from their professional and technical experts in the evaluation process.
-



- 
- e) ACADEMY reserves the right to do a reference check of the past experience stated by the Bidder. Any feedback received during the reference check shall be taken into account during the technical evaluation process.
  - f) The Financial Proposals of Bidders who do not qualify technically shall be kept unopened in the e-Tendering system.
  - g) ACADEMY reserves the right to accept or reject any or all bids without giving any reasons thereof.
  - h) ACADEMY shall inform to the technically shortlisted Bidders about the date and venue of the opening of the financial proposals.

#### **1.4.4 Financial Proposal Evaluation**

- a) All the technically qualified bidders will be notified to participate in Financial Proposal opening process.
- b) Financial Proposals for the technically qualified bidders will then be opened on the notified date and time and reviewed to determine whether the financial proposals are substantially responsive. Bids that are not substantially responsive are liable to be disqualified at ACADEMY's discretion.
- c) Financial Proposals that are not meeting the condition mentioned in Annexure 3 shall be liable for rejection.
- d) Total Cost of Bid (TCB) shall be calculated based on the financial format given in Annexure 3.2 of the RFP.
- e) If there is a discrepancy between words and figures, the amount in words shall prevail. For any other calculation/ summation error etc. the bid may be rejected.



### 1.4.5 Pre-Qualification Criteria

The proposal failing to meet all of the below pre-qualification eligibility criteria shall be disqualified and will not be considered for technical evaluation process.

| S No | Basic Requirement     | Specific Requirements  | Documents Required   |
|------|-----------------------|--|--|
| 1    | Legal Entity          | The Sole Bidder or the Members of the consortium should be registered in India under the Companies Act 1956/2013 as amended and Should have been in operation for at least 3 years as on date of submission of the Bid.<br>As per MNRE order regarding “Operational Guidelines for Channel Partners/New Entrepreneurs” (File No. 5/22/2013-14/RT dated 18.09.2015), Channel Partners registered (PAST/PRESENT) with MNRE are also eligible to participate in this Project Category | Copy of Certificate of Incorporation under Companies Act, 1956/2013 and copies of valid PAN, GSTIN, MSME as per statutory requirement. |
| 2    | Financial Eligibility | The Sole Bidder or the Lead Member of consortium should have average annual Turnover of Rs. 3 Crore for last 3 audited financial years.  | Certificate from The Statutory Auditor   |
| 3    | Blacklisting          | The Sole Bidder or any member of the consortium should not be black listed by Central Government/any State Government/ Public Sector undertaking entity in India or similar agencies globally for unsatisfactory Past performance, corrupt, fraudulent or any other unethical business practices as on date of submission of the proposal.   | Undertaking by the authorized signatory AS per the format given as Annexure 4  |
| 4    | Certifications        | The Sole Bidder or the Lead Member of consortium should have a valid ISO<br>have ISO 9001:2015 AND ISO 14001:2018 Certificate<br>have ISO 9001:2015 AND ISO 14001:2018 Certificate   | Valid Copy of certificates   |



#### **1.4.6 Technical Evaluation Criteria**

- a. Bidder should have experience of Design, Engineering, Supply, Civil works, Erection, testing, commissioning, operation and maintenance of On-Grid and off-grid Solar PV projects under PPA.
- b. Minimum cumulative experience of at least 0.5MWp
- c. Minimum number of projects shall be 1
- d. The OEM for each products or technology quoted should be in the business of that product or solution or technology for at least (Three) years as on the date of release of the RFP.
- e. The Bidder shall quote only one specific make and model from only one specific OEM, for each of the goods. Providing more than one option shall not be allowed. All goods quoted by the Bidder must be associated with item code and names and with printed literature describing configuration and functionality. Any deviation from the printed specifications should be clearly mentioned in the offer document by the Bidder.
- f. All the OEMs should have authorized presence in India either directly or through channel partner(s) as on the date of release of RFP.

#### **Award of Contract**

##### **1.5.1 Award Criteria**

1. All the technically qualified bidders will be notified through email to participate in Financial Proposal opening process.
2. The cost indicated in the Financial Proposal shall be deemed as final and reflecting the total cost of services and should be stated in INR only. Omissions, if any, in costing of any item shall not entitle the Bidder to be compensated and the liability to fulfil its obligations as per the Scope of Work and Technical Specifications within the total quoted price shall be that of the Bidder. The Bidder shall bear all taxes, duties, fees, levies and other charges imposed under the Applicable Law as applicable.
3. The Bidder with the Lowest VALUE OF FINANCIAL PROPOSAL (L1) will be declared as a successful bidder.
4. If there is more than one bidder having the same value of the financial proposal, ACADEMY reserves the right to finalize the Successful Bidder and that will be binding on all bidders.



### **1.5.2 Letter of Acceptance (LoA)**

Prior to the expiration of the period of bid validity, ACADEMY will notify the Successful Bidder in writing or by fax or email, to be confirmed in writing by letter, that its bid has been accepted. LoA will constitute the formation of the contract. Upon the Successful Bidder's furnishing of Performance Bank Guarantee, ACADEMY will promptly notify each unsuccessful bidder.

### **1.5.3 Signing of Contract**

ACADEMY shall notify the Successful Bidder that its bid has been accepted. The Successful Bidder shall enter into contract agreement with ACADEMY within the time frame mentioned in the Letter of Acceptance issued to the Successful Bidder by ACADEMY.

### **1.5.4 Failure to Agree With the Terms & Conditions of the RFP / Contract**

Failure of the Successful Bidder to agree with the Terms & Conditions of the RFP/ Contract shall constitute sufficient grounds for the annulment of the award, in which event ACADEMY may invite for fresh RFP. This bidder will be blacklisted.

### **1.5.5 IAHE's Right to accept any Bid and to Reject any or All Bids**

ACADEMY reserves the right to accept or reject any Bid, and to annul the bidding process and reject any or all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for ACADEMY's action.

### **Performance Bank Guarantee**

- a) Within fifteen (15) working days from the date of issuance of LOA, the Successful Bidder shall at his own expense submit unconditional and irrevocable Performance Bank Guarantee (PBG) for an amount equivalent to 10% of contract value to ACADEMY.
- b) The PBG shall be from a Nationalized Bank or a Scheduled Commercial Bank in the format prescribed in Annexure 8, payable on demand, for the due performance and fulfilment of the contract by the bidder.
- c) In addition to paper based confirmation system, IT enabled confirmation system will be followed for which the Bank Guarantee will be subjected to.
- d) All charges whatsoever such as premium; commission etc. with respect to the PBG shall be borne by the Successful Bidder.



- 
- e) The PBG may be discharged/returned by ACADEMY upon being satisfied that there has been due performance of the obligations of the bidder under the contract. However, no interest shall be payable on the PBG.
  - f) The PBG shall be valid up to 90 days beyond the completion of the Operation and Maintenance period.
  - g) In case the project is extended after the project schedule as mentioned in the RFP, the PBG shall be accordingly extended by the Successful Bidder till the extended period.
  - h) In the event of the Bidder being unable to service the contract for whatever reason ACADEMY would invoke the PBG. Notwithstanding and without prejudice to any rights whatsoever of ACADEMY under the contract in the matter, the proceeds of the PBG shall be payable to ACADEMY as compensation for any loss resulting from the bidder's failure to complete its obligations under the Contract. ACADEMY shall notify the Bidder in writing of the exercise of its right to receive such compensation within 14 (fourteen) days, indicating the contractual obligation(s) for which the Bidder is in default.
  - i) ACADEMY shall also be entitled to make recoveries from the bidder's bills, PBG, or from any other amount due to him, the equivalent value of any payment made to him due to inadvertence, error, collusion, misconstruction or misstatement.
  - j) On satisfactory performance and completion of the order in all respects and duly certified to this effect by ACADEMY, Contract Completion Certificate shall be issued and the PBG would be returned to the Successful Bidder.

### **Right to Vary Quantity**

- a) At the time of award of contract, the quantity of goods, works or services originally specified in the bidding documents may be increased or decreased up to 30% "variation". It shall be without any change in the unit prices or other terms and conditions of the Bid and bidding documents.
- b) If ACADEMY does not procure any subject matter of procurement or procures less than the quantity specified in the bidding documents due to change in circumstances, the bidder shall not be entitled for any claim or compensation.



- 
- c) Repeat orders for extra items or additional quantities may be placed on the rates and conditions given in the contract. Delivery or completion period may also be proportionally increased.

### Warranty & Maintenance

- a) Successful Bidder shall also provide complete maintenance support for all supplied hardware and other components as outlined in this RFP for a period of **60 (Sixty) months** from the date of Commissioning.
- b) During the warranty period, the bidder shall warrant that the goods supplied under the contract are new, unused, of the most recent version/models and incorporate all recent improvements in design and materials unless provided otherwise in the contract. The bidder further warrants that the goods supplied under this contract shall have no defects arising from design, materials or workmanship.
- c) ACADEMY or its designated officials shall promptly notify Successful Bidder in writing of any claims arising under this warranty. Upon receipt of such notice, the Successful Bidder shall, within the warranty period and with all reasonable speed, repair or replace the defective systems, without costs to ACADEMY and within time specified and acceptable to ACADEMY.
- d) If the Successful Bidder, having been notified, fails to remedy the defect(s) within the period specified in the contract, ACADEMY may proceed to take such reasonable remedial action as may be necessary, at the Successful Bidder's risk and expense and without prejudice to any other rights, which ACADEMY may have against the bidder under the contract.
- e) During the comprehensive warranty period, the Successful Bidder shall provide all product(s), patches and fixes, within 15 (fifteen) days of their availability and should carry out installation and make operational the same at no additional cost to ACADEMY.

**The Successful Bidder hereby warrants ACADEMY that:**

The supplied Hardware and Software meet all the requirements as outlined in the RFP and further amendments, if any and provides the functionality and performance, as per the terms and conditions specified in the contract.

The proposed Hardware and Software shall achieve parameters detailed in the technical specification/ requirement.

The Successful Bidder shall be responsible for warranty and maintenance services from licensors of products included in the systems.





The Successful bidder shall ensure the maintenance of the acceptance criterion/ standards in respect of the systems during the warranty and maintenance period.

## **Insurance**

### **1.9.1 Insurance during Contract Period**

The Contractor shall effect and maintain at its own cost, from the Contract Date till the date of issue of the Completion Certificate, the insurance of Works, Plant and Material for any loss or damage occurring on account of Force Majeure, Malicious Act, Accidental Damage, Explosion, Fire, Terrorism etc.

The insurance stated above shall cover the ACADEMY and the Contractor against all loss or damage from any cause mentioned above.

### **1.9.2 Insurance for Contractor's Defects Liability**

The contractor shall effect and maintain insurance cover for the works from the date of issue of the Completion Certificate until the end of the Operation and Maintenance (O&M) Period for any loss or damage for which the Contractor is liable and which arises from a cause occurring (as mentioned in clause 1.9.1) prior to the issue of the Completion Certificate.

The Contractor shall also maintain other insurances for maximum sums as may be required under the applicable Laws and in accordance with Good Industry Practice.

### **1.9.3 Insurance against injury to Persons and damage to Property**

The Contractor shall obtain insurance cover not less than Rs. 25.00 lakhs (Rupees Twenty five lakhs only) against its liability for any loss, damage, death or bodily injury. Or damage to any property (except things insured under Paragraph 1.9.1 and 1.9.2 of this Schedule) or to any person which may arise out of the Contractor's performance of this Agreement.

This insurance shall be per occurrence of not less than the amount stated above with no limit on the number of occurrences.

The contractor shall against its liability for any loss, loss and damage to the property on which the contractor occupies, due to performing the obligations under the contract.



---

#### **1.9.4 Insurance to be in Joint names**

The insurance under paragraph 1.9.1 to 1.9.3 above shall be in the joint names of the Contractor and the ACADEMY.



## Scope of Work and Technical Specification.

### Scope of work (“Service”)

- 2.1.1 Scope of work covers Design, Engineering, Supply, Installation, Testing, Commissioning, Synchronizing and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Government Buildings/Spaces
- 2.1.2 The Bidder has to submit all the technical documents of all the components he intend to use.
- 2.1.3 The successful Bidder need to submit/propose following 3 different designs in order to maximize the Energy Generation of Solar PV power plant for the all locations
- 2.1.4 Structure and Civil Design including wind load analysis
- 2.1.5 Solar PV system design (No of strings, No of inverters, series parallel combinations)
- 2.1.6 Simulation results for the Energy Generation for the each case
- 2.1.7 The IAHE will choose option and finalize the execution of the project
- 2.1.8 The Bidder need to submit the plan of execution and mention the deadline for each location and execute the project according
- 2.1.9 Failing the deadline shall lead to penalty set by the IAHE
- 2.1.10 All the permissions/approvals/clearances shall be provided by the IAHE
- 2.1.11 For any changes in specifications of any of components prior approval shall be taken from the IAHE
- 2.1.12 Bidirectional Meters shall be installed at each Solar PV plant for measurement of Import/Export of Energy.
- 2.1.13 The successful bidder shall be responsible for galvanic isolation of Solar PV rooftop power plants whose capacity is equal or more than 100 kWp with electrical grid
- 2.1.14 The Bidder is required to have service network in National Capital Region (NCR). L1 and Selected Bidder(s) who do not currently have a service network in NCR; will be required to open a service centre in NCR within 30 days of issue of Letter of Acceptance (LOA).



- 2.1.15 The mobile app shall be integrated with Dharamshala one-city app/Command and Control center (CCC) to remotely monitor the energy generation.



---

## **2.2 List of Buildings/Spaces in IAHE identified for Solar Power plant**

Building/Spaces in IAHE Campus shall be finalised in mutual consultation.



---

## 2.3 Technical Specification

---

### 2.3.1 The Specifications for the equipment listed above will be as follows:

#### 2.3 DEFINITION

A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables, Junction boxes, Distribution boxes and switches. PV Array is mounted on a suitable structure. Grid tied Solar PV system is without battery.

Solar PV system shall consist of following equipment's/components.

1. Solar PV modules consisting of required number of **Crystalline** PV cell Modules.
2. Grid interactive Power Conditioning Unit with Remote Monitoring System
3. Mounting structures
4. Junction Boxes.
5. Earthing and lightening protections.
6. IR/UV protected PVC Cables, pipes and accessories

#### 2.4 SOLAR PHOTOVOLTAIC MODULES:

2.4.1 The PV modules used should be made in India. The PV module must satisfy the condition of Domestic Content Requirement (DCR) (MNRE No.30/11/2012-13/NSM, MNRE New Delhi, July 2016, Draft ).

2.4.2 The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 Part-1 - requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS.

2.4.3 For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701. The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar crystalline modules of more than or equal to 300 Wp. Any deviation has to be pre-approved by PEC.

2.4.4 Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.



- 2.4.5 PV modules must be tested and approved by one of the IEC authorized test centers. Lab reports not later than 1 year shall be accepted as a concept of Proof of testing.
- 2.4.6 The module frame shall be made of corrosion resistant materials, preferably having anodized aluminium, PGI.
- 2.4.7 The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid. PEC/owners shall allow only minor changes at the time of execution.
- 2.4.8 Other general requirement for the PV modules and subsystems shall be the Following:
- 2.4.8.1 The rated output power of any supplied module shall have tolerance within  $\pm 3\%$ .
- 2.4.8.2 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.
- 2.4.8.3 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.
- 2.4.8.4 I-V curves at STC should be provided by bidder.

### **Solar PV modules**

Plants installed in high dust geographies must have the solar modules tested with relevant dust standards (Applicable standard would be IEC 60068-2-68)].

| <b>Solar Photovoltaic Module Specifications</b> |   |
|---|---|
| Module capacity                                 | $\geq 300$ Wp                               |
| Efficiency                                      | $\geq 15$ %                                 |
| Tolerance                                       | + 5 W                                       |
| PID   | PID Free/resistance certificate is required |
| Maximum system voltage                          | 1000/1500 V                                 |



- I-V curve at STC and NOTC shall be provided and certified (not less than 6 months old).

2.4.9 Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each module. This should be inside the laminate only.

1. Name of the manufacturer of the PV module
2. Name of the manufacturer of Solar Cells.
3. Month & year of the manufacture (separate for solar cells and modules)
4. Country of Origin (separately for solar cells and module)
5. I-V curve for the module Wattage,  $I_m$ ,  $V_m$  and FF for the module
6. Unique Serial No and Model No of the module
7. Date and year of obtaining IEC PV module qualification certificate.
8. Name of the test lab issuing IEC certificate.
9. Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001.

2.4.10 Warranties:

2.4.10.1 Material Warranty:

- i. Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than five (05) years from the date of sale to the original customer ("Customer").
- ii. Defects and/or failures due to manufacturing
- iii. Defects and/or failures due to quality of materials
- iv. Non conformity to specifications due to faulty manufacturing If the solar Module(s) fails to conform to this warranty, the bidder will repair or replace the solar module(s), at the Owners sole optionA certificate of warranty to be provided by Original Equipment Manufacturer (OEM), giving warranty for 25 years.
- v. The list of manufacturing units of the OEM also to be provided. It may be noted that the EPC contractor who has been awarded the order against this RFP, shall take the necessary warranty from their vendor as a





measure of compliance before executing the project. Non-submission of such warranty before supplies may result in cancellation of the order.

#### 2.4.10.2 Performance Warranty

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.

### 2.5 PRE DISPATCH INSPECTION:

IAHE may carry out Pre Dispatch Inspection (PDI) on need basis of the OEM in order to check their compliance with the specifications. All the cost associated with PDI will be to the account of Bidder.

### 2.6 ARRAY STRUCTURE

2.6.1 Hot dip galvanized MS mounting structures may be used for mounting the modules/panels/arrays. Each structure should have angle of inclination as per the site conditions to take maximum installation. However to accommodate more capacity the angle inclination may be reduced until 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. It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard and submit wind loading calculation sheet to IAHE. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.

2.6.2 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.

2.6.3 Structural material shall be corrosion resistant and electrolytic alloy compatible with the materials used in the module frame, its fasteners, nuts and bolts.

2.6.4 Aluminium structures also can be used which can withstand the wind speed of respective wind zone. Necessary protection towards rusting need to be provided either by coating or anodization.



- 2.6.5 Aluminium frames should be avoided for installations in coastal areas.
- 2.6.6 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
- 2.6.7 Regarding civil structures the bidder need to take care of the load bearing capacity of the roof and need arrange suitable structures based on the quality of roof.
- 2.6.8 The total load of the structure (when installed with PV modules) on the terrace should be less than 60 kg/m<sup>2</sup>.
- 2.6.9 The minimum clearance of the structure from the roof level should be 300 mm.
- 2.6.10 In order to install on rooftop on buildings all the rooftop must be refixed wherever required
- 2.6.11 Proper Water-proofing shall be done wherever its necessary
- 2.6.12 Painting of metal parts shall be wherever necessary on extra cost which shall be paid by IAHE after verification

## **2.7 JUNCTION BOXES (JBs)**

- 2.7.1 The junction boxes are to be provided in the PV array for termination of connecting cables. The J. Boxes (JBs) shall be made of Polycarbonate /GRP/FRP/Powder Coated Aluminium /cast aluminium alloy with IP 66 degree of protection. 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.
  - 2.7.2 Copper bus bars/terminal blocks housed in the junction box with suitable termination threads conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single / double compression cable glands. Provision of earthings.
  - 2.7.3 Each Junction Box shall have High quality Suitable capacity Metal Oxide Varistors (MOVs) / SPDs, suitable Reverse Blocking Diodes or 1000/1500 V grade Solar fuses of min two times rating of max short circuit current of string. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.
-



- 2.7.4 Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification.
- 2.7.5 All fuses shall have DIN rail mountable fuse holders and shall be housed in thermoplastic IP 65 enclosures with transparent covers.
- 2.7.6 DC DPBs shall have sheet from enclosure of dust & vermin proof conform to IP 65 protection. The bus bars are made of copper of desired size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.

## **2.8 AC DISTRIBUTION PANEL BOARD(LT):**

- 2.8.1 AC Distribution Panel Board (DPB) shall control the AC power from PCU/ inverter and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while in grid tied mode without Battery option. For plants with Battery this shall also have provision to keep all priority loads, DG/Grid Selection switch and one By-pass switch. The ratings of all switches should be at least 125% of the maximum current flowing through them.
  - 2.8.2 All switches and the circuit breakers, connectors should conform to IEC 60947, part I, II and III/ IS60947 part I, II and III or equivalent IS wherever applicable.
  - 2.8.3 The changeover switches, cabling work should be undertaken by the bidder as part of the project.
  - 2.8.4 All the Panels shall be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz
  - 2.8.5 The panels shall be designed for minimum expected ambient temperature of 45 °C, 80 percent humidity upto maximum of 50 °C and dusty weather.
  - 2.8.6 All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better but for housing transformer wherever needed, it may be IP 33 or better.
  - 2.8.7 Should conform to Indian Electricity Act and rules (till last amendment).
  - 2.8.8 All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear
-



shall be suitable for continuous operation and satisfactory performance under the following supply conditions

## **2.9 PCU/INVERTERS:**

- 2.9.1 The combined PV wattage of all inverters should not be less than rated capacity of power plant under STC.
- 2.9.2 The cumulative kVA rating of inverter/s for each PV system shall be according to the technical design and system wattage.
- 2.9.3 Inverter/s shall include MPPT (Maximum Power Point Tracking) control to extract maximum energy from solar array and produce AC power as per following.
- 2.9.4 Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.

**Table1: Inverter Specification**

| <b>Inverter Specification</b>               |   |
|---|---|
| <b>Control</b>                              | Microprocessor /DSP   |
| <b>Nominal AC output voltage and</b>        | 415V, 3 Phase, 50 Hz  |
| <b>Frequency</b>                            | (In case single phase inverters are offered, suitable arrangement for balancing the phases must be made.) |
| <b>Output frequency</b>                     | 50 Hz   |
| <b>Grid Frequency Synchronization range</b> | ± 2.5 Hz  |
| <b>Ambient temperature considered</b>       | -20°C to 50°C   |
| <b>Humidity</b>                             | 95 % Non-condensing   |
| <b>Protection of Enclosure</b>              | IP-20(Minimum) for indoor.  |
|   | IP-65(Minimum) for outdoor.   |
| <b>Grid Frequency Tolerance range</b>       | ± 2.5 Hz  |
| <b>Grid Voltage tolerance</b>               | ± 10%   |
| <b>No-load losses</b>                       | Less than 1% of rated power   |
| <b>Inverter efficiency(minimum)</b>         | >93% (In case of 10 kW or above with in-built galvanic isolation)   |
|   | >95% (In case of 10 KW or above without in- built galvanic isolation)                                     |
| <b>Inverter efficiency (minimum)</b>        | > 90% (In case of less than 10 kW)  |
| <b>THD</b>                                  | < 3%  |
| <b>PF</b>                                   | > 0.9   |

**2.10 The PCU should have the following certifications**

- 2.10.1 IEC 62109-1, IEC 62109-2: Safety of power converters for use in photovoltaic power systems - Part 1: General requirements, and Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters. Safety compliance (Protection degree IP 65 for outdoor mounting, IP 54 for indoor mounting)
- 2.10.2 IEC 61683: Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency (10%, 25%, 50%, 75% & 90-100% Loading Conditions)
- 2.10.3 IEC 62116 or, IEEE 1547: Utility-interconnected Photovoltaic Inverters - Test Procedure of Islanding Prevention Measures



- 
- 2.10.4 IEC 61727:2004 Photovoltaic (PV) systems - Characteristics of the utility interface is being added, along-with “Technical Standards for Connectivity of the Distributed Generation Resources” as published by Central Electricity ACADEMY(CEA), Ministry of Power, Government of India.
  - 2.10.5 IEC 60068-2 (1, 2, 14, 30 & 64): Environmental Testing of PV System – Power Conditioners and Inverters
  - 2.10.6 IEC 60068-2-1: Environmental testing -Part 2-1: Tests - Test A: Cold
  - 2.10.7 IEC 60068-2-2: Environmental testing -Part 2-2: Tests - Test B: Dry heat
  - 2.10.8 IEC 60068-2-14: Environmental testing - Part 2-14: Tests - Test N: Change of temperature
  - 2.10.9 IEC 60068-2-30: Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)
  - 2.10.10 IEC 60068-2-64: Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance.

## **2.11 NET METERING**

In order to avail the benefit of net metering, IAHE or its authorized company (The EPC Contractor) shall provide and lay the dedicated electrical cables for transmission of Solar Power from the System up to the Delivery Point. Transmission or distribution of Solar Power beyond this point will be the responsibility of the IAHE. The Delivery Point shall be where the Main Metering System is located. "Main Metering System" means all meter(s) and metering devices owned by the IAHE and installed at the Delivery point for measuring and recorded the delivery and receipt of energy.

The IAHE shall obtain any statutory approvals and clearances that may be required, such as from the Electrical Inspector or the municipal or other authorities, before connecting the Roof-top Solar PV System to the distribution Network. The work under PPA shall be deemed to be completed when the EPC contractor / IAHE authorized company completes the installation and generate energy up to the delivery point. The IAHE shall bear all costs pertaining to installation, testing, calibration, maintenance, renewal and repair meters at their side of delivery point On request of the IAHE PEC's authorize company / the EPC contractor may provide its services to the IAHE for establishment of net meters based on mutual agreement



---

between IAHE and the contractor.

## **2.12 DATA ACQUISITION SYSTEM / PLANT MONITORING**

- 2.12.1 Data Acquisition System shall be provided for each of the solar PV plant above 10 kWp capacity.
- 2.12.2 Data Logging Provision for plant control and monitoring, time and date stamped system data logs for analysis with the high quality, suitable PC. Metering and Instrumentation for display of systems parameters and status indication to be provided.
- 2.12.3 Solar Irradiance: An integrating Pyrometer / Solar cell based irradiation sensor (along with calibration certificate) provided, with the sensor mounted in the plane of the array. Readout integrated with data logging system.
- 2.12.4 Temperature: Temperature probes for recording the Solar panel temperature and/or ambient temperature to be provided complete with readouts integrated with the data logging system
- 2.12.5 The following parameters are accessible via the operating interface display in real time separately for solar power plant:
  - 2.12.5.1 AC Output Voltage.
  - 2.12.5.2 AC Output current.
  - 2.12.5.3 Output Power
  - 2.12.5.4 Power factor.
  - 2.12.5.5 DC Input Voltage.
  - 2.12.5.6 DC Input Current.
  - 2.12.5.7 Time Active.
  - 2.12.5.8 Time disabled.
  - 2.12.5.9 Time Idle.
  - 2.12.5.10 Power produced
  - 2.12.5.11 Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage.



- 2.12.6 All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values, previous values for up to a month and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel.
- 2.12.7 PV array energy production: Digital Energy Meters to log the actual value of AC/ DC voltage, Current & Energy generated by the PV system provided. Energy meter along with CT/PT should be of 0.5 accuracy class.
- 2.12.8 Computerized DC String/Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately.
- 2.12.9 String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency shall be monitored.
- 2.12.10 Computerized AC energy monitoring shall be in addition to the digital AC energy meter.
- 2.12.11 The mobile app shall be integrated with Dharamshala one-city app/Command and control centre (CCC) to remotely monitor the energy generation.
- 2.12.12 The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.
- 2.12.13 All instantaneous data shall be shown on the computer screen.
- 2.12.14 Software shall be provided for USB download and analysis of DC and AC parametric data for individual plant.
- 2.12.15 Provision for instantaneous Internet monitoring and download of historical data shall be also incorporated.
- 2.12.16 Remote Server and Software for centralized Internet monitoring system shall be also provided for download and analysis of cumulative data of all the plants and the data of the solar radiation and temperature monitoring system.
-





- 
- 2.12.17 Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis.
  - 2.12.18 Simultaneous monitoring of DC and AC electrical voltage, current, power, energy and other data of the plant for correlation with solar and environment data shall be provided.
  - 2.12.19 Remote Monitoring and data acquisition through Remote Monitoring System software at the owner / PEC location with latest software/hardware configuration and service connectivity for online / real time data monitoring / control complete to be supplied and operation and maintenance / control to be ensured by the bidder.
  - 2.12.20 The bidders shall be obligated to push real-time plant monitoring data on a specified intervals (say 15 minute) through open protocol at receiver location (cloud server) in XML/JSON format, preferably. Suitable provision in this regard will be intimated to the bidders.

## **2.13 PROTECTIONS**

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

### **2.13.1 LIGHTNING PROTECTION**

- 2.13.1.1 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 standards. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induce transients find an alternate route to earth.

### **2.13.2 SURGE PROTECTION**

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



arrangement)

### **2.13.3 EARTHING PROTECTION**

2.13.3.1 Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lighting arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of Department/PEC as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.

2.13.3.2 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.

### **2.13.4 GRID ISLANDING:**

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

2.13.4.2 A manual disconnect 4-pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel.



## **2.14 CABLES**

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

- 2.14.1 Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
  - 2.14.2 Temp. Range:  $-10^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
  - 2.14.3 Voltage rating 660/1000/1500 V
  - 2.14.4 Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
  - 2.14.5 Flexible 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 (2%)
  - 2.14.6 For the DC cabling, XLPE or, XLPO insulated and sheathed, UV-stabilized single core multi-stranded flexible copper cables shall be used; Multi-core cables shall not be used.
  - 2.14.7 For the AC cabling, PVC or, XLPE insulated and PVC sheathed single or, multi-core multi-stranded flexible copper cables shall be used; Outdoor AC cables shall have a UV-stabilized outer sheath.
  - 2.14.8 The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use. Outer sheath of cables shall be electron beam cross-linked XLPO type and black in colour.
  - 2.14.9 The DC cables from the SPV module array shall run through a UV-stabilized PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm.
  - 2.14.10 Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors (MC4) and couplers
  - 2.14.11 All cables and conduit pipes shall be clamped to the rooftop, walls and
  - 2.14.12 ceilings with thermo-plastic clamps at intervals not exceeding 50 cm; the minimum DC cable size shall be 4.0 mm<sup>2</sup> copper; the minimum AC cable size shall be 4.0 mm<sup>2</sup> copper. In three phase systems, the size of the neutral wire size shall be equal to the size of the phase wires.
  - 2.14.13 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. In addition, cable drum no. / Batch no. to be embossed/ printed at every one meter.
- 2.14.14 Cable Jacket should also be electron beam cross-linked XLPO, flame retardant, UV resistant and black in color.
- 2.14.15 All cables and connectors for use for installation of solar field must be of solar grade which can withstand harsh environment conditions including High temperatures, UV radiation, rain, humidity, dirt, salt, burial and attack by moss and microbes for 25 years and voltages as per latest IEC standards. DC cables used from solar modules to array junction box shall be solar grade copper (Cu) with XLPO insulation and rated for 1.1kV as per relevant standards only.
- 2.14.16 The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All the cables required for the plant shall be provided by the bidder. Any change in cabling sizes if desired by the bidder shall be approved after citing appropriate reasons. All cable schedules/ layout drawings shall be approved prior to installation.
- 2.14.17 Multi Strand, Annealed high conductivity copper conductor PVC type 'A' pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armored cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/ equivalent BIS Standards as specified below: BoS item / component Standard Description Standard Number Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V, UV resistant for outdoor installation IS /IEC 69947.
- 2.14.18 The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 2.0%.
- 2.14.19 The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed 2.0%.
-

## 2.15 CONNECTIVITY

The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the Distribution Code/Supply Code of the State and amended from time to time. Following criteria have been suggested for selection of voltage level in the distribution system for ready reference of the solar suppliers.

**Table 2:Capacity and voltage**

| Plant Capacity   | Connecting voltage  |
|--|---|
| Up to 10 Kw  | 240V-single phase or 415V-three phase at the option of the consumer |
| Above 10kW and up to 100 kW single PCU in any nos        | 415V – three phase At HT/EHT level                                  |
| Above 100kW single unit and not multiples of upto 100 KW | (11kV/33kV/66kV) as per DISCOM rules                                |

- 2.15.1 The maximum permissible capacity for rooftop shall be 100 kWp for a single net metering point.
- 2.15.2 Utilities may have voltage levels other than above, DISCOMS may be consulted before finalization of the voltage level and specification be made accordingly.
- 2.15.3 For large PV system (Above 100 kW) for commercial installation having large load, the solar power can be generated at low voltage levels and stepped up to 11 kV level through the step up transformer. The transformers and associated switchgear would require to be provided by the successful bidders.

## 2.16 TRANSFORMERS “IF REQUIRED” AND METERING

- 2.16.1 The bidder must take care of approval through IAHE from concerned UPPCL for the connectivity, technical feasibility, transformers (if need to be installed) and synchronization for evacuation of power from Solar PV power plant and submit the



---

same document before commissioning of Solar PV plant.

## **2.17 TOOLS & TACKLES AND SPARES:**

- 2.17.1 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. List of tools and tackles to be supplied by the bidder for approval of specifications and make from IAHE.
- 2.17.2 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.

## **2.18 DANGER BOARDS AND SIGNAGES:**

- 2.18.1 Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Three signage shall be provided one each at battery –cum- control room, solar array area. Text of the signage may be finalized in consultation with IAHE.

## **2.19 FIRE EXTINGUISHERS:**

The fire-fighting system for the proposed power plant for fire protection shall be consisting of:

- 2.19.1 Portable fire extinguishers in the control room for fire caused by electrical short circuits
- 2.19.2 Sand buckets in the control room
- 2.19.3 The installation of Fire Extinguishers should confirm to TAC regulations and BIS standards. The fire extinguishers shall be provided in the control room housing PCUs as well as on the Roof or site where the PV arrays have been installed.



## **2.20 DRAWINGS & MANUALS:**



- 
- 2.20.1 Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.
  - 2.20.2 ISI Approved and reputed makes for equipment be used.
  - 2.20.3 For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to IAHE /owners before progressing with the installation work

#### **2.21 PLANNING AND DESIGNING:**

- 2.21.1 The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labor. The bidder should submit the array layout drawings along with Shadow Analysis Report to PEC/Owner for approval.
- 2.21.2 PEC reserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.
- 2.21.3 The bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any. The bidder shall submit three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.

#### **2.22 DRAWINGS TO BE FURNISHED BY BIDDER AFTER AWARD OF CONTRACT**

- 2.22.1 The Bidder shall furnish the drawings the Award/Intent and obtain approval
  - 2.22.2 General arrangement and dimensioned layout
  - 2.22.3 Schematic drawing showing the requirement of SPV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
  - 2.22.4 Structural drawing along with foundation details for the structure
-





and wind load analysis.

- 2.22.5 Itemized bill of material for complete SPV plant covering all the components and associated accessories.
- 2.22.6 Layout of Solar Power Array
- 2.22.7 Shadow analysis of the roof

### **2.23 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.

### **2.24 DISPLAY BOARD**

- 2.24.1 The bidder has to display a board at the project site mentioning the following:
- 2.24.2 Plant Name, Capacity, Location, Type of Renewable Energy plant (Like solar wind etc.), Date of commissioning, details of tie-up with transmission and distribution companies, Power generation and Export FY wise.
- 2.24.3 Financial Assistance details from MNRE/Any other financial institution apart from loan. This information shall not be limited to project site but also be displayed at site offices/head quarter offices of the successful bidder
- 2.24.4 The size and type of board and display shall be approved by authorized representative before site inspection.
- 2.24.5 Please refer Annexure-D for IEC standards to be mandatorily adhered. List of compliances with parameters:



**Table 3: Parameters**

| PARAMETER                     | REFERENCE  | REQUIREMENT  |
|-------------------------------|--|--|
| <b>Service Conditions</b>     | Relevant regulation/order  | Compliance   |
| <b>Overall Grid Standards</b> | Central Electricity ACADEMY (Grid Standard) regulations 2010   | Compliance   |
| <b>Equipment</b>              | BIS / IEEE / IEC   | Compliance   |
| <b>Meters</b>                 | Central Electricity ACADEMY and Operation of (Installation Meters) Regulation 2013 & relevant regulations by Electricity Regulatory Commission | Compliance   |
| <b>Safety and Supply</b>      | Central Electricity ACADEMY (Measures of Safety and Electricity Supply) Regulation 2010  | Compliance   |
| <b>Harmonic Current</b>       | IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013                               | Harmonic current Injections from a generating Station shall not exceed the limits specified in IEEE 519.   |
| <b>Synchronization</b>        | IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013                               | Photovoltaic system must be equipped with a Grid frequency synchronization device. Every time the generating station is synchronized to the electricity system. It shall not cause voltage fluctuation greater than +/- 5% at point of connection. |
| <b>Voltage</b>                | IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013                               | The voltage-operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. Beyond a clearing time of 2 second, the photovoltaic system must isolate itself from the grid. |
| <b>Flicker</b>                | IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013                               | Operation of photovoltaic system should not cause voltage flicker in excess of the limits stated in IEC 61000 standards or other equivalent  |



| PARAMETER                          | REFERENCE  | REQUIREMENT  |
|------------------------------------|--|--|
|                                    |  | Indian standards, if any.  |
| <b>Frequency</b>                   | IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 | When the Distribution system frequency Deviates outside the specified condition (50.5 Hz on lower side), There should be over and under frequency trip function with a clearing time of 0.2 seconds. |
| <b>DC injection</b>                | IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 | Photovoltaic system should not inject DC power more than 0.5 % of full rated output at th interconnection point under any operating conditions.  |
| <b>Power Factor</b>                | IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 | While the output of the inverter is greater than 50% a lagging power factor of greater than 0.9 should operate.  |
| <b>Islanding and Disconnection</b> | IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 | There Photovoltaic system in the event of fault, voltage or frequency variations must isolate/disconnect itself within IEC standard on stipulated period   |
| <b>Overload and Overheat</b>       | IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 | The inverter should have the facility to automatically switch off in case of overload or overheating and should restart when normal conditions are restored  |
| <b>Paralleling Device</b>          | IEEE 519 and CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013 | Paralleling device of photovoltaic system shall be capable of withstanding 220% of the normal voltage at the interconnection point.  |



---

## **2.25 GENERAL REQUIREMENT FOR MAINTENANCE**

- 2.25.1 Deputation of qualified and experienced engineer/technicians (Diploma or higher Degree in Electrical/Electronic with 5 years minimum experience) approved by IAHE till the end of the O&M period at project site.
- 2.25.2 Monthly checks of the Modules, PCUs and BoS shall be carried out as a part of routine preventive and breakdown maintenance.
- 2.25.3 Bidder is required to have a service network in Himachal Pradesh, Jammu, Punjab or Chandigarh. The details of such service network need to be provided. L1 and Selected Bidder(s) who do not currently have a service network in above mentioned areas, will be required to open a service centre in Dharamshala, Himachal Pradesh within 30 days of issue of Letter of Acceptance (LOA).
- 2.25.4 Online Performance Monitoring, controlling, troubleshooting, maintaining of logs & records. A maintenance record register is to be maintained by the operator with effect from Commissioning to record the daily generation, regular maintenance work carried out as well as any preventive and breakdown maintenance along with the date of maintenance, reasons for the breakdown, duration of the breakdown, steps taken to attend the breakdown, etc.
- 2.25.5 For any issues related to operation & maintenance, a phone number shall be made available to plant owner to resolve within 72 hours. If not attended within such stipulated time, a complaint may be raised to IAHE, pursuant to which, a penalty of Rs. 1,000/- for full month or more shall be imposed for a system capacity above 10 kWp. If any of such instances for more than 2 times a year, then it may lead to penalty as decided by IAHE. Further, If the outage of the plant is more than 30 days continuously, then the 50% PBG amount shall be encased by IAHE and If the outage is exceeding more than 60 days than complete PBG amount shall be encased by IAHE. This will be applicable for entire period of contract of O&M as per the Scope of the RFP.



---

All the components should be kept clean. It should be ensured that all the components are fastened well at their due place Maintenance guidelines for various components viz. solar panels, inverter, wiring etc. are discussed below:

## **2.26 SOLAR PV MODULES**

Although the cleaning frequency for the panels will vary from site to site depending on soiling, it is recommended that

- 2.26.1 The panels are cleaned at least once every fifteen days.
- 2.26.2 Any bird droppings or spots should be cleaned immediately.
- 2.26.3 Use water and a soft sponge or cloth for cleaning.
- 2.26.4 Do not use detergent or any abrasive material for panel cleaning.
- 2.26.5 Isopropyl alcohol may be used to remove oil or grease stains.
- 2.26.6 Do not spray water on the panel if the panel glass is cracked or the back side is perforated.
- 2.26.7 Wipe water from module as soon as possible.
- 2.26.8 Use proper safety belts while cleaning modules at inclined roofs etc.
- 2.26.9 The modules should not be cleaned when they are excessively hot. Early morning is particularly good time for module cleaning.
- 2.26.10 Check if there are any shading problems due to vegetation or new building. If there are, make arrangements for removing the vegetation or moving the panels to a shade-free place.
- 2.26.11 Ensure that the module terminal connections are not exposed while cleaning; this poses a risk of electric shock.
- 2.26.12 Never use panels for any unintended use, e. g. drying clothes, chips etc.
- 2.26.13 Ensure that monkeys or other animals do not damage the panels.

## **2.27 CABLES AND CONNECTION BOXES**

- 2.27.1 Check the connections for corrosion and tightness.
- 2.27.2 Check the connection box to make sure that the wires are tight, and the water seals are not damaged.
- 2.27.3 There should be no vermin inside the box.



- 2.27.4 Check the cable insulating sheath for cracks, breaks or burns. If the insulation is damaged, replace the wire.
- 2.27.5 If the wire is outside the building, use wire with weather-resistant insulation.
- 2.27.6 Make sure that the wire is clamped properly and that it should not rub against any sharp edges or corners.
- 2.27.7 If some wire needs to be changed, make sure it is of proper rating and type.

## **2.28 INVERTER**

- 2.28.1 The inverter should be installed in a clean, dry, and ventilated area.
- 2.28.2 Remove any excess dust in heat sinks and ventilations. This should only be done with a dry cloth or brush.
- 2.28.3 Check that vermin have not infested the inverter. Typical signs of this include spider webs on ventilation grills or wasps' nests in heat sinks.
- 2.28.4 Check functionality, e.g. automatic disconnection upon loss of grid power supply, at least once a month.
- 2.28.5 Verify the state of DC/AC surge arrestors, cable connections, and circuit breakers.

## **2.29 SHUTTING DOWN THE SYSTEM**

- 2.29.1 Disconnect system from all power sources in accordance with instructions for all other components used in the system.
- 2.29.2 Completely cover system modules with an opaque material to prevent electricity from being generated while disconnecting conductors.
- 2.29.3 To the extent possible, system shutdown will not be done during day time or peak generation

## **2.30 Quality Certification, Standards and Testing for Grid-connected Rooftop Solar PV Systems/Power Plants**

Quality certification and standards for grid-connected rooftop solar PV systems are essential for the successful mass-scale implementation of this technology.

---

It is also imperative to put in place an efficient and rigorous monitoring mechanism, adherence to these standards. Hence, all components of grid-connected rooftop solar PV system/ plant must conform to the relevant standards and certifications given below:

**Table 4: Standards**

|   |   |
|---|---|
| <b>IEC 61215/ IS</b>                        | Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules  |
| <b>IEC 61701</b>                            | Salt Mist Corrosion Testing of Photovoltaic (PV) Modules  |
| <b>IEC 61853- Part 1/</b>                   | Photovoltaic (PV) module performance testing and energy   |
| <b>IS 16170: Part 1</b>                     | rating –: Irradiance and temperature performance measurements, and power rating   |
| <b>IEC 62716</b>                            | Photovoltaic (PV) Modules – Ammonia (NH <sub>3</sub> ) Corrosion Testing (As per the site condition like dairies, toilets)  |
| <b>IEC 61730-1,2</b>                        | Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction, Part 2: Requirements for Testing   |
| <b>IEC 62804</b>                            | Photovoltaic (PV) modules - Test methods for the detection of potential-induced degradation. IEC TS 62804-1:Part 1:Crystalline silicon (mandatory for applications where the system voltage is >600 VDC and advisory for installations where the system voltage is < 600 VDC) |
| <b>IEC 62759-1</b>                          | Photovoltaic (PV) modules – Transportation testing, Part 1:Transportation and shipping of module package units  |
| <b>IS/IEC 60947 (Part 1, 2 &amp; 3), EN</b> | General safety requirements for connectors, switches, circuit breakers (AC/DC):   |
| <b>50521</b>                                | a) Low-voltage Switchgear and Control-gear, Part 1: General rules   |
|   | b) Low-Voltage Switchgear and Control-gear, Part 2: Circuit Breakers  |
|   | c) Low-voltage switchgear and Control-gear, Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units  |
|   | d) EN 50521: Connectors for photovoltaic systems – Safety requirements and tests  |
| <b>IEC 60269-6</b>                          | Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy system surge Arrestors  |



|   |   |
|---|---|
| <b>IEC 62305-4</b>  | Lightening Protection Standard  |
| <b>IEC 60364-5-53/IS 15086-5 (SPD)</b>  | Electrical installations of buildings - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control  |
| <b>IEC 61643-1.854861111 Cables</b>   | Low-voltage surge protective devices - Part 11: Surge   |
| <b>IEC 60227/IS 694, IEC 60502/IS 1554(Part 1 &amp; 2)/IEC69947 BS EN 50618</b> | General test and measuring method for PVC (Polyvinyl chloride) insulated cables (for working voltages up to and including 1100 V, and UV resistant for outdoor installation) Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC Cables Earthing /Lightning |
| <b>IEC 62561 Series (Chemical Earthing)</b>                                     | IEC 62561-1   |
|   | Lightning protection system components (LPSC) - Part 1:   |
|   | Requirements for connection components  |
|   | IEC 62561-2   |
|   | Lightning protection system components (LPSC) - Part 2:   |
|   | Requirements for conductors and earth electrodes  |
|   | IEC 62561-7   |
|   | Lightning protection system components (LPSC) - Part 7:   |
| Requirements for earthing enhancing compounds Junction Boxes                    |   |
| <b>IEC 60529</b>  | Junction boxes and solar panel terminal boxes shall be of the thermo-plastic type with IP 65 protection for outdoor use, and IP 54 protection for indoor use  |
|   | <b>Energy Meter</b>   |
|   | and 2 — Specification (with Import & Export/Net energy  |
|   | (measurements)  |
|   | <b>Solar PV Roof Mounting Structure</b>   |
| <b>IS 2062/IS 4759</b>  | Material for the structure mounting   |

\*Note- Equivalent standards may be used for different system components of the plants.

In case of clarification following person/agencies may be contacted.

- Ministry of New and Renewable Energy (Govt. of India)
- National Institute of Solar Energy
- The Energy & Resources Institute
- TUV Rheinland





### **3. General Conditions of Contract (GCC)**

#### **3.1. Governing Law**

The Contract shall be governed by and interpreted in accordance with the laws of India.

#### **3.2. Project Implementation Schedule, Deliverables and Payment Terms**

##### **3.2.1 Deliverables & Payment Schedule**

80 % of Payment will be made location wise on installation and commissioning on per watt basis (capacity installed and commissioned in watts multiplied by the per watt price quoted).

20% of Payment shall be made in equal instalments of 4% each for five years on submission of the annual O&M report.

Operation and maintenance will start on successful completion of installation and commissioning certified by the UPPCL and authorized representative of IAHE.

##### **3.2.2 Payment Terms**

1. 10 % advance payment shall be made within 15 days of signing the contract against a bank guarantee equal to the amount of advance. The advance amount shall be recovered at 20% of the certified amount of subsequent invoices. The advance guarantee will be returned on full recovery of the advance amount.
2. The successful Bidder shall raise monthly invoices on milestone basis as defined in Cl. 3.2.1., during the project implementation period on or before the 7<sup>th</sup> day of the following month. During the operation & maintenance period, the invoices shall be submitted annually.
3. Payments shall be made by the ACADEMY within thirty (30) days after submission of the invoice for the amount certified on satisfactory quality inspection and verification by the ACADEMY's Official and on the conformity on the Goods/ Products/ Services/ Solutions supplied as per the agreed specifications.
4. Payment shall be made in Indian Rupees by RTGS/ NEFT on Bank in the name of the Successful bidder.



5. All remittance charges shall be borne by the Successful Bidder.
6. In case of disputed items, the disputed amount shall be withheld and shall be paid only after settlement of the dispute.
7. Any liquidated damages, for delay and non-performance, as mentioned in this RFP document, shall be deducted from the due payments of the respective milestones.
8. Indirect taxes and levies, as applicable, shall be deducted, as per the prevalent rules and regulations.
9. Price adjustment is not applicable in this contract/RFP.
10. It is the responsibility of the bidders to quote for and provide all the Hardware and Software for meeting all the requirements of the RFP. In case during evaluation, it is found that certain Hardware or Software which is critical for meeting the requirement of this RFP and has not been quoted as part of financial bid, the bid can be rejected as non-responsive. Additionally, if after the award of contract, it is felt that additional Hardware or Software are required for meeting the RFP requirement and the same has not been quoted by the Successful Bidder, the Successful Bidder shall provide all such additional Hardware or Software at no additional cost to ACADEMY.

### **3.3. Confidential Information**

- a) ACADEMY and the Successful Bidder shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract.
- b) The Successful Bidder shall not use the documents, data, and other information received from ACADEMY for any purpose other than the services required for the performance of the Contract.

### **3.4. Change in Laws and Regulations**

Unless otherwise specified in the Contract, if after the date of the Invitation for bids, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed that subsequently affects the



---

Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Successful Bidder has thereby been affected in the performance of any of its obligations under the Contract.

### **3.5. Force Majeure**

- a) The Successful Bidder shall not be liable for termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- b) For purposes of this Clause, Force Majeure means an event or situation beyond the control of the Successful Bidder that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Successful Bidder. Such events may include, but not be limited to, acts of ACADEMY in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
- c) If a Force Majeure situation arises, the Successful Bidder shall promptly notify ACADEMY in writing of such condition and the cause thereof. Unless otherwise directed by ACADEMY in writing, the Successful Bidder shall continue to perform its obligations under the Contract as far as it is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

### **3.6. Settlement of Disputes**

1. Performance of the contract is governed by the terms and conditions of the contract, in case disputes arise between the parties regarding any matter under the contract, either Party of the contract may send a written Notice of Dispute to the other party. The Party receiving the Notice of Dispute will consider the Notice and respond to it in writing within 30 (thirty) days after the receipt. If that party fails to respond within 30 (thirty) days, or the dispute cannot be amicably settled within 60 (sixty) days following the response of that party, clause GCC 3.6 (2) shall become applicable.
2. **Arbitration:**
  - a) In the case of dispute arising, upon or in relation to, or in connection with the contract between ACADEMY and the Successful Bidder, which has not been settled amicably, any party can refer the dispute for Arbitration under the (Indian) Arbitration and Conciliation (Amendment) Act, 2015. Such disputes shall be referred to an Arbitral Tribunal consisting of three arbitrators, one each to be appointed by the ACADEMY and the Successful Bidder, the third arbitrator shall be chosen by the two arbitrators so appointed by the parties and shall act as Presiding Arbitrator. In case of failure of the two arbitrators, appointed by the parties to reach a consensus regarding the appointment of the third



arbitrator within a period of 30 (thirty) days from the date of appointment of the two arbitrators, the Presiding arbitrator shall be appointed by the ADG & Director, IAHE. The Arbitration and Conciliation (Amendment) Act, 2015 and any statutory modification or re-enactment thereof, shall apply to these arbitration proceedings.

- b) Arbitration proceedings shall be held in Dharamshala, Himachal Pradesh, India and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
- c) The decision of the majority of arbitrators shall be final and binding upon both parties. The expenses of the arbitrators as determined by the arbitrators shall be shared equally by ACADEMY and the Successful Bidder. However, the expenses incurred by each party in connection to the preparation, presentation shall be borne by the party itself. All arbitration awards shall be in writing and shall state the reasons for the award.

### **3.7. Time of Completion**

- 1. The time of completion of the works for the implementation of the project as per the deliverable in Clause 3.2.1 shall be **Two months** from the date of signing of contract. The operation and maintenance period shall be 60 months from the date of completion of the entire scope of work on which a completion certificate shall be issued. The contract period shall be from the date of signing the contract to the completion of the Operation and Maintenance of the entire scope of works.
  - 2. The successful bidder shall submit in two copies a detailed work programme/schedule for the project implementation within 15 days of signing the contract, with respect to each location of building.
  - 3. Monthly progress reports shall be submitted in two copies to the ACADEMY showing the work executed against the schedule during the implementation of the project and quarterly report during the operation & maintenance period. The reports shall be submitted on or before the 5<sup>th</sup> day of the following month.
  - 4. If at any time during performance of the Contract, the Successful Bidder encounters condition impeding timely delivery of the Services, the Successful Bidder shall promptly notify ACADEMY in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Successful Bidder notice, ACADEMY shall evaluate the situation and may at its discretion extend the Successful Bidder time for performance in writing.
-



5. Delay by the Successful Bidder in the performance of its Delivery and Completion obligations shall render the bidder liable for disqualification for any further bids in ACADEMY and penalty levied as per Cl.3.10.1 unless an extension of time is agreed mutually.

### **3.8. Termination**

1. ACADEMY may, without prejudice to any other remedy for breach of Contract, terminate this Contract in case of the occurrence of any of the events specified in paragraphs (1) to (10) of this GCC Clause 3.8. In such an occurrence, ACADEMY shall give not less than 30 (thirty) days' written notice of termination to the Successful Bidder.
  2. If the Successful Bidder does not remedy a failure in the performance of its obligations under the Contract, within 15 (fifteen) days after being notified or within any further period as ACADEMY may have subsequently approved in writing.
  3. If the Successful Bidder becomes insolvent or goes into liquidation, or receiver is appointed whether compulsory or voluntary.
  4. If, in the judgment of ACADEMY, the Successful Bidder has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
  5. If, as the result of Force Majeure, the Successful Bidder is unable to perform a material portion of the Services for a period of not less than 60 (sixty) days.
  6. If the Successful Bidder submits to the ACADEMY a false statement which has a material effect on the rights, obligations or interests of ACADEMY.
  7. If the Successful Bidder places itself in a position of conflict of interest or fails to disclose promptly any conflict of interest to ACADEMY.
  8. If the Successful Bidder fails to provide the quality services as envisaged under this Contract, ACADEMY may make judgment regarding the poor quality of services, the reasons for which shall be recorded in writing. ACADEMY may decide to give one chance to the Successful Bidder to improve the quality of the services.
  9. If the Successful Bidder fails to comply with any final decision reached as a result of arbitration proceedings.
-



10. If ACADEMY, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.
11. In the event ACADEMY terminates the Contract in whole or in part, pursuant to this GCC Clause 3.8, ACADEMY may procure, upon such terms and in such manner as it deems appropriate, services similar to those undelivered or not performed, and the Successful Bidder shall be liable to ACADEMY for any additional costs for such similar services. However, the Successful Bidder shall continue performance of the Contract to the extent not terminated.



### 3.9. Payment upon Termination

Upon termination of this Contract pursuant to GCC Clauses 3.8, the ACADEMY shall make the following payments to the Successful Bidder:

- a) If the Contract is terminated pursuant to GCC Clause 3.8 (10), remuneration for Services satisfactorily performed prior to the effective date of termination.
- b) If the agreement is terminated pursuant of GCC Clause 3.8 (1), (2), (3), (4), (5), (6), (7), (8) and (9), the Successful Bidder shall not be entitled to receive any agreed payments upon termination of the contract. However, the ACADEMY may consider making a payment for the part satisfactorily performed on the basis of *quantum merit* as assessed by it, if such part is of economic utility to the ACADEMY. The ACADEMY may also impose liquidated damages as per the terms of this RFP. The Successful Bidder will be required to pay any such liquidated damages to ACADEMY within 30 (thirty) days of termination date.

### 3.10. Liquidated Damages

1. In case of failure to complete the work/ supply in time the penalty shall be levied @ 0.50% per week or part thereof of the contract price subject to maximum of 10% of the total project cost. If the total Penalty exceeds beyond 10%, it would be considered as non-conformance to the quality of Services and may lead to termination of the Contract and ACADEMY may on their sole discretion cancel the order.
2. The service levels during O&M are to be established as per requirements defined under Section 2 of this agreement. The Successful Bidder shall monitor and maintain the stated service levels to provide quality service to the ACADEMY. Any adverse certification by the competent ACADEMY will attract deductions in the O&M payments, at the discretion of IAHE.

### 3.11. Other Conditions

- a) **The Successful Bidder should comply with all applicable laws and rules of Government of India including Resolution no.23/27/2017-R&R dated 03.08.2017 and Amended vide resolution dated 14.06.2018 issued by the Ministry regarding competitive bidding process for procurement of Power from Grid connected Solar PP Power Projects under PPA.**
- b) The support executive(s)/ supervisor(s)/ staffs deployed by the Successful Bidder shall not have right to demand for any type of permanent employment with ACADEMY or its allied Offices.



- 
- c) ADG & Director, IAHE reserves the right to withdraw/ relax any of the terms and condition mentioned in the RFP, so as to overcome the problem encountered at a later stage for the smooth and timely execution of the project.

### **3.13. Risk Purchase**

In case the Successful Bidder fails to deliver the project due to inadvertence, error, collusion, incompetency, termination, misconstruction or illicit withdrawal, the ADG & Director, IAHE reserves the right to procure the same or similar services from the alternate sources at risk, cost and responsibility of the Successful Bidder.





## Annexure 1- Guidelines for Pre-Qualification Proposal

### Annexure 1.1 - Check-list for the Pre-Qualification Proposal

| S.No. | List Of Document   | File Name | Submitted(Y/N)                                 | Description |
|-------|--|-----------|--|-------------|
| 1     | Proof of Tender Fee and EMD submitted  |           |  |             |
| 2     | Bid Covering Letter As per format provided at Annexure 1.2   |           | Reference No: Date of Letter:                  |             |
| 3     | Bidders' Particulars As per format provided at Annexure 1.3  |           | Name of bidder(s):                             |             |
| 4     | Power of Attorney in favor of Authorized signatory As per format provided at Annexure 6  |           | Date of PoA:Name of Authorized Person:         |             |
| 5     | Copy of Certificate of Incorporation /Registration under Companies Act, 1956/2013 or corresponding Act in abroad   |           | Registration Number:<br>Date of Incorporation: |             |
| 6     | Copy of Certificate from the Statutory Auditor for the last 3 (Three) financial years.   |           | Year-wise Details<br>Turnover                  |             |
| 7     | Valid copy of the ISO 9001:2008 or higher certification  |           | Issuing By:<br>Issuing Date:<br>Validity Date: |             |
| 8     | Declaration for Not blacklisted by Central/State Government/ PSU entity in India or similar agencies globally for unsatisfactory past performance, corrupt, fraudulent or any other unethical business practices as on date of submission of the proposal. |           | Reference No: Date of Letter:                  |             |
| 9     | Valid Copy of PAN  |           | Ref No.  |             |
| 10    | Valid copy of GSTIN registration   |           | Ref No.<br>Date                                |             |



---

## Annexure 1.2 - Pre-Qualification Cover Letter

(To be submitted on the letterhead of the bidder)

Date:

To [REDACTED]  
**ADG & Director(IAHE)**  
**A-5, Sector-62, Noida (UP)201301**

**Subject:** Bid for “RFP for the Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at A-5, Sector-62, Noida (UP) under PPA model”

**RFP Reference No: IAHE/04/Green Initiatives/2018 Dated: 13.08.2018**

Dear Sir,

With reference to your “**RFP for the Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at IAHE Campus, Noida under PPA model**”, we hereby submit our Prequalification Proposal, Technical Proposal, and Financial Proposal, for the same.

We hereby declare that:

- a. We hereby acknowledge and unconditionally accept that the ACADEMY can at its absolute discretion apply whatever criteria it deems appropriate, not just limiting to those criteria set out in the RFP and related documents, in short listing of bidder for providing services.
- b. We have submitted EMD of INR [ ] in the form of [.....] and Tender fee of INR [ ] Online through e-Tendering Portal ([www.hpeproc.gov.in](http://www.hpeproc.gov.in)),
- c. We hereby declare that all information and details furnished by us in the bid are true and correct, and all documents accompanying such application are true copies of their respective originals.
- d. We agree to abide by our offer for a period of 180 days from the date of opening of pre-qualification bid prescribed by **ACADEMY** and that we shall remain bound by a communication of acceptance within that time.
- e. We have carefully read and understood the terms and conditions of the RFP and the conditions of the contract applicable to the RFP. We do hereby undertake to provision as per these terms and conditions.
- f. In the event of acceptance of our bid, we do hereby undertake:



- 
- i. To supply the products and commence services as stipulated in the RFP document
  - ii. To undertake the project services for entire contract period from the date of signing of the contract as mentioned in the RFP document.
  - iii. We affirm that the prices quoted are inclusive of design, development, delivery, installation, commissioning, training, providing facility management and handholding support, and inclusive of all out of pocket expenses, taxes, levies discounts etc.
- g. We do hereby undertake, that, until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and notification of award of contract, shall constitute a binding contract between us.
- h. We understand that the **ACADEMY** may cancel the bidding process at any time and that **ACADEMY** is not bound to accept any bid that it may receive without incurring any liability towards the bidder.
- i. We fully understand and agree to comply that on verification, if any of the information provided in our bid is found to be misleading the selection process, we are liable to be dismissed from the selection process or termination of the contract during the project, if selected to do so

In case of any clarifications please contact \_\_\_\_\_ email at

\_\_\_\_\_  
Thanking you,  
Yours sincerely,

(Signature of the Bidder/ Lead Member)

Printed Name

Designation

**Seal**

Date:

Place:

Business Address:



### **Annexure 1.3 - Format to share Particulars of the Bidder**

The Table below provides the format in which general information about the bidder must be furnished.

| <b>S No</b> | <b>Information</b>   | <b>Details</b> |
|-------------|--|----------------|
| 1.          | Name of bidder   |                |
| 2.          | Address and contact details of bidder  |                |
| 3.          | Firm Registration Number and Year of Registration  |                |
| 4.          | Web Site Address   |                |
| 5.          | Status of Company (Public Ltd., Pvt. Ltd., LLP etc.)   |                |
| 6.          | GST Registration No.   |                |
| 7.          | Permanent Account Number (PAN)   |                |
| 8.          | Revenue for the last 3 years (Year wise)   |                |
| 9.          | Name, Designation and Address of the contact person to whom all references shall be made regarding this RFP: |                |
| 10.         | Telephone number of contact person:  |                |
| 11.         | Mobile number of contact person:   |                |
| 12.         | Fax number of contact person:  |                |
| 13.         | E-mail address of contact person:  |                |

Please submit the relevant proofs for all the details mentioned above along with your bid response

Authorized Signatory

Name

Seal



---

## **Annexure 1.4 - Consortium Agreement**

### **DRAFT MEMORANDUM OF UNDERSTANDING EXECUTED BY MEMBERS OF THE CONSORTIUM**

*[On Non-judicial stamp paper duly attested by notary public]*

This Memorandum of Understanding (MoU) entered into this day of [Date] [Month] 2018 at [Place] among \_\_\_\_\_ (hereinafter referred to as "\_\_\_\_") and having office at [Address], India, as Party of the First Part and \_\_\_\_\_ (hereinafter referred to as "\_\_\_\_") and having office at [Address], as Party of the Second Part and \_\_\_\_\_ (hereinafter referred to as "\_\_\_\_") and having office at [Address], as Party of the Third Part.

The parties are individually referred to as Party and collectively as Parties.

WHEREAS IAHE, has issued a Request for Proposal dated [Date] (RFP) from the applicants interested in **"RFP for the Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at IAHE Campus, Noida under PPA model"**

AND WHEREAS the Parties have had discussions for formation of a Consortium for bidding for the said Project and have reached an understanding on the following points with respect to each of the Parties' rights and obligations towards each other and their working relationship.

BASIS THE MUTUAL UNDERSTANDING OF THE PARTIES, IT IS HEREBY AGREED AND DECLARED AS FOLLOWS:

- i. The purpose of this Agreement is to define the principles of collaboration among the Parties to:
  - a. Submit a response jointly to bid for the **"RFP for Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Government Buildings/Spaces at IAHE Campus, Noida under PPA model"** as a Consortium.
  - b. Sign Contract in case of award.
  - c. Provide and perform the supplies and services which would be ordered by the ACADEMY pursuant to the Contract.
- ii. This Agreement shall not be construed as establishing or giving effect to any legal entity such as, but not limited to, a company, a partnership, etc. It shall relate solely towards the ACADEMY for **"RFP for Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Government Buildings/Spaces at IAHE Campus, Noida under PPA model"** for and related execution works to be performed pursuant to the Contract and shall not extend to any other activities.



- iii. The Parties shall be jointly and severally responsible and bound towards the ACADEMY for the performance of the works in accordance with the terms and conditions of the RFP document, and Contract.
- iv. ----- (Name of Party) shall act as Lead Member of the Consortium. As such, it shall act as the coordinator of the Party's combined activities and shall carry out the following functions:
  - a. To ensure the technical, commercial and administrative co-ordination of the work package
  - b. To lead the contract negotiations of the work package with the ACADEMY.
  - c. The Lead Member is authorized to receive instructions and incur liabilities for and on behalf of all Parties.
  - d. In case of an award, act as channel of communication between the ACADEMY and the Parties to execute the Contract
  - v. That the Parties shall carry out all responsibilities in terms of the Project Agreement.
  - vi. That the broad roles and the responsibilities of each Party as per each member's field of expertise at each stage of the bidding shall be as below:

Party A: \_\_\_\_\_

Party B: \_\_\_\_\_

- vii. That the proposed administrative arrangements (organization chart) for the management and execution of the Project shall be as follows:
- viii. That the profit and loss sharing ratio shall be \_\_\_\_\_
- ix. That the Parties agree that all the members of the Consortium shall be jointly and severally liable for all obligations in relation to the Contract until the completion of the Project in accordance with the Contract;
- x. Parties affirm that they shall implement the Project in good faith and shall take all necessary steps to see the Project through expeditiously.
- xi. That this MoU shall be governed in accordance with the laws of India and courts in Himachal Pradesh shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein.

In witness whereof the Parties affirm that the information provided is accurate and true and have caused this MoU duly executed on the date and year above mentioned.

(Party of the first part) (Party of the second part) (Party of the third part)

Witness:

- i. \_\_\_\_\_
- ii. \_\_\_\_\_



## Annexure 2. – Guidelines for Technical Proposal

### Annexure 2.1 - Check-list for the documents to be included in the Technical Proposal

| S No. | List of Documents  | File Name | Submitted (Y/N) | Description                  |
|-------|--|-----------|-----------------|------------------------------|
| 1     | Technical bid Covering Letter  |           |                 | Reference No: Date of Letter |
| 2     | Project citation report to support that the Sole Bidder or either member of the consortium have successfully executed similar works in last 3 (Three) financial years. |           |                 | As per Annexure 2.3          |
| 3     | OEM Authorization Form along with certified true copy of power of attorney   |           |                 | OEM Name:<br>Date:           |
| 4     | Summary list of Projects   |           |                 |                              |



---

---

## **Annexure 2.2. - Technical Bid Cover Letter**

(To be submitted on the Letterhead of the bidder/ lead partner in case of co)

Date: dd/mm/yyyy

To                       
**ADG & Director(IAHE)**  
**A-5, Sector-62, Noida (UP)201301**

**Sub.:** Request for Proposal for “RFP for Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Government Buildings/Spaces at IAHE Campus, Noida under PPA model”

RFP Reference No: **IAHE/04/Green Initiatives/2018**                      **Date- 13.08.2018**

Dear Sir/ Ma'am,

Having examined the RFP, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to provide the professional services as required and outlined in the RFP for “RFP for Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Government Buildings/Spaces at IAHE Campus, Noida under PPA model”.

We attach hereto the technical response as required by the RFP, which constitutes our proposal. We undertake, if our proposal is accepted, to adhere to the implementation plan (Project schedule) for providing Professional Services in “RFP for Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Government Buildings/Spaces at IAHE Campus, Noida under PPA model” put forward in RFP or such adjusted plan as may subsequently be mutually agreed between us and IAHE or its appointed representatives.

If our proposal is accepted, we will obtain a Performance Bank Guarantee issued by a nationalized bank in India, for a sum of equivalent to 10% of the contract value for the due performance of the contract.





We agree for unconditional acceptance of all the terms and conditions set out in the RFP document and also agree to abide by this tender response for a period of 180 (one hundred and eighty) days from the date of submission of bid and it shall remain binding upon us with full force and virtue, until within this period a formal contract is prepared and executed, this tender response, together with your written acceptance thereof in your notification of award, shall constitute a binding contract between us and IAHE.

We confirm that the information contained in this proposal or any part thereof, including its exhibits, schedules, and other documents and instruments delivered or to be delivered to IAHE is true, accurate, and complete. This proposal includes all information necessary to ensure that the statements therein do not in whole or in part mislead IAHE as to any material fact.

We agree that you are not bound to accept any tender response you may receive. We also agree that you reserve the right in absolute sense to reject all or any of the products/ services specified in the tender response.

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/ firm/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Date:  
 (Signature)  
 (Name)  
 (In the capacity of )  
 [Seal / Stamp of bidder]  
 Witness Signature:  
 Witness Name:  
 Witness Address:

-----  
 ----- **CERTIFICATE AS TO AUTHORISED**  
**SIGNATORIES**

I \_\_\_\_\_, the Company Secretary of \_\_\_\_\_, certify that \_\_\_\_\_ who signed the above bid is authorized to do so and bind the company by ACADEMY of its board/ governing body.

Date:  
 Signature:  
 (Company Seal) (Name)



---

---

### **Annexure 2.3. - Format to Project Citation**

| <b>S. No</b> | <b>Item</b>                              | <b>Details</b> | <b>Attachment Ref. Number</b> |
|--------------|--|----------------|-------------------------------|
| <b>1</b>     | Name of the Project                      |                |                               |
| <b>2</b>     | Date of Work Order                       |                |                               |
| <b>3</b>     | Client Information                       |                |                               |
| <b>4</b>     | Scope of Work                            |                |                               |
| <b>5</b>     | Capacity                                 |                |                               |
| <b>6</b>     | Contract Value                           |                |                               |
| <b>7</b>     | Actual Value at which work was completed |                |                               |
|              | Completion Date                          |                |                               |

**The above format shall be used to furnish previous project information.**



---

---

## **Annexure 2.4. - Format for OEM Authorization**

(This form has to be provided by the OEMs of the products proposed)

Date:

To

**ADG & Director(IAHE)**

**A-5, Sector-62, Noida (UP)201301**

RFP Ref: **IAHE/04/Green Initiatives/2018**      **Date- 13.08.2018**

Dear Sir/ Ma'am,

We \_\_\_\_\_, (name and address of the manufacturer) are established and reputed manufacturers of \_\_\_\_\_ having factories at \_\_\_\_\_(addresses of manufacturing / development locations) do hereby authorize M/s

\_\_\_\_\_ (name and address of the bidder) to bid, negotiate and conclude the contract with you against the above mentioned RFP for the equipment/ software manufactured/ developed by us in adherence to the requirements of the RFP.

We herewith certify that the above mentioned equipment/ software products are not end of the life and we hereby undertake to support these equipment/ software for the minimum duration of 3 years from the date of from Go-Live (as stated in RFP).

Yours faithfully,

(Name)

(Name of Producers)

*Note: This letter of ACADEMY should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. The Bidder should provide this authorization along with the certified true copy (by the authorized signatory of the bidder) of the aforesaid power of attorney.*





---

## **Annexure 3-Guidelines For Financial Proposal**

### **Anexure 3.1 - Financial Proposal Cover Letter**

(To be submitted on the Letterhead of the bidder/ lead partner)

Date: dd/mm/yyyy

**To** [REDACTED]  
**ADG & Director(IAHE)**  
**A-5, Sector-62, Noida (UP)201301**

**Subject: Bid for “RFP for Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Government Buildings/Spaces at IAHE Campus, Noida under PPA model”**

**RFP Reference No: IAHE/04/Green Initiatives/2018**      **Date- 13.08.2018**

Dear Sir,

1. We, the undersigned bidder, having read and examined in detail, the Bidding Document, the receipt of which is hereby duly acknowledged, offer to supply/ work in conformity with the captioned bidding document.
2. We undertake that the prices are in conformity with the specifications prescribed. The quote/ price are inclusive of all cost likely to be incurred for executing this work. The prices are inclusive of all type of government taxes/ duties in the financial bid.
3. We undertake, if our bid is accepted, to deliver the goods and services in accordance with the deliverables schedule specified in section 3.2.1. of the RFP.
4. We undertake to successfully operationalize the Project as per scope of work mentioned in the RFP document.
5. We have examined and have no reservations to the Bidding Documents, including any corrigendum/ addendums issued by IAHE;
6. We understand that any additional hardware and software required to make the Project operational shall have to be provided by us.
7. We hereby declare that in case the contract is awarded to us, we shall submit the contract performance bank guarantee as prescribed in the RFP.
8. We agree to abide by this bid for a period of 180 days from the last date of bid submission and it shall remain binding upon us and may be accepted at any time before the expiry of that period.



9. Until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and your notification of award shall constitute a binding Contract between us.
10. We hereby declare that our bid is made in good faith, without collusion or fraud and the information contained in the bid is true and correct to the best of our knowledge and belief.
11. We understand that you are not bound to accept the lowest or any bid you may receive. We agree to all the terms and conditions as mentioned in the RFP document and declare that we have not submitted any deviations in this regard.

In witness thereof, we submit this bid under and in accordance with the terms of the RFP document.

Date: \_\_\_\_\_ Yours faithfully,  
Place: \_\_\_\_\_

(Signature of the Authorised signatory)  
(Name and designation of the of the Authorised signatory)

Name and seal of bidder/ lead partner



### Annexure 3.2 - Financial Proposal Format & Instructions

RFP Reference No: **IAHE/04/Green Initiatives/2018**      Date- **13.08.2018**  
**Cost for Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at IAHE Campus, Noida under PPA model”.**

| Sr. No. | Description  | Unit | Capacity | Rate (Rs. per kWp) | Total Project cost (Rs.) |
|---------|--|------|----------|--------------------|--------------------------|
| 1       | Design, Manufacturing, Supply, Erection, Testing & Commissioning including trial run Operation, Operation & maintenance for a period of 5 Years Including Power Evacuation System and cost of replacement of all the parts, covered under Warranty period for a period of 5 years from the date of commissioning of Roof top Solar PV system in. | kWp  | 10       |                    |                          |

**Note: Project cost shall be inclusive of all taxes and statutory payments**

#### **Instructions:**

- a) IAHE does not guarantee the quantity for the particular line items given above. The actual quantity for the given items may vary. The payment shall be made based on unit cost quoted for the particular item on actual work/ item is undertaken/ supplied.
- b) All items provided should be under Insurance. The Insurance should be for entire duration of the Project including operation and maintenance period and comprehensive covering damages for Theft, Fire, Natural Calamities, Riots and Terrorists activities etc as per clause 1.9.
- c) All the prices are to be entered in Indian Rupees ONLY



- d) IAHE reserves the right to ask the Bidder to submit proof of payment against any of the taxes, duties, levies indicated.
- e) Rates to be quoted in considering that all the items and services to be provided at the location provided by IAHE.
- f) IAHE shall take into account all Taxes, Duties and Levies for the purpose of evaluation
- g) The bidder needs to account for all Out of Pocket expenses, no additional payment shall be made by IAHE whatsoever.
- i) The bidder should refer the RFP document for details on the technical requirements of the system and the benchmark specifications for the items mentioned in the financial formats.
- j) Any component/ fixtures/ ancillary/ adjunct to the specified item shall be deemed to have been included in the unit rates quoted above.





---

---

**Annexure 4- Format for Declaration by the bidder for not being Blacklisted / Debarred**

(To be submitted on the Letterhead of the bidder)

Date: dd/mm/yyyy

To

To                       
**ADG & Director(IAHE)**  
**A-5, Sector-62, Noida (UP)201301**

**Subject:** Declaration for not being debarred/ black-listed by Central Government/ any State Government/ Public Sector Undertaking in India or similar agencies globally as on the date of submission of the bid

**RFP Reference No:** IAHE/04/Green Initiatives/2018 Date- 13.08.2018

Dear Sir/ Ma'am,

I, authorized representative of \_\_\_\_\_, hereby solemnly confirm that the \_\_\_\_\_ ("Company") is not debarred/ black -listed by Central Government/ any State Government/ Public Sector Undertaking in India or similar agencies globally for unsatisfactory past performance, corrupt, fraudulent or any other unethical business practices or for any other reason as on last date of submission of the bid.

In the event of any deviation from the factual information/ declaration, IAHE reserves the right to reject the bid or terminate the Contract without any compensation to the Company.

Thanking you,  
Yours faithfully,

\_\_\_\_\_  
Signature of Authorized Signatory (with official seal)

Date:  
Name:  
Designation:  
Address:  
Telephone & Fax:  
E-mail address:



---

---

**Annexure 5 - Format of sending pre-bid queries**

**RFP Reference No: IAHE/04/Green Initiatives/2018 Date- 13.08.2018**

| Bidder's Request For Clarification  |            |          |   |  |
|---|------------|----------|---|--|
| Name and complete official address of Organization submitting query/request for clarification |            |          | Telephone, Fax and E-mail of the organization<br>Tel:<br>Fax:<br>Email: |  |
| S.No.   | Clause No. | Page No. | Content Of RFP Requiring Clarification                                  | Change Requested/ Clarification required |
| 1   |            |          |   |  |
| 2   |            |          |   |  |

Signature:

Name of the Authorized signatory:

Company seal:

Date and Stamped

**Note: Bidder(s) are requested to send the queries in PDF with Sign and Company Seal and also in MS Excel for making consolidation process easy.**



---

## Annexure 6- Power of Attorney

(On a non-judicial stamp paper of appropriate value duly attested by notary public)

Know all men by these presents, we (name and address of the registered office of the Sole Applicant) do hereby constitute, appoint and authorize Mr./ Ms. \_\_\_\_\_ R/o

\_\_\_\_\_ who is presently employed with us and holding the position of \_\_\_\_\_, to do in our name and on our behalf, all such acts, deeds and things, necessary in connection with or incidental to the bid for “**Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Government Buildings/Spaces at IAHE Campus, Noida under PPA model**” (the “Project”), including signing and submission of all documents and providing information/ responses to IAHE and representing us 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)

(Name, Title and Address)

Accept

..... (Signature)

(Name, Title and Address of the Attorney)

Notes:

1. To be executed by the Applicant.
2. The mode of execution of Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
3. Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a resolution/ Power of attorney in favour of the Person executing this Power of Attorney for the delegation of power hereunder on behalf of the bidder.



#### 4.18

#### POWER OF ATTORNEY FOR LEAD MEMBER BY THE CONSORTIUM MEMBER

(On Non- Judicial Stamp Paper of appropriate Value to be purchased in the name of Consortium)

Know All Men By These Presents That We, the Members whose details are given hereunder..... have formed a Consortium and having our Registered Office(s)/ Head Office(s) at ..... (here in after called the 'Consortium' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) do hereby constitute, nominate and appoint M/s..... having its Registered/ Head Office at ..... as our duly constituted lawful Attorney (hereinafter called "Lead Member") to exercise all or any of the powers for and on behalf of the CONSORTIUM to participate in bid for "**Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Government Buildings/Spaces at IAHE Campus, Noida under PPA model**", as per the Scope of Work stipulated therein for which bids have been invited by the IAHE, to undertake the following acts:

- (i) To submit proposal, participate and correspond in respect of the aforesaid Bid – Specification of IAHE on behalf of the "Consortium".
- (ii) To negotiate with IAHE the terms and conditions for award of the contract pursuant to the aforesaid bid and to sign the contract with the IAHE for and on behalf of the "CONSORTIUM".
- (iii) To do any other act or submit any document related to the above.
- (iv) To receive, accept and execute the contract for and on behalf of the "Consortium".
- (v) To submit the Performance Bank Guarantee in the prescribed format and as per terms of the Contract.



It is clearly understood that the Lead Member shall ensure performance of the Contract and if one or both the members fail to perform their respective portion of the Contract, the same shall be deemed to be a default by all the members.

It is expressly understood that this power of Attorney shall remain valid, binding and irrevocable till completion of the Contract period i.e., \_\_\_\_\_ from the date of execution of the Contract.

The Consortium hereby agrees and undertakes to ratify and confirm all the whatsoever the said Lead Member quotes in the bid, negotiates and signs the Contract with the IAHE and/ or proposes to act on behalf of the Consortium by virtue of this Power of Attorney and the same shall bind the Consortium members as if done by itself.

In Witness Whereof, the members constituting the Consortium as aforesaid have executed these present on this ..... day of .....Two Thousand Eighteen.

for and on behalf of the member of the  
Consortium 1.....

Accept

..... (Signature)

(Name, Title and Address of the Attorney)

Notes:

1. The mode of execution of Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
2. Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a resolution / Power of attorney in favour of the Person executing this Power of Attorney for the delegation of power hereunder on behalf of the executant(s).



---

## Appendix 7 – Format for Bank Guarantee for Earnest Money Deposit

To [REDACTED]  
**ADG & Director(IAHE)**  
**A-5, Sector-62, Noida (UP)201301**

Dear Sir/ Ma'am,

BANK GUARANTEE for Earnest Money Deposit – For <Project Name>

Whereas <<Name of the bidder>> (hereinafter called 'the Bidder') has submitted the bid to IAHE for "**Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at IAHE Campus, Noida under PPA model**" (hereinafter called "the bid").

Know all Men by these presents that we <<... >> having our office at <<Address>> (hereinafter called "the Bank") are bound to **IAHE** (hereinafter called "the ACADEMY") for a sum of Rs. <<Amount in figures>> (Rupees <<Amount in words>> only).

The Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this <<Date>>.

The conditions of this obligation are:

1. If the bidder withdraws its bid during the period of bid validity specified by the bidder on the Bid Form; or
2. If the bidder, having been notified of the acceptance of its bid by the ACADEMY during the period of validity of bid
  - (a) Withdraws its participation from the bid during the period of validity of bid document; or
  - (b) Fails or refuses to participate in the subsequent process after having been shortlisted;

We undertake to pay to the ACADEMY up to the above amount upon receipt of its first written demand, without the ACADEMY having to substantiate its demand, provided that in its demand the ACADEMY will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to <<insert date>> and including <<extra time over and above mandated in the RFP>> from the last date of



submission and any demand in respect thereof should reach the Bank not later than the above date.

**NOTWITHSTANDING ANYTHING CONTAINED HEREIN:**

- I. Our liability under this Bank Guarantee shall not exceed Rs. <<Amount in figures>> (Rupees<<Amount in words>> only)
- II. This Bank Guarantee shall be valid up to <<insert date>>)
- III. It is condition of our liability for payment of the guaranteed amount or any part thereof arising under this Bank Guarantee that we receive a valid written claim or demand for payment under this Bank Guarantee on or before <<insert date>>) failing which our liability under the guarantee will automatically cease.

(Authorized Signatory of the Bank)

Seal:

Date:



---

## Annexure 8 – Format for Performance Bank Guarantee

For Contract Performance Bank Guarantee

**Ref : IAHE/04/Green Initiatives/2018 Date- 13.08.2018**

Date: \_\_\_\_\_

Bank Guarantee No.: \_\_\_\_\_

**To**

**ADG & Director(IAHE)**

**A-5, Sector-62, Noida (UP)201301**

Dear Sir,

PERFORMANCE BANK GUARANTEE – For <Project Name>

WHEREAS

M/s. (name of Bidder), a company registered under the Companies Act, 1956/2013, having its registered and corporate office at (address of the Bidder), (hereinafter referred to as “our constituent”, which expression, unless excluded or repugnant to the context or meaning thereof, includes its successors and assigns), agreed to enter into a Contract dated ..... (Hereinafter, referred to as “Contract”) with you for **“Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at IAHE Campus, Noida under PPA model”**, in the said Contract.

We are aware of the fact that as per the terms of the Contract, M/s. (name of the bidder) is required to furnish an unconditional and irrevocable Bank Guarantee in your favour for an amount of 10% of the Total Contract Value, and guarantee the due performance by our constituent as per the Contract and do hereby agree and undertake to pay any and all amount due and payable under this bank guarantee, as security against breach/ default of the said Contract by our Constituent.

In consideration of the fact that our constituent is our valued customer and the fact that he has entered into the said Contract with you, we, (name and address of the bank), have agreed to issue this Performance Bank Guarantee.





---

Therefore, we (name and address of the bank) hereby unconditionally and irrevocably guarantee you as under:

In the event of our constituent committing any breach / default of the said Contract, and which has not been rectified by him, we hereby agree to pay you forthwith on demand such sum/s not exceeding the sum of 10% of the Total Contract Value i.e.,.....<in words> without any demur. Notwithstanding anything to the contrary, as contained in the said Contract, we agree that your decision as to whether our constituent has made any such default(s) / breach(es), as aforesaid and the amount or amounts to which you are entitled by reasons thereof, subject to the terms and conditions of the said Contract, will be binding on us and we shall not be entitled to ask you to establish your claim or claims under this Performance Bank Guarantee, but will pay the same forthwith on your demand without any protest or demur.

This Performance Bank Guarantee shall continue and hold valid till 90 (Ninety) days after completion of the Contract Period, subject to the terms and conditions in the said Contract.

We bind ourselves to pay the above said amount at any point of time commencing from the date of the said Contract until 90 (Ninety) days after the completion of Contract Period.

We further agree that the termination of the said Contract, for reasons solely attributable to our constituent, virtually empowers you to demand for the payment of the above said amount under this guarantee and we would honor the same without demur.

We hereby expressly waive all our rights: Requiring to pursue legal remedies against IAHE; and for notice of acceptance hereof any action taken or omitted in reliance hereon, of any defaults under the Contract and any resentment, demand, protest or any notice of any kind.

We, the Guarantor, as primary obligor and not merely Surety or Guarantor of collection, do hereby irrevocably and unconditionally give our guarantee and undertake to pay any amount you may claim (by one or more claims) up to but not exceeding the amount mentioned aforesaid during the period from and including the date of issue of this guarantee through the period.

We specifically confirm that no proof of any amount due to you under the Contract is required to be provided to us in connection with any demand by you for payment under this guarantee other than your written demand.



---

Any notice by way of demand or otherwise hereunder may be sent by special courier, telex, fax, registered post or other electronic media to our address, as aforesaid and if sent by post, it shall be deemed to have been given to us after the expiry of 48 hours when the same has been posted. If it is necessary to extend this guarantee on account of any reason whatsoever, we undertake to extend the period of this guarantee on the request of our constituent under intimation to you.

This Performance Bank Guarantee shall not be affected by any change in the constitution of our constituent nor shall it be affected by any change in our constitution or by any amalgamation or absorption thereof or therewith or reconstruction or winding up, but will ensure to the benefit of you and be available to and be enforceable by you during the period from and including the date of issue of this guarantee through the period.

Not with standing anything contained hereinabove, our liability under this Performance Guarantee is restricted to 10% of the Contract Value, and shall continue to exist, subject to the terms and conditions contained herein, unless a written claim is lodged on us on or before the aforesaid date of expiry of this guarantee.

We hereby confirm that we have the power/s to issue this Guarantee in your favor under the Memorandum and Articles of Association / Constitution of our bank and the undersigned is / are the recipient of ACADEMY by express delegation of power/s and has / have full power/s to execute this guarantee under the Power of Attorney issued by the bank in your favor.

We further agree that the exercise of any of your rights against our constituent to enforce or forbear to enforce or any other indulgence or facility, extended to our constituent to carry out the contractual obligations as per the said Contract, would not release our liability under this guarantee and that your right against us shall remain in full force and effect, notwithstanding any further arrangement that may be entered into between you and our constituent, during the entire currency of this guarantee.

Notwithstanding anything contained herein:

Our liability under this Performance Bank Guarantee shall not exceed 10% of the Total Contract Value. This Performance Bank Guarantee shall be valid only from the date of signing of Contract to 90 (Ninety) days after the End of Contract Period (including Operation & Maintenance Period); and



We are liable to pay the guaranteed amount or part thereof under this Performance Bank Guarantee only and only if we receive a written claim or demand on or before 90 (Ninety) days after the completion of Contract Period.

Any payment made hereunder shall be free and clear of and without deduction for or on account of taxes, levies, imports, charges, duties, fees, deductions or withholding of any nature imposts. This Performance Bank Guarantee must be returned to the bank upon its expiry. If the bank does not receive the Performance Bank Guarantee within the above-mentioned period, subject to the terms and conditions contained herein, it shall be deemed to be automatically cancelled.

This guarantee shall be governed by and construed in accordance with the Indian Laws and we hereby submit to the exclusive jurisdiction of courts of Justice in India for the purpose of any suit or action or other proceedings arising out of this guarantee or the subject matter hereof brought by you may not be enforced in or by such court.

Dated ..... this ..... day ..... 20....

Yours faithfully,

For and on behalf of the ..... Bank,

(Signature)

Designation

(Address of the Bank)

Note:

This guarantee will attract stamp duty as a security bond.

A duly certified copy of the requisite ACADEMY conferred on the official/s to execute the guarantee on behalf of the bank should be annexed to this guarantee for verification and retention thereof as documentary evidence in the matter.



**Annexure 9 – List of buildings Proposed for “Design, Engineering, Supply, Installation, Testing, Commissioning, Operation and Maintenance of Grid connected Rooftop Solar Photovoltaic Power Plants on Buildings/Spaces at IAHE Campus, Noida under PPA model”**

The Locations shall be finalized in mutual consultation.



---

## Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

- **Letter of Acceptance**
- **Contract Agreement**



---

## Letter of Acceptance

[on letterhead paper of the Employer]

.....[date].....

To: .....[name and address of the Implementing Agency].....

Subject: ..... [Notification of Award Contract No].....

This is to notify you that your RFP/Bid dated.....[insert date]..... for execution of the.....[insert name of the contract and identification number, as given in the PCC].....for the Accepted Contract Amount of.....[insert amount in numbers and words and name of currency], as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the of the Performance Security Form included in Section X. Contract Forms, of the Bidding Document.

Authorized Signature: .....

Name and Title of Signatory: .....

Name of Agency: .....

Attachment: Contract Agreement



---

## Contract Agreement

THIS AGREEMENT made the ..... day of ..... between ..... **[name of the Employer]** ..... (hereinafter “the Employer”), of the one part, and ..... **[name of the Implementing Agency]**..... (hereinafter “the Implementing Agency”), of the other part:

WHEREAS the Employer desires that the Works known as.....**[name of the Contract]**.....should be executed by the Implementing Agency, and has accepted a Bid by the Implementing Agency for the execution and completion of these Works and the remedying of any defects therein,

The Employer and the Implementing Agency agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
  - (i) the Letter of Acceptance
  - (ii) the Letter of Bid
  - (iii) the addenda Nos\_\_\_\_\_ (if any)
  - (iv) the Particular Conditions
  - (v) the General Conditions of Contract, including appendix;
  - (vi) the Specification
  - (vii) the Drawings
  - (viii) Activity Schedule and
  - (ix) any other document **listed in the PCC** as forming part of the Contract,
3. In consideration of the payments to be made by the Employer to the Implementing Agency as specified in this Agreement, the Implementing Agency hereby covenants with the Employer to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Implementing Agency in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become



---

payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of..... **[name of the borrowing country]** ..... on the day, month and year specified above.

Signed by: \_\_\_\_\_  
*For and on behalf of the Employer*

Signed by: \_\_\_\_\_  
*for and on behalf of the Implementing Agency*

in the  
presence of: \_\_\_\_\_  
*Witness, Name, Signature, Address, Date*

in the  
presence of: \_\_\_\_\_  
*Witness, Name, Signature, Address, Date*