

# REQUEST FOR SELECTION OF BIDDER (RFS)

RFS NO. [\_\_\_\_\_]

Client: <<NAME OF THE SPV>>

Country: INDIA

**Project Name:** *Grid connected Rooftop Solar PV Systems*

**Name of Work:** Implementation of Grid Connected Roof Top Solar PV System on Government Buildings in <<Name of the City>> under the Smart Cities Mission.

Dated: \_\_\_\_\_

Email: \_\_\_\_\_

Website: \_\_\_\_\_

Managing Director/CEO

<<NAME OF THE SPV>>

[Address]

**Request for Selection of (RFS) of Bidders for  
Implementation of Grid Connected Roof Top  
Solar PV System  
on Rooftops of *Locations Identified by*  
**<<NAME OF THE SPV>>**  
in **<<Name of the City>>** on RESCO Model**

RFS No: <<>>

Dated: <<>>

**<<Name of the SPV>>**

<<Address>>

**<<NAME OF THE SPV>>**

**INTERNATIONAL COMPETITIVE BIDDING FOR RFS**

Key Dates

Period of Availability of Bidding Document on Web Site	From _____, ____ Hrs To _____, ____ Hrs
Time and Date of Pre – Bid Conference	Date : _____, Time : ____ Hrs
Last Date and Time for Online Receipt of Bids	Date : _____, Time : ____ Hrs
Time and Date of Opening of Technical Bids (Bids will be opened Online by the authorized officers)	Date : _____, Time : ____ Hrs
Officer Inviting Bids	Managing Director/CEO, <<NAME OF THE SPV>>

Contact Persons:

1. \_\_\_\_\_
2. \_\_\_\_\_

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**DISCLAMIER:**

1. Though adequate care has been taken while preparing the RFS document, the Bidders/Applicants shall satisfy them that the document is complete in all respects. Intimation of any discrepancy shall be given to this office immediately. If no intimation is received from any Bidder within fifteen (15) days from the date of notification of RFS/Issue of the RFS documents, it shall be considered that the RFS document is complete in all respects and has been received by the Bidder.
2. <<NAME OF THE SPV>> reserves the right to modify, amend or supplement this RFS document including all formats and Annexure.
3. While this RFS has been prepared in good faith, neither <<NAME OF THE SPV>> nor their ~~employees~~ or advisors make any representation or warranty, express or implied, or accept any responsibility or liability, whatsoever, in respect of any statements or omissions herein, or the accuracy, completeness or reliability of information, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of this RFS, even if any loss or damage is caused by any act or omission on their part.

## Letter of Invitation

RFS NO. [ \_\_\_\_\_ ] Date: \_\_\_\_\_

Name of the SPV: <<NAME OF THE SPV>>

*Project Name:* Grid connected Rooftop Solar PV Systems

Name of Work: Design, Engineering, Energy Supply, Installation, Testing, Commissioning, Synchronizing and Maintenance of Power Grid Connected Roof top Solar PV Systems on Net Metering Basis on the roofs of various Public Buildings in <<Name of the City>>City.

Dear Mr. /Ms.:

1. The <<NAME OF THE SPV>> (hereinafter called “Employer”) is implementing Smart City Projects in <<Name of the City>>City under Smart City Mission.
2. <<NAME OF THE SPV>> invites bids from the eligible bidders to participate in the Request for Selection of Bidders for “***Design, Engineering, Energy Supply, Installation, Testing, Commissioning, Synchronizing and Maintenance of Power Grid Solar Rooftop Systems on Net Metering Basis on the roofs of various Public Buildings in <<Name of the City>> City***”.
3. The bids shall be accepted through e-tendering process as well as in the Physical form as described in the RFS.
4. For the implementation of above mentioned work, Bidders should submit their bid proposal/application along with all supporting documents complete in all aspect on or before {date and time specified in page 3 of this document} in prescribed format by on line.
5. Bidder shall submit bid proposal along with non-refundable processing fee, bid document fees and EMD complete in all respect as per the Bid Information sheet.
6. Techno-Commercial bids will be opened {date and time specified in page 3 of this document} in presence of authorized representatives of bidders/applicants who wish to be present. Bid proposals received without or lesser than the prescribed processing fee and Bid Bond will not be considered. In the event of any date indicated above is a declared Holiday, the next working day shall become operative for the respective purpose mentioned herein.
7. Bid documents which include Eligibility criteria, “Technical Specifications”, various conditions of contract, formats, etc. can be downloaded from **website:** \_\_\_\_\_ any amendment (s)/corrigendum/clarifications with respect to this

Bid shall be uploaded on this website only. The Bidder should regularly follow up for any Amendment/Corrigendum/Clarification on the above website.

8. The Bid will be rejected in case the Bidder has submitted the conditional bid and/or the specifications of the terms to be supplied are not complied with RFS.

Yours sincerely,

Managing Director/CEO,

<<NAME OF THE SPV>>

[Address]

Email: \_\_\_\_\_

## BID INFORMATION SHEET

<b>Document Description</b>	This RFS document comprises for <b><i>“Bidding process for unit rate per kWp”</i></b> with bidding for RESCO model.
<b>RFS NO.</b>	RFS No: _____, Dated:_____
<b>Broad Scope of Work for Bidding</b>	Design, Engineering, Energy Supply, Installation, Testing, Commissioning, Synchronizing and Maintenance of Power Grid Connected Roof top Solar PV Systems on Net Metering Basis on the roofs of various Public Buildings in <<Name of the City>>City.
<b>Pre-bid Conference/ Clarification Meeting</b>	A pre-bid conference will be held on as specified in Page - 3 of bid document
<b>Last date &amp; Time of Submission of Response of RFS</b>	As specified in the Page - 3 of the document
<b>Bid Opening (Techno-Commercial)</b>	As specified in the Page - 3 of the document
<b>Processing Fee (non- refundable)</b>	<b>Rs. &lt;&lt;Amount&gt;&gt;/- (Rupees &lt;&lt;Amount&gt;&gt; only)</b> exclusive of Service tax and is non - refundable. ( to be paid online while tendering in e-procurement platform)
<b>Bid Document fees</b>	<b>Rs. &lt;&lt;Amount&gt;&gt;/- (Rupees &lt;&lt;Amount&gt;&gt; only)</b> and is non - refundable. To be paid as DD drawn on any scheduled banks in favour of <<NAME OF THE SPV>>, and payable at [City].
<b>Bid Bond/ Earnest Money Deposit (EMD)</b>	<b>Rs. &lt;&lt;Amount&gt;&gt;/- (Rupees &lt;&lt;Amount&gt;&gt; only)</b> and is refundable. Bid Bond/EMD drawn on any scheduled banks in favour of <<NAME OF THE SPV>>, shall be furnished along with the response to RFS as per Clause 3.12 of Section-I for details
<b>Performance Security / Performance Bank Guarantee (PBG)</b>	PBG amount shall be furnished by the successful bidder after issue of Letter of Allocation by <<NAME OF THE SPV>>. Please refer Clause 3.13 of Section-I for details.
<b>Name, Designation, Address and other details (For Submission of Response to RFS)</b>	Bid to be submitted [online through e-procurement platform] and hard copies have to be submitted at <b>o/o Managing</b>

	<b>Director/CEO, &lt;&lt;Name of the SPV&gt;&gt;, [Address], India.</b>
<p><b>Important Note:</b> Prospective Bidders are requested to remain updated for any Notices/amendments/clarifications etc. to the RFS document through the website _____ No separate notifications will be issued for such notices/amendments/clarification etc., in the print media or individually.</p> <p>All the information related to this RFS will be updated on the above Website.</p>	

## 1. **DEFINITIONS & ABBREVIATIONS**

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

1.1. “**Affiliate**” shall mean a company that either directly or indirectly

- a) controls or
- b) is controlled by or
- c) is under common control with

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.

1.2. “**ABD**” Shall mean Area Based Development in the Smart city proposals.

1.3. “**Benchmark cost**” shall mean per Wp cost defined by MNRE for solar power plants without battery. For the purpose of this RFS, the bench mark cost as given in the enclosures with this RFP.

1.4. “**B.I.S**” shall mean specifications of Bureau of Indian Standards (BIS);

1.5. “**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 RFS, in accordance with the terms and conditions hereof.

1.6. “**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;

1.7. “**Bid Bond**” shall mean the unconditional and irrevocable bank guarantee to be submitted along with the Bid by the Bidder under Clause 3.12 of this RFS, in the prescribed Format- 3;

1.8. “**Bid Deadline**” shall mean the last date and time for submission of Bid in response to this RFS as specified in Bid information Sheet;

1.9. “**Bid Capacity**” shall means capacity offered by the bidder in his Bid under invitation.

1.10. “**CEA**” shall mean Central Electricity Authority.

1.11. “**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;

1.12. “**Competent Authority**” shall mean Managing Director/CEO of <<NAME OF THE

- SPV>>** himself and/or a person or group of persons nominated by Managing Director/CEO for the mentioned purpose herein;
- 1.13. **“Commissioning”** means Successful operation of the Project / Works by the Contractor, for the purpose of carrying out Performance Test(s) as defined in RFS.
- 1.14. **“Company”** shall mean a body incorporated in India under the Companies Act, 1956 or Companies Act, 2013 including any amendment thereto;
- 1.15. **“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 kW \* 365 \* 24)***).
- 1.16. **“Eligibility Criteria”** shall mean the Eligibility Criteria as set forth in Clause 3.3 of this RFS;
- 1.17. **“Financially Evaluated Entity”** shall mean the company which has been evaluated for the satisfaction of the Financial Eligibility Criteria set forth in Clause 3.3.3 hereof;
- 1.18. **“IEC”** shall mean specifications of International Electro-technical Commission;
- 1.19. **“kWp”** shall mean kilo-Watt Peak;
- 1.20. **“kWh”** shall mean kilo-Watt-hour;
- 1.21. **“<<Name of the SPV>>”** shall mean <<NAME OF THE SPV>>, [City]. (Special Purpose Vehicle - SPV)
- 1.22. **“Levelised tariff”** shall mean the tariff offered by the bidder for 25 years for the scope of work as per RFS document subject to the maximum Levelised tariff of 25 years as per clause 2.1.2 of Section – I.
- 1.23. **“MNRE”** shall mean Ministry of New and Renewable Energy, Government of India;
- 1.24. **“Model”** shall mean RESCO model which includes energy sale which shall not exceed the beyond the Levelised ceiling tariff as referred in the clause no. 2.1.2 of Section - I.
- 1.25. **“[Name of the Organization]”** shall mean <<Abbreviation of SPV>>
- 1.26. **“Net –worth”** shall mean as per Company Act 2013 and amendments if any.
- 1.27. **“O&M”** shall mean Operation & Maintenance of Rooftop Solar PV system for 25 years;
- 1.28. **“Owner of project”** shall mean anyone who has ownership of the roof (including

in the form of lease) and is the legal owner of all equipment of the project OR the Successful bidder who has taken the roof on mutually agreed terms and conditions from the roof top owner(s) and enters into a PPA with the consumer(s) for supply of solar power for at least 25 years from the date of Commissioning of project.

- 1.29. **“Project Cost / Project Price”** shall mean the price offered by the Bidder for the Scope of work as per RFS document.
- 1.30. **“Project capacity”** means Capacity in MWp offered by the Bidder consisting of single or multiple roof tops. The project capacity specified is on “DC” output Side only.
- 1.31. **“Performance Ratio” (PR) means :**“Performance Ratio” (PR) means the ratio of plant output versus installed plant capacity at any instance with respect to the radiation measured.  $PR = (\text{Measured output in kW} / \text{Installed Plant capacity in kW} * (1000 \text{ W/m}^2 / \text{Measured radiation intensity in W/m}^2))$ .
- 1.32. **“Parent company”** shall mean a company, which holds more than 50%equity either directly or indirectly in the Bidding Company or Project Company or a Member in a Consortium developing Project.
- 1.33. **“Project Company”** shall mean Company incorporated by the bidder as **per** Indian Laws in accordance with Clause no 3.4 of section – I.
- 1.34. **“Project sanctioned documents”** shall mean the documents in the Annexure – A.
- 1.35. **“Price Bid”** shall mean Envelope III of the Bid, containing the Bidder’s quoted Price as per the Section- IV of this RFS;
- 1.36. **“Qualified Bidder ”**shall mean the Bidder(s) who, after evaluation of their Techno Commercial Bid as per Clause 3.3 stand qualified for opening and evaluation of their Price Bid;
- 1.37. **"RFS"** shall mean Request for Selection (RFS)/Bid document/Tender document
- 1.38. **“RESCO”** shall mean Renewable Energy Service Companies;
- 1.39. **“RESCO model”** shall mean where the bidders intend to take a roof top owned by some other entity on mutually agreed terms and conditions from the roof top owner(s) and enters into the PPA with rooftop owner / DISCOM / others for

supply of Solar power for 25 years from the date of Commissioning of project.

- 1.40. **“Rooftop Solar PV”** shall mean The Solar PV systems installed on the Flat /Slanted roof shall be covered under this scheme. In addition, the systems installed on the elevated platform on metallic or concrete structure (above 10feet from ground in case sufficient shadow free rooftop is not available) shall also be considered under this scheme. In addition, 40% of the rooftop solar PV sanctioned Capacity for a site may also be installed on ground, in case sufficient shadow free rooftop is not available.
- 1.41. **“SCP” shall mean Smart City Proposal of <<Name of City>>**
- 1.42. **“Statutory Auditor”** shall mean the auditor of a Company appointed under the provisions of the Companies Act, 1956 or under the provisions of any other applicable governing law;
- 1.43. **“Successful Bidder(s) /Contractor/Project Developers(s)”** shall mean the Bidder(s) selected by <<NAME OF THE SPV>> pursuant to this RFS for Implementation of Grid-Connected-Rooftop Solar PV System as per the terms of the RFS Documents, and to whom an Allocation Letter has been issued;
- 1.44. **“SNA”** shall mean State Level Nodal Agency.
- 1.45. **“Subsidy”** shall mean **rebate applicable as per MNRE** of Project Cost quoted by the Successful Bidder for a sanctioned by MNRE, Govt. of India and disbursed by <<NAME OF THE SPV>>.
- 1.46. **“Tendered Capacity”** shall mean the Total aggregate capacity in MW as indicated in clause 2.3 proposed to be allocated by <<NAME OF THE SPV>> to the Successful Bidder through this bidding process as per terms and conditions specified therein;
- 1.47. **“Ultimate Parent Company”** shall mean a company, which directly or in directly owns at least Twenty Six Percent (26%) paid up equity capital in the bidding company and / or the financially evaluated entity shall be under the direct control or indirectly under the common control of such company.
- 1.48. **“Wp”** shall mean Watt Peak.
- 1.49. **1MWp** for the purpose of conversion in **kWp** shall be considered as 1000kWp.

## **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.

## SECTION - I

### A. INTRODUCTION, BID DETAILS AND INSTRUCTIONS TO THE BIDDERS

#### 1. INTRODUCTION

- 1.1. <<Name of the City>>was selected as smart city in the Smart city competition. As per the smart city guide lines, 10% of the town energy consumption shall depend on the renewable energy. [City] being district headquarters, it has more number of government buildings. It is proposed to install solar power over the roof tops. The scope of works consists of “**Design, Engineering, Energy Supply, Installation, Testing, Commissioning, Synchronizing and Maintenance of Power Grid Connected Rooftop Solar PV Systems on Net Metering Basis on the roofs of various Public Buildings in <<Name of the City>> City.**”
- 1.2. **Bidder can:** Submit bids under RESCO Model for the Public Buildings in the <<Name of the City>>Municipal Corporation are mentioned in RFS as per Clause 2.1.1
- 1.3. The Project targets installation of grid-connected roof top solar PV projects on the roofs of (Government offices/ Hospitals / Educational Institutions etc,) (**List enclosed as Annexure - P**). The generated solar power may be utilized for captive application and the surplus power will be fed directly to the grid. The scheme aims to reduce the fossil fuel based electricity load on main grid and make building self-sustainable from the point of electricity, to the extent possible.
- 1.4. <<NAME OF THE SPV>>, which expression shall also include its successors and permitted assigns, hereby invites interested companies to participate in the bidding process for the selection of Successful Bidder(s) for implementation of large scale grid-connected roof top Solar Photovoltaic Projects under Smart City scheme in the <<Name of the City>>Municipal Corporation area indicated herein under.
- 1.5. The Bidder is advised to read carefully all instructions and conditions appearing in this document and understand them fully. All information and documents required as per the bid document must be furnished. Failure to provide the information and / or documents as required may render the bid technically unacceptable.
- 1.6. The bidder shall be deemed to have examined the bid document, to have obtained his own information in all matters whatsoever that might affect the carrying out the works in line with the scope of work specified elsewhere in the document at the offered rates and to have satisfied himself to the sufficiency of his bid. The bidder shall be deemed to know the scope, nature and magnitude of the works and

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requirement of materials, equipment, tools and labour involved, wage structures and as to what all works he has to complete in accordance with the bid documents irrespective of any defects, omissions or errors that may be found in the bid documents.

## **2. BID DETAILS:** .....

**2.1.** Bids in RESCO Model: The bidding process under this RFS of the rooftop scheme is for RESCO Model.

.....

**2.1.1.** Bids are invited from the prospective bidders to furnish year by year tariff for the unit rate of Wp for 25 years from the date of commissioning of the project. Tariff stream quoted by the bidder shall then be Levelised with a discounting rate of 11%. Bid will be awarded based on the lowest Levelised tariff for 25 years.

**2.1.2.** Maximum allowable Levelised tariff for 25 years cost for RESCO Model assuming the discounting rate of 11% is at the rate of Rs.6.00/- per kWh (As per latest CERC defined tariff).

**2.1.3.** The bids with Levelised tariff in excess of above said Levelised tariffs shall be outrightly rejected. Calculation of Levelised tariff is provided in Annexure-C.

.....

**2.1.4.** Tariff in any year shall either be equal to or more than the tariff in the immediately preceding year.

## **2.2. SIZE OF THE PROJECTS:**

**2.2.1.** The size of project unit starts from <<>>kWp and above for identified locations of concerned urban local bodies /DISCOMs. One project unit may however comprise of several rooftop units. Size of one project should be minimum one rooftop if one rooftop is not feasible and as per the site conditions other rooftop could be connected. Each roof top unit can separately connect with the grid and may have separate bi-directional meters whose cost has to be borne by the bidder.

## **2.3 BID CAPACITY:**

Total Bid capacity will be around <<>> MW for locations indicated in table in Annexure <<>>. This capacity can be increased or decreased depending on the availability of roof top area of government buildings. Bidder shall quote in its price bid for a capacity of <<>> MW as per clause 6.3. After successful installation of <<>>

**MW** capacity, <<Name of the City>>Municipal Corporation may increase the capacity after due approval from <<NAME OF THE SPV>>.

### **3. INSTRUCTIONS TO THE BIDDERS:**

3.1. Bidder must meet the eligibility criteria independently as Bidding Company or as Bidding Consortium with one of the members acting as the Lead Member of the Bidding Consortium.

3.1.1. Bidder will be declared as a Qualified Bidder based on meeting the eligibility criteria and as demonstrated based on documentary evidence submitted by the Bidder along with the Bid.

3.1.2. In case of a Bidding Consortium, the Financial Eligibility criteria like Annual turnover or Net worth as indicated in Clause 3.3.3 shall be fulfilled by the Lead Member or Parent Company of the Lead Member while the Technical Eligibility Criteria shall be fulfilled by consortium members.

3.1.3. In case bidder submitting bid through consortium, a Consortium Agreement as per the Format-10 shall be furnished along with the bid.

3.1.4. The maximum members allowed in consortium are limited to [2]. Each member in consortium shall have completed minimum 1 no. of similar project of capacity not less than 50kW. And all members in consortium together shall satisfy the total eligible capacity.

3.1.5. Further incase where the bidding company has used the financial eligibility criteria of its parent company then it needs to be ensured that any change in the controlling equity of the Bidding Company requires prior approval of <<NAME OF THE SPV>>.

3.1.6. All the Member of the Consortium may form the Project Company as specified in Clause 3.5.

3.1.7. Bidder including its member of the consortium should submit one bid only.

### **3.2 USE OF TECHNICAL AND/OR FINANCIAL STRENGTH OF PARENT COMPANY**

3.2.1 Bidder can however use the technical and financial strength of its Parent Company or Affiliate to fulfil the Technical and/or Financial Eligibility criteria mentioned below. Members of consortium can also use the credentials of the parent company or Affiliate to fulfil the eligibility requirement.

3.2.2 In above case, Bidders shall submit an Undertaking from the Parent Company as per Format- 9 and also furnish a certificate of relationship of Parent Company or Affiliate with the Bidding Company as per Format-8. Company Secretary Certificate towards shareholding pattern of the Parent Company and the Bidding Company along with a Board resolution from the Parent Company shall also be submitted.

### 3.3 ELIGIBILITY CRITERIA

#### 3.3.1 GENERAL:

The Bidder should be either a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment there to or anywhere in the world and engaged in the business of Solar Power. Limited Liability partnership (LLP) shall be allowed for bidding. A copy of certificate of incorporation shall be furnished along with the bid in support of above.

**A copy of certificate of incorporation shall be furnished along with the bid in support of above.**

#### 3.3.2 TECHNICAL ELIGIBILITY CRITERIA:

- 3.3.2.1 The Bidder should have designed, supplied, installed & commissioned at least one Grid connected Solar PV Power Project having a capacity of not less than 50 kW which should have been commissioned at least six months prior to date of submission of bid. The list of projects commissioned at least 6 months prior to date of submission of bid, indicating whether the project is grid connected, along with a scanned copy of the Commissioning certificate and Work order / Contract / Agreement/ from the Client/Owner shall be submitted(online) in support of this Clause.

#### 3.3.3 FINANCIAL ELIGIBILITY CRITERIA:

- 3.3.3.1 The Bidder should have an Annual Turnover (or Net worth) as indicated below.
- 3.3.3.2 The Annual turnover of <<Turnover>> per MW in any one of the last 3 financial years preceding the Bid Deadline subjected to the condition that the Bidder should at least have completed one financial year.

**OR**

- 3.3.3.3 Net worth equal to or greater than the value calculated at rate of <<Net worth>> per MW of capacity offered by the Bidder in its Bid. The Computation of Net worth shall be based on unconsolidated audited annual accounts of the last financial year immediately preceding the Bid Deadline. Share premium can be included in the Net-worth calculation in case of listed companies in India only. (10% weightage on the annual turnover will be considered for bringing the turnover to the present year i.e., 2017-2018.)

3.3.3.4 The formula of calculation of net-worth shall be as follows:

Net-worth = (Paid up share capital) + {(Free reserves - Share premium) + Share premium of listed companies} - (Revaluation of reserves)-(Intangible assets) - (Miscellaneous expenditure to the extent not written off and carry forward losses).

For the purposes of meeting financial requirements, only unconsolidated audited annual accounts shall be used.

However, audited consolidated annual accounts of the Bidder may be used for the purpose of financial requirements provided the Bidder has at least twenty six percent (26%) equity in each company whose accounts are merged in the audited consolidated accounts and provided further that the financial capability of such companies (of which accounts are being merged in the consolidated accounts) shall not be considered again for the purpose of evaluation of the Bid.

3.3.3.5 Bidders shall furnish documentary evidence as per the Format -7, duly certified by Authorized Signatory and the Statutory Auditor / Practicing Chattered Accountant of the Bidding Company in support of their financial capability.

### **3.4 INCORPORATION OF A PROJECT COMPANY**

3.4.1 In case the Bidder wishes to incorporate a Project Company, in such a case, Bidder if selected as a Successful Bidder can incorporate a Project Company. Bidder shall be responsible to get all clearance required/obtained in the name of the Bidding Company transferred in the name of the Project Company.

3.4.2 The aggregate equity share holding of the Successful Bidder in the issued and paid up equity share capital of the Project Company shall not be less than fifty one percent (51%) up to a period of two(2) years from the date of commissioning of the Project Developer.

### **3.5 BID SUBMISSION BY THE BIDDER**

3.5.1 The Consultant shall submit a signed and complete Proposal comprising the documents and forms. The submission shall be physically (hard Copy) as well as online.

3.5.2 An authorized representative of the Consultant shall sign the original submission letters in the required format for the Qualification Documents, Technical Proposal and

the Financial Proposal and shall initial all pages as required. The authorization shall be in the form of a written power of attorney attached to the Qualification Documents Proposal. **However bids submitted online will be the final.**

**3.5.3 Note to the Bidder for e tendering:**

In participation in e-tendering of Employer, it is mandatory for prospective Bidder to get registered on website \_\_\_\_\_. Thus, it is advised to all prospective Bidders to get registration by making on line registration fees. It is mandatory that the Bidder is required to sign their bids online using Digital Signature Certificates, so the same should be obtained the same at the earliest if not obtained already.

For further information regarding issue of Digital Signature Certificate, the Bidder may visit website \_\_\_\_\_ it is to be noted that it may take upto 7 to10 working days for issue of Digital Signature Certificate. Employer shall not be responsible for any delay in issue of Digital Signature Certificate.

If Bidder is bidding first time for e-tendering, then it is obligatory on the part of Bidder to fulfill all formalities such as registration, obtaining Digital Signature Certificate etc. well in advance.

Bidder must positively complete online e-tendering procedure at \_\_\_\_\_.

For any type of clarifications Bidder can visit [website] and help desk Nos. \_\_\_\_\_.

The proposals shall be submitted physical as well as online only as indicated above.

The original proposal, both technical and Financial Proposals shall contain no interlineations or overwriting, except as necessary to correct errors made by the Bidder themselves. The person who signed the proposal must initial such corrections. Submission letters for both Technical and Financial Proposals should respectively be submitted as per the formats provided in the RFS.

An authorized representative of the Bidder shall initial all pages of the original Technical Proposals. The authorization shall be in the form of a written power of attorney accompanying the Proposal or in any other form demonstrating that the representative has been dully authorized to sign. The Technical Proposal shall be submitted in Physical form in original and the scanned copy of the original in pdf form shall be uploaded on the Employers website duly digitally signed. The signed Technical Proposal shall be marked "ORIGINAL". The financial Proposal shall be submitted online only and shall be signed digitally.

The original Technical Proposal shall be placed in a sealed envelope clearly marked "TECHNICAL PROPOSAL" followed by the name of the Assignment/job. The envelopes containing the Technical Proposals, EMD, cost of bid documents, power of authority and proof of processing fees paid online shall be placed into an outer

envelope and sealed physically as well as digitally as applicable. The technical proposal, EMD, power of authority, document fee and proof of on line purchase of bid document and processing fee shall be submitted in Physical form (hard copy) along with 3 copies and scanned copy of the technical proposal and EMD, power of authority shall be submitted online be sealed digitally. The Financial Proposal shall be submitted online only and shall be sealed digitally. This outer envelope of the physical submission shall bear the submission address, name of assignment/reference number be clearly marked "DO NOT OPEN, BEFORE *[insert the time and date of the opening indicated in the Data sheet/key dates]*". The Employer shall not be responsible for misplacement, losing or premature opening if the outer envelope is not sealed and/or marked as stipulated. This circumstance may be case for Proposal rejection. If the Financial Proposal is not submitted online digitally sealed, this will constitute grounds for declaring the Proposal non-responsive.

The Proposals must be sent to the address/addresses indicated in the Data sheet and received by the Employer no later than the time and the date indicated in the Data sheet, or any extension to this. Any proposal received by the Employer after the deadline for submission shall be returned unopened.

#### **3.5.4 The Bidder must submit the following:**

**3.5.4.1 Physical Submission:** (One Original and 3 copies of the original Technical proposals):  
Original Copy of Technical proposal, EMD, Power of Authority, cost of bid documents and proof of online payment bid processing fee.

#### **3.5.4.2 Online submission**

- a) Scanned copy of original Technical proposal, EMD, Power of Authority, cost of bid documents in pdf format Financial Proposal
- b) The information and/or documents shall be submitted by the Bidder as per the formats specified in Section-IV & Section V of this document.
- c) Strict adherence to the formats wherever specified, is required. Wherever, information has been sought in specified formats, the Bidder shall refrain from referring to brochures /pamphlets. Non-adherence to formats and / or submission of incomplete information may be a ground for declaring the Bid as non-responsive. Each format has to be duly signed and stamped by the authorized signatory of the Bidder.

**3.5.4.3** The Bidder shall furnish documentary evidence in support of meeting Eligibility Criteria as indicated in Clause no. 3.3.1, 3.3.2 and 3.3.3 to the satisfaction of <<NAME OF THE SPV>> and shall also furnish unconsolidated/consolidated audited annual accounts in support of meeting financial requirement, which shall consist of balance sheet, profit and loss account, profit appropriation account, auditor's report, etc., as the case may be of Bidding Company or Financially

Evaluated Entity for any of the last three(5) financial years immediately preceding the date of submission of bid which are used by the bidder for the purpose of calculation of Annual Turnover or of last Financial Year in case of Net Worth.

- 3.5.4.4** In case the annual accounts for the latest financial year are not audited and therefore the bidder cannot make it available, the applicant shall give certificate to this effect from their directors. In such a case, the Applicant shall provide the Audited Annual Reports for 5(Five) years preceding the year or from the date of incorporation if less than 5 years for which the Audited Annual Report is not being provided.

### **3.6 BID SUBMITTED BY A BIDDING COMPANY :**

The Bidding Company should designate one person to represent the Bidding Company in its dealings with <<NAME OF THE SPV>>.

The person should be authorized to perform all tasks including, but not limited to providing information, responding to enquires, signing of Bid etc. The Bidding Company should submit, along with Bid, a Power of Attorney in original (as per Format-6), authorizing the signatory of the Bid.

### **3.7 CLARIFICATIONS AND PRE-BID MEETING**

- 3.7.1 The <<NAME OF THE SPV>> will not enter into any correspondence with the Bidders, except to furnish clarifications on RFS documents, if necessary. The Bidders may seek clarifications or suggest amendments to RFS in writing, through a letter or soft copy by e-mail to reach <<NAME OF THE SPV>> at the address, date and time mentioned in Bid information sheet.
- 3.7.2 The Bidder(s) or their authorized representative(s) is /are invited to attend pre-bid meeting(s), which will take place on date(s) as specified in Bid information sheet, or any such other date as notified by <<NAME OF THE SPV>>.
- 3.7.3 The purpose of the pre-bid meeting will be to clarify any issues regarding the RFS including in particular, issues raised in writing and submitted by the Bidders.
- 3.7.4 <<NAME OF THE SPV>> is not under any obligation to entertain/ respond to suggestions made or to incorporate modifications sought for.

### **3.8 AMENDMENTS TO RFS**

- 3.8.1 At any time prior to the deadline for submission of Bids, the <<NAME OF THE SPV>> may, for any reason, whether at its own initiative or in response to a clarification

requested by a prospective Bidder, modify the RFS document by issuing clarification(s) and/or amendment(s).

3.8.2 The clarification(s) / amendment(s) (if any) will be notified on <<NAME OF THE SPV>> websites \_\_\_\_\_ at least Two (2) days before the proposed date of submission of the Bid. If any amendment is required to be notified within Two (2) days of the proposed date of submission of the Bid, the Bid Deadline may be extended for a suitable period of time.

3.8.3 <<NAME OF THE SPV>> will not bear any responsibility or liability arising out of non-receipt of the information regarding Amendments in time or otherwise. Bidders must check the website for any such amendment before submitting their Bid.

3.8.4 All the notices related to this Bid which are required to be publicized will be uploaded on websites on receipt of request from the participating bidders.

### 3.9 **BIDDING PROCESS**

#### 3.9.1 **BID FORMATS**

3.9.1.1 The Bid in response to this RFS shall be submitted by the Bidders in the manner provided in Clause 3.5& Clause 3.9.1.1. The Bid shall comprise of the following:

**(A). ENVELOP- I (COVERING LETTER, BID DOCUMENT FEES, EMD AND BIDDER FORMAT EXCEL SHEET)**

- i. Covering Letter indicating the Capacity quoted as per the prescribed Format-1.
- ii. Copy of PAN and TAN certificates of bidding company.
- iii. Bid document fee @ <<Rs. Amount/- >>
- iv. Bid Bond/ EMD fee @ <<Rs. Amount/->> as per the prescribed Format-3 shall be submitted separately for the offered capacity in a separate envelop as per Clause 3.12.
- v. Checklist for Bank Guarantee submission requirements as prescribed in Format- 5

[Note: All formats and relevant documents as required in the RFS shall be spiral bounded and should be flagged separately. Details of flag should be mentioned in the covering letter.]

**(B). ENVELOP- II TECHNO-COMMERCIAL DOCUMENTS**

- i. Original power of attorney issued by the Bidding Company in favour of the authorized person signing the Bid, in the form attached hereto as Format-6 or standard power of attorney in favour of authorized person signing the Bid.

**(Power of Attorney must be supplemented by Board Resolution to above effect for the company).** However, <<NAME OF THE SPV>> may accept general Power of Attorney executed in favour of Authorized signatory of the Bidder, if it shall conclusively establish that the signatory has been authorized by the Board of Directors to execute all documents on behalf of the Bidding Company.

- ii. General particulars of bidders as per Format-2
- iii. Shareholding certificate signed by the company secretary of the bidding company and shareholding certificate signed by the company secretary of the Parent company (if parent company credentials are used).
- iv. Document in support of meeting Eligibility Criteria as per Clause no. 3.3
- v. Certificates of incorporation of Bidding company and parent company (if parent

company credentials are used)

- vi. Certificates of incorporation of bidding consortium, if technical consortium is envisaged in the bid submitted by bidder.
- vii. Details for meeting Financial Eligibility Criteria as per Clause no. 3.3.3 in the prescribed Format-7 along with documentary evidence for the same.
- viii. If credentials of Parent company are being used by the Bidding company/lead member of the bidding consortium than Format 8 shall be furnished.
- ix. Undertakings from the Financially Evaluated Entity or its Parent Company /Ultimate Parent Company as per Format-9.
- x. Board Resolution of the Parent Company /Ultimate Parent Company of the Bidding Company duly certified by the Company Secretary to provide the Performance Bank Guarantee (PBG) in the event of failure of the Bidding Company to do so.
- xi. Board resolution for Authorized signatory
- xii. Signed and stamped Copy of RFS Documents including amendments & clarifications by Authorized signatory on each page.

**(C) ENVELOPE III- PRICE BID(S) AS PER SECTION-IV FOR BID SUBMISSION UNDER RESCO**

The Bidder shall inter-alia take into account the following while preparing and submitting the Price Bid duly signed by an authorized signatory.

- i.) The Bidder shall submit sealed Price Bid for **Format-C for RESCO Model.** Each envelope shall be superscripted as "Price Bid for Solar rooftop on govt. buildings and shall not be opened on or before the date. (As specified in page 2 of the document)

**(D) BID DUE DATE**

The Bidder should submit the Bids so as to reach the address indicated on or before *as specified in Page-2, at the o/o <<NAME OF THE SPV>>, [Address].*

### 3.10 VALIDITY OF BID

- 3.10.1 The bid and the Price Schedule included shall remain valid for **a period of 180 days** from the due date of submission of bid, with bidder having no right to withdraw, revoke or cancel his offer or unilaterally vary the offer submitted or any terms thereof. In case of the bidder revoking or cancelling his offer or varying any term & conditions in regard thereof or not accepting letter of allocation, <<NAME OF THE SPV>> shall forfeit the Bid Bond furnished by him.
- 3.10.2 In exceptional circumstances when letter of allocation is not issued/, when the bid could not be able to finalize/ could not able to open financial bid, the <<NAME OF THE SPV>> may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. The Bid Bond provided shall also be suitably extended. A Bidder may refuse the request without forfeiting its Bid Bond. A Bidder granting the request will neither be required nor permitted to modify its Bid in any manner. **In case, if the bidder rejects to give consent for extension of bid validity, other bidders will be considered for evaluation of tender.**

### 3.10.3 METHOD OF BID SUBMISSION

- 3.10.3.1 Bids are required to be submitted in a single sealed cover envelope containing Envelope-I (Covering letter, Processing fee and Bid Bonds), Envelope-II (Techno-Commercial documents) and Envelope III (Price Bid) each one duly sealed separately. Envelope should contain the documents as detailed in Clause 3.9 above.
- 3.10.3.2 All the three envelopes shall be kept in an outermost Envelope. All the envelopes should be superscribed as **“Bid for Implementation of Grid connected Roof Top Solar PV System Scheme in <<Name of the City>>Municipal Corporation area in <<Name of the State>> , India”**  
**Envelope-I (Covering envelope) / Envelope-II (Techno-Commercial Bid) / Envelope-III (Price Bids) along with the “BID DUE DATE”.**
- 3.10.3.3 The Bidders have the option of sending their Bid either by registered post; or speed post; or courier; or by hand delivery, so as to reach <<NAME OF THE SPV>> by the Bid Deadline. Bids submitted by telex/telegram/fax/e-mail shall not be considered under any circumstances. <<NAME OF THE SPV>> shall not be responsible for any delay in receipt of the Bid. Any Bid received after the Bid Deadline shall be returned unopened. ***It should be noted that except Envelope III, no other envelope shall contain any information/document relating to Price Bid.*** <<NAME OF THE SPV>> shall not be responsible for premature opening of the Price Bids in case of non-compliance of above.
- 3.10.3.4 All pages of the Bid, except for the Bid Bond, and any other document executed on

non-judicial stamp paper, forming part of the Bid and corrections in the Bid, if any, must be signed by the authorized signatory on behalf of the Bidder. It is clarified that the same authorized signatory shall sign all pages of the Bid. However, any published document submitted with the Bid shall be signed by the authorized signatory at least on the first and last page of such document Bidders shall submit the Bid in original, duly signed by the their authorized signatory of the Bidder. No change or supplemental information to a Bid will be accepted after the Bid Deadline, unless the same is requested for by <<NAME OF THE SPV>>.

- 3.10.3.5 If the outer cover envelope or Envelope I (Covering Envelope) or Envelope-II (Techno-Commercial Envelope) Envelope III (Price Bid(s)) is/are not closed/sealed and not super scribed as per the specified requirement, <<NAME OF THE SPV>> will assume no responsibility for the Bid's misplacement or premature opening.
- 3.10.3.6 All the envelopes shall be sealed properly & shall indicate the Name & address of the Bidder. The Bid must be complete in all technical and commercial respect and should contain requisite certificates, drawings, informative literature etc. as required in the Bid document. Each page of the Bid document should be signed & stamped. Bids with any type of change or modification in any of the terms/ conditions of this document shall be rejected. If necessary, additional papers may be attached by the Bidder to furnish/ submit the required information. Any term / condition proposed by the Bidder in his bid which is not in accordance with the terms and conditions of the RFS document or any financial conditions, payment terms, rebates etc. mentioned in Price Bid shall be considered as a conditional Bid and will make the Bid invalid.

### 3.11 COST OF BIDDING

- 3.11.1 The bidder shall bear all the costs associated with the preparation and submission of his offer, and the company will in no case be responsible or liable for those costs, under any conditions. The Bidder shall not be entitled to claim any costs, charges and expenses of and incidental to or incurred by him through or in connection with his submission of bid even though <<NAME OF THE SPV>> may elect to modify / withdraw the invitation of Bid.

### 3.12 BID BOND

**The Bidder shall furnish the Interest free Bid Bond @ Rs. <<Amount>> Lakhs (Rupees <<Amount>> Lakhs only) per MWp in the form of Bank Guarantee (BG) / Demand Draft drawn in favour of <<NAME OF THE SPV>>, payable at <<Name of the City>>The initial validity of Bid Bond shall be for a period of <<Number of Months>> months from the Bid Deadline, which shall be extended by the bidder as per the bid validity. If the bidder fails to extend the bid bond validity as per above on request by <<NAME OF THE**

**SPV>>** then entire Bid bond may be forfeited. The Bid Bond of unsuccessful bidders shall be returned within 30 days from the date of issue of Letter of Allocation(s) to successful bidders. **Separate Bid Bond shall be furnished for each location.** Bidders submitting Bid Bond Amount less than that required amount for the tendered capacity” under RESCO than Bid for that location shall not be considered.

3.12.1 The Bid Bond shall be denominated in Indian Rupees and shall:

- i. At the Bidder’s option, be in the form of either a demand draft, or a bank guarantee from a List of banks as given in Annexure-B
- ii. Be confirmed for payment by the branch of the bank giving the bank guarantee.
- iii. be submitted in its original form; copies will not be accepted; and remain valid for a minimum period of 8 months from the date of Techno Commercial bid opening, or beyond any period of extension subsequently requested by <<NAME OF THE SPV>>.

3.12.2 The Successful Bidder shall sign and stamp the Allocation Letter and return the duplicate copy of the same to <<NAME OF THE SPV>> within 30 days from the date of its issue.

3.12.3 The Bid Bond shall be forfeited without prejudice to the Bidder being liable for any further consequential loss or damage incurred to <<NAME OF THE SPV>> under following circumstances:

- a. Hundred percent (100%) of Bid Bond amount, if a Bidder withdraws/revokes or cancels or unilaterally varies his bid in any manner during the period of Bid Validity specified in the RFS document and in accordance with the Clause 3.13.
- b. Hundred percent (100%) of the Bid Bond amount, if the Successful Bidder fails to unconditionally accept the Allocation letter within 15 days from the date of its issue.
- c. Hundred percent (100%) of the Bid Bond amount, if the Successful Bidder fails to furnish the “Performance Security” as per the Clause 3.13.

### **3.13 PERFORMANCE SECURITY / PERFORMANCE BANK GUARANTEE (PBG)**

3.13.1 Within 15 days from the date of issue of Allocation letter, Successful Bidder shall furnish the Performance Security for the amount of Rs <<Amount>> Lakhs/MWp.

The formula applicable to calculate the PBG amount will be:

*PBG amount for allocation in the specified location = (Rs. <<Amount>> Lakh) X Allocated Capacity in MWp in the location = "A"*

*Example: Allocating for 500kWp in all locations, the bidder has to submit PBG of Rs. 20 Lakh X 500/1000 MWp = Rs. 10 Lakh (Rupees ten lakhs only).*

- 3.13.2 Further, any delay beyond 15 days shall attract interest @ 1.25 % per month on the total amount, calculated on day to day basis. <<NAME OF THE SPV>> at its sole discretion may cancel the allocated capacity and forfeit 100% of Bid bond, in case Performance security is not submitted within 60 days of issue of Allocation Letter as per Clause 3.12.3(c). However, total project completion period shall remain same. Part PBG shall not be accepted.
- 3.13.3 The Performance Security shall be denominated in Indian Rupees and shall be in one of the following forms:
- a. a demand draft, or a bank guarantee from the List of banks as given in Annexure-B
  - b. Be confirmed for payment by the branch of the bank giving the bank guarantee.
- 3.13.4 The PBG shall be forfeited as follows without prejudice to the Bidder being liable for any further consequential loss or damage incurred to <<NAME OF THE SPV>>
- a. If the Successful Bidder is not able to identify the projects and submit Project Sanction Documents to the satisfaction of <<NAME OF THE SPV>>, PBG amount, pro-rata to the capacity for which the Successful Bidder is not able to identify the Projects and submit Project Sanction Documents.
  - b. If the Successful Bidder is not able to commission the projects to the satisfaction of <<NAME OF THE SPV>>, PBG amount, pro-rata to the capacity not commissioned by the Successful Bidder. However, Hundred percent (100%) PBG amount furnished for the Sanctioned Capacity, if the Successful Bidder fails to Commission the Projects(s) to the satisfaction of <<NAME OF THE SPV>>, for the already identified locations, which are notified by <<NAME OF THE SPV>> in the RFS or otherwise and for which Allocation letter/Sanction letter has been issued.
  - c. In all the above cases corresponding unidentified/non-commissioned capacity shall stand cancelled.
- 3.13.5 The Performance Security shall be valid for a minimum period of 5Years from the date

of issue of Allocation letter(s) and shall be renewed / extended till the completion of 25 years of O&M from the date of commissioning.

### **3.14 OPENING OF BIDS**

- 3.14.1 All the technical bids are opened on line on the date specified in page 2 of the document. And all the documents as specified in the earlier pages will be downloaded. The downloaded will be considered for evaluation.
- 3.14.2 However Envelope-I of the Bidders shall be opened at Specified in Page 2 of the document hours on Bid Deadline date at <<NAME OF THE SPV>> office, in the presence of one representative from each of the Bidders who wish to be present.
- 3.14.3 Name of the Bidder, shall be read out to all the Bidders at the time of opening of Envelope-I and / or Envelope-II.

### **3.15 RIGHT TO WITHDRAW THE RFS AND TO REJECT ANY BID**

- 3.15.1 This RFS may be withdrawn or cancelled by the <<NAME OF THE SPV>> at any time without assigning any reasons thereof. The <<NAME OF THE SPV>> further reserves the right, at its complete discretion, to reject any or all of the Bids without assigning any reasons whatsoever and without incurring any liability on any account.
  - 3.15.1.1 The <<NAME OF THE SPV>> reserve the right to interpret the Bid submitted by the Bidder in accordance with the provisions of the RFS and make its own judgment regarding the interpretation of the same. In this regard the <<NAME OF THE SPV>> shall have no liability towards any Bidder and no Bidder shall have any recourse to the <<NAME OF THE SPV>> with respect to the selection process. <<NAME OF THE SPV>> shall evaluate the Bids using the evaluation process specified in Section -I, at its sole discretion. <<NAME OF THE SPV>> decision in this regard shall be final and binding on the Bidders.
  - 3.15.1.2 <<NAME OF THE SPV>> reserves its right to vary, modify, revise, amend or change any of the terms and conditions of the Bid before submission. The decision regarding acceptance or rejection of bid by <<NAME OF THE SPV>> will be final.

### **3.16 ZERO DEVIATION**

- 3.16.1 This is a ZERO Deviation Bidding Process. Bidder is to ensure compliance of all provisions of the Bid Document and submit their Bid accordingly. Tenders with any deviation to the bid conditions shall be liable for rejection.

**3.17 EXAMINATION OF BID DOCUMENT**

- 3.17.1 The Bidder is required to carefully examine the Technical Specification, terms and Conditions of Contract, and other details relating to supplies as given in the Bid Document.
- 3.17.2 The Bidder shall be deemed to have examined the bid document including the agreement/contract, to have obtained information on all matters whatsoever that might affect to execute the project activity and to have satisfied himself as to the adequacy of his bid. The bidder shall be deemed to have known the scope, nature and magnitude of the supplies and the requirements of material and labor involved etc. and as to all supplies he has to complete in accordance with the Bid document.
- 3.17.3 Bidder is advised to submit the bid on the basis of conditions stipulated in the Bid Document. Bidder's standard terms and conditions if any will not be considered. The cancellation / alteration / amendment / modification in Bid documents shall not be accepted by <<NAME OF THE SPV>>.
- 3.17.4 Bid not submitted as per the instructions to bidders is liable to be rejected. Bid shall confirm in all respects with requirements and conditions referred in this bid document.

## Section – II

### B. GENERAL CONDITIONS OF CONTRACT (GCC)

#### 3.18 SCOPE OF WORK

3.18.1 The scope of the work for the bidder include Identification of buildings/leasing rooftop of buildings for 25 years, Acknowledgement of Intimation to Distribution Company (DISCOM) as per Annexure-M for grid connectivity, complete design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of the grid connected rooftop solar PV project including operation and maintenance O&M of the project for a period of 25 years after commissioning of the projects as per <<NAME OF THE SPV>>'s acceptance.

#### 3.19 LEVELISED TARIFF

- 3.19.1 The Levelised tariff shall include all the costs related to above Scope of Work. Bidder shall quote for the entire facilities on a “single responsibility” basis such that the total Bid Price covers all the obligations mentioned in the Bidding Documents in respect of Design, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance for a period of 25 years goods and services including spares required if any during O&M period. The Bidder has to take all permits, approvals and licenses, Insurance etc., provide training and such other items and services required to complete the scope of work mentioned above.
- 3.19.2 The Levelised tariff quoted is on lump sum turnkey basis and the bidder is responsible for the total Scope of Work described at Clause 3.18.1 above.
- 3.19.3 The Levelised tariff shall remain firm and fixed and shall be binding on the Successful Bidder till completion of work for payment of subsidy amount irrespective of his actual cost of execution of the project. No escalation will be granted on any reason whatsoever. The bidder shall not be entitled to claim any additional charges, even though it may be necessary to extend the completion period for any reasons whatsoever.
- 3.19.4 The Levelised tariff shall be inclusive of all duties and taxes, insurance etc .The prices quoted by the firm shall be complete in all respect and no price variation /adjustment is allowed. However, statutory variation of taxes and duties may be paid by the rooftop owner.
- 3.19.5 The operation & maintenance of Solar Photovoltaic Power Plant would include

wear, tear, overhauling, machine breakdown, insurance, and replacement of defective modules, invertors / Power Conditioning Unit (PCU), spares, consumables & other parts for a period of 25 years under RESCO model.

- 3.19.6 The Levelised tariff shall be specified in sanction letter based on Successful Bidder's quote. The project cost shall be in accordance with all terms, conditions, specifications and other conditions of the Contract as accepted by the <<NAME OF THE SPV>> and incorporated into the sanction letter.
- 3.19.7 The Bidder shall complete the Price Bid for RESCO as per Format-C furnished in the RFS Documents.

**3.20 <<NAME OF THE SPV>> SERVICE CHARGES**

**(IF APPLICABLE - TO BE DISCUSSED WITH SPV & SNA TO REVISE)**

Service charges of <<NAME OF THE SPV>> shall be computed as 5% the tariff per Wh. The above charges are exclusive of Service Tax which shall be paid extra as per applicable norms at the time of payment. **The <<NAME OF THE SPV>> service charges are non-refundable**

Service charges received will be shared between <<NAME OF THE SPV>> and [SNA] as follows.

<<NAME OF THE SPV>> : 90%  
[SNA] : 10%

*\*NOTE: Smart City SPV can be part of the PPA and a Tripartite Agreement can be signed wherein the SPV facilitated the bid process management and charges a service charge (about 5%). The SPV accordingly generates revenue for 25 years of concession period.*

**3.21 INSURANCE**

- 3.21.1 The Bidder shall be responsible and take an Insurance Policy for transit-cum-storage-cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of materials at site, erection, testing and commissioning. The bidder shall also take appropriate insurance during O&M period.
- 3.21.2 The Bidder shall also take insurance for Third Party Liability covering loss of human life, engineers and workmen and also covering the risks of damage to the third party/material/equipment/properties during execution of the Contract. Before commencement of the work, the Bidder will ensure that all its employees and representatives are covered by suitable insurance against any damage, loss, injury

or death arising out of the execution of the work or in carrying out the Contract. Liquidation, Death, Bankruptcy etc., shall be the responsibility of bidder.

### **3.22 WARRANTIES AND GUARANTEES**

3.22.1 The Bidder shall warrant that the goods supplied under this contract are new, unused, of the most recent or latest technology and incorporate all recent improvements in design and materials. The bidder shall provide system warranty covering the rectification of any and all defects in the design of equipment, materials and workmanship including spare parts for a period of 25 years from the date of commissioning. The successful bidder has to transfer all the Guarantees /Warrantees of the different components to the Owner of the project. The responsibility of operation of Warranty and Guarantee clauses and Claims/Settlement of issues arising out of said clauses shall be joint responsibility of the Successful bidder and the owner of the project and <<NAME OF THE SPV>> will not be responsible in any way for any claims whatsoever on account of the above. All the guarantee terms are as per MNRE specifications.

### **3.23 TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP**

3.23.1 The Design, engineering, manufacture, supply, installation, testing and performance of the equipment shall be in accordance with latest appropriate IEC/Indian Standards as detailed in the Section- III (Technical specifications) of the bid document. Where appropriate Indian Standards and Codes are not available, other suitable standards and codes as approved by the MNRE shall be used.

3.23.2 The specifications of the components should meet the technical specifications mentioned in Section III.

3.23.3 Any supplies which have not been specifically mentioned in this Contract but which are necessary for the design, engineering, manufacture, supply & performance or completeness of the project shall be provided by the Bidder without any extra cost and within the time schedule for efficient and smooth operation and maintenance of the Solar PV plant.

### **3.24 OPERATION & MAINTENANCE (O&M) GUIDELINES TO BE MANDATORILY FOLLOWED BY BIDDERS**

3.24.1 The bidder shall be responsible for all the required activities for successful operation and maintenance of the Rooftop Solar PV system for a period of 25 years from the date of commissioning of the plant.

- 3.24.2** For system sizes above 25 kWp, below mentioned guidelines, shall be followed. In addition, O&M practices shall be strictly followed as per Annexure D. For projects up to 25 kWp, the O&M guidelines to be mandatorily followed by bidders shall be as per Annexure E.
- 3.24.3** O&M of Solar Power Plant shall be compliant with grid requirements to achieve committed energy generation.
- 3.24.4** Deputation of qualified and experienced engineer/ technicians till the O&M period at project site.
- 3.24.5** Periodic cleaning of solar modules.
- 3.24.6** Periodic checks of the Modules, PCUs and Boss shall be carried out as a part of routine preventive and breakdown maintenance.
- 3.24.7** Immediate replacement of defective Modules, Invertors/PCUs and other equipment as and when required.
- 3.24.8** Supply of all spares, consumables and fixtures as required. Such stock shall be maintained for all associated equipments and materials as per manufacturer/ supplier's recommendations.
- 3.24.9** The entire equipment testing instrument required for Testing, Commissioning and O&M for the healthy operation of the Plant shall be maintained by the Bidder. The testing equipments must be calibrated once every 2 years from NABL accredited labs and the certificate of calibration must be kept for reference as required.
- 3.24.10** If negligence/ mal-operation on part of the Bidder's operator results in failure of equipment, such equipment should be repaired/ replaced by the Bidder free of cost.
- 3.24.11** Co-ordination with Owner / DISCOM / CEIG as per the requirement for Joint Metering Report (JMR). The person in charge present at site from bidder's side shall take a joint meter reading in the presence of rooftop owner on a **daily basis**. Furnishing generation data (JMR) each month to <<NAME OF THE SPV>> positively by 1<sup>st</sup> week of every month for the previous month. Failure to adhere may result in non-disbursal of subsidy.
- 3.24.12** 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 break down maintenance along with the date of maintenance, reasons for the breakdown, duration of the breakdown, steps taken to attend the breakdown, etc.

**3.24.13** For any issues related to operation & maintenance, a toll-free number shall be made available to the rooftop owner/ plant owner to resolve within 72 hours. If not attended within such stipulated time, a complaint may be raised to<<NAME OF THE SPV>>, pursuant to which, a penalty of Rs. 10,000 for full month or more shall be imposed for a system capacity above 100 kWp. Repetition of such instances for more than 2 times a year may lead to the stop the next tranche of subsidy by the <<NAME OF THE SPV>>. Further, if the outage of the plant is more than 30 days continuously, then the 50% PBG amount shall be encashed by <<NAME OF THE SPV>> and if the outage is exceeding more than 60 days than complete PBG amount shall be encashed by <<NAME OF THE SPV>>. This will be applicable till 25 years of O&M as per the Scope of the RFS.

**3.24.14** If any jobs covered in O&M Scope as per RFS are not carried out by the contractor/ Bidders during the O&M period, the <<NAME OF THE SPV>> shall take appropriate action as deemed fit. <<NAME OF THE SPV>> reserves the right to make surprise checks/ inspection visits at its own or through authorized representative to verify the O&M activities being carried out by the Bidder. Failure to adhere to above guidelines, will result in penal action including debarring from participation in next tender.

### **3.25 METERING AND GRID CONNECTIVITY**

Metering and grid connectivity of the roof top solar PV system under this scheme would be the responsibility of the Bidder in accordance with the prevailing guidelines of the concerned DISCOM and / or CEA (if available by the time of implementation). <<NAME OF THE SPV>> could facilitate connectivity; however the entire responsibility lies with bidder to get synchronized the system and to get all the statutory obligations.

### **3.26 PLANT PERFORMANCE EVALUATION**

The successful bidder shall be required to meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning and related Capacity Utilization Factor (CUF) as per the GHI levels of the location during the O&M period. PR should be shown minimum of 75% at the time of inspection for initial commissioning acceptance to qualify. Minimum CUF of 15% should be maintained for a period of 25years. The bidder should send the periodic plant (fort nightly) output details to <<NAME OF THE SPV>> for ensuring the CUF. The PR will be measured at Inverter output level during peak radiation conditions.

### **3.27 PROGRESS REPORT**

The bidder shall submit the progress report daily/ weekly/ fortnightly/ monthly to

<<NAME OF THE SPV>> in Prescribed Proforma. <<NAME OF THE SPV>> will have the right to depute his/their representatives to ascertain the progress of contract at the premises of works of the bidder.

### 3.28 **Submission of Project Completion Report (PCR)**

The bidder shall submit the Project Completion Report in (soft copy and signed copy) after commissioning of the project as per the Scope of RFS to <<NAME OF THE SPV>> as per the Format given in **Annexure H**. Non submission of the report shall be considered as “Breach of Contract” and shall attract punitive actions as per the relevant provisions of the Contract including non-release of subsidy. However, the decision of <<NAME OF THE SPV>> shall be final in this regard.

### 3.29 **Submission of O&M Report (OMR)**

The bidder shall submit the Monthly O&M Report mandatorily to <<NAME OF THE SPV>> as per the Format enclosed at **Annexure K**. Non submission of the report shall be considered as “Breach of Contract” and shall attract punitive actions as per the relevant provisions of the Contract including non-release of subsidy. However, the decision of <<NAME OF THE SPV>> shall be final in this regard.

### 3.30 **PROJECT INSPECTION.**

The project progress will be monitored by <<NAME OF THE SPV>> and the projects will be inspected for quality at any time during commissioning or after the completion of the project either by officer(s) from <<NAME OF THE SPV>> or any authorized agency/ experts designated / authorized by <<NAME OF THE SPV>> from time to time. <<NAME OF THE SPV>> shall depute a technical person(s) from its list of empaneled experts/ agencies updated from time to time for inspection, Third party verification, monitoring of system installed to oversee, the implementation as per required standards and also to visit the manufacturer’s facilities to check the quality of products as well as to visit the system integrators to assess their technical capabilities as and when required. The cost of Inspection shall be borne by the **Authority/Owner**. The projects shall be inspected at any time during commissioning or after the completion of the project(s) as follows:

#### **Project Capacity up to 25 kWp**

Inspection shall be carried out by inspecting officer(s) nominated by <<NAME OF THE SPV>>, <<NAME OF THE SPV>> officials or BEE Certified Energy Auditors or any other agencies to be notified by <<NAME OF THE SPV>> from time to time. (Preferably

undergone Training from NISE or any such institutions authorized by MNRE.)

#### **Project Capacity above 25 kWp to 100 kWp**

Inspection shall be carried out by Inspecting officer(s) nominated by <<NAME OF THE SPV>>, <<NAME OF THE SPV>> officials, or from the officials of TERI, NPC or any other agencies to be notified by <<NAME OF THE SPV>> from time to time.

#### **Project Capacity from 101 kWp to 500 kWp**

Inspection shall be carried out by Inspecting officer(s) nominated by <<NAME OF THE SPV>>, <<NAME OF THE SPV>> officials, or from the officials of following listed agencies/bodies

1. Govt./NABL accredited agencies/Labs,
2. NISE,
3. CPRI,
4. DNV Climate Change Services AS (DNV)
5. TÜV SÜD South Asia Private Limited (TÜV SÜD)
6. Bureau VERITAS Certification Holding SAS (BVCH)
7. TÜV Rheinland (China) Ltd. (TÜV Rheinland)
8. TÜV NORD CERT GmbH (TÜV NORD)
9. Any other agencies/bodies to be notified by <<NAME OF THE SPV>> on time to time.

### **3.31 CANCELLATION OF SUBSIDY**

<<NAME OF THE SPV>> will not release the subsidy for any shortcomings in commissioning as per technical specifications mentioned or for performance ratio (PR) below the specified limit (75%) after commissioning. Also PBG shall be forfeited in case Average CUF falls below 15% during entire O&M period.

### **3.32 APPLICABLE LAW**

The Contract shall be interpreted in accordance with the laws of the Union of India/Government of <<Name of the State>>.

### **3.33 SETTLEMENT OF DISPUTE**

3.33.1. If any dispute of any kind whatsoever arises between <<NAME OF THE SPV>> and Successful bidder in connection with or arising out of the contract including without prejudice to the generality of the foregoing, any question regarding the existence, validity or termination, the parties shall seek to resolve any such dispute or difference by mutual consent.

3.33.2. If the parties fail to resolve, such a dispute or difference by mutual consent, within 45 days of its arising, then the dispute shall be referred by either party by giving notice to

the other party in writing of its intention to refer to arbitration as hereafter provided regarding matter under dispute. No arbitration proceedings will commence unless such notice is given. Any dispute, in respect of which a notice of intention to commence arbitration has been given in accordance with Sub Clause 3.33.2, shall be finally settled by arbitration.

**3.34 IN CASE THE CONTRACTOR IS A PUBLIC SECTOR ENTERPRISE OR A GOVERNMENT DEPARTMENT.**

In case the Contractor is a Public Sector Enterprise or a Government Department, the dispute shall be referred for resolution in Permanent Machinery for Arbitration (PMA) of the Department of Public Enterprise, Government of India. Such dispute or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary / Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally and conclusive. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.

**3.35 IN CASE THE CONTRACTOR IS NOT A PUBLIC SECTOR ENTERPRISE OR A GOVERNMENT DEPARTMENT.**

**3.35.1** In all other cases, any dispute submitted by a party to arbitration shall be heard by an arbitration panel composed of three arbitrators, in accordance with the provisions set forth below.

**3.35.2** The <<NAME OF THE SPV>> (SPV) and the Contractor shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the two arbitrators do not succeed in appointing a third arbitrator within Thirty (30) days after the latter of the two arbitrators has been appointed, the third arbitrator shall, at the request of either party, be appointed by the Appointing Authority for third arbitrator which shall be the President, Institution of Engineers.

**3.35.3** If one party fails to appoint its arbitrator within thirty (30) days after the other party has named its arbitrator, the party which has named an arbitrator may request the Appointing Authority to appoint the second arbitrator.

**3.35.4** If for any reason an arbitrator is unable to perform its function, the mandate of the Arbitrator shall terminate in accordance with the provisions of applicable laws as mentioned in Clause 3.32 (Applicable Law) and a substitute shall be appointed in the same manner as the original arbitrator.

**3.35.5** Arbitration proceedings shall be conducted with The Arbitration and Conciliation Act, 1996. The venue or arbitration shall be <<Name of the State>>.

**3.35.6** The decision of a majority of the arbitrators (or of the third arbitrator chairing the arbitration panel, if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction as decree of the court. The parties thereby waive any objections to or claims of immunity from such enforcement.

**3.35.7** The arbitrator(s) shall give reasoned award.

**3.35.8** Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the agreement unless they otherwise agree.

**3.35.9** Cost of arbitration shall be equally shared between the Successful bidder or Contractor and <<NAME OF THE SPV>>.

### **3.36 FORCE MAJEURE**

**3.36.1** Notwithstanding the provisions of clauses contained in this RFS document; the contractor shall not be liable to forfeit

(a) Security deposit for delay and

(b) Termination of contract; if he is unable to fulfill his obligation under this contract due to force majeure conditions.

**3.36.2** For purpose of this clause, "Force Majeure" means an event beyond the control of the contractor and not involving the contractor's fault or negligence and not foreseeable, either in its sovereign or contractual capacity. Such events may include but are not restricted to Acts of God, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes etc. Whether a "Force majeure" situation exists or not, shall be decided by <<NAME OF THE SPV>> and its decision shall be final and binding on the contractor and all other concerned.

**3.36.3** In the event that the contractor is not able to perform his obligations under this contract on account of force majeure, he will be relieved of his obligations during the force majeure period. In the event that such force majeure extends beyond six months, <<NAME OF THE SPV>> has the right to terminate the contract in which case, the security deposit shall be refunded to him.

**3.36.4** If a force majeure situation arises, the contractor shall notify <<NAME OF THE SPV>> in writing promptly, not later than 14 days from the date such situation arises. The contractor shall notify <<NAME OF THE SPV>> not later than 3 days of cessation of force majeure conditions. After examining the cases, <<NAME OF THE SPV>> shall decide and grant suitable additional time for the completion of the work, if required.

### **3.37 LANGUAGE**

3.37.1 All documents, drawings, instructions, design data, calculations, operation, maintenance and safety manuals, reports, labels and any other data shall be in English Language. The contract agreement and all correspondence between the <<NAME OF THE SPV>> and the bidder shall be in English language.

### **3.38 OTHER CONDITIONS**

3.38.1 The Successful bidder shall not transfer, assign or sublet the work under this contract or any substantial part thereof to any other party without the prior consent of <<NAME OF THE SPV>> in writing.

3.38.2 Deleted.

### **3.39 SUCCESSORS AND ASSIGNS:**

**3.39.1** In case the <<NAME OF THE SPV>> or Successful bidder may undergo any merger or amalgamation or a scheme of arrangement or similar re-organization & this contract is assigned to any entity (ies) partly or wholly, the contract shall be binding mutatis mutandis upon the successor entities & shall continue to remain valid with respect to obligation of the successor entities.

### **3.40 SEVERABILITY:**

It is stated that each paragraph, clause, sub-clause, schedule or annexure of this contract shall be deemed severable & in the event of the unenforceability of any paragraph, clause sub-clause, schedule or the remaining part of the paragraph, clause,

sub-clause, schedule annexure & rest of the contract shall continue to be in full force & effect.

#### **3.41 COUNTERPARTS:**

This contract may be executed in one or more counterparts, each of which shall be deemed an original & all of which collectively shall be deemed one of the same instrument.

#### **3.42 RIGHTS & REMEDIES UNDER THE CONTRACT ONLY FOR THE PARTIES:**

This contract is not intended & shall not be construed to confer on any person other than the <<NAME OF THE SPV>> & Successful bidder hereto, any rights and / or remedies herein.

#### **3.43. PREFERENCE FOR M.S.M.E/ STATE OR CENTRAL PSUS**

As per the Public Procurement Policy for Micro and Small Enterprise (MSEs) order 2012, issued vide Gazette Notification number 503, dated 23.03.2012 by Ministry of Micro, Small and Medium Enterprise of Govt. of India, and specific to this tender, MSEs must be registered with any of the following agencies/bodies shall be exempted from bid bond submission on production of valid registration certificate.

(i) District Industries Centre (DIC) /Udhyog Aadhaar

(ii) National Small Industries Corporation (NSIC)

MSME participating in the tender must submit the certificate of registration with any one of the above agencies. The registration certificate issued from any of the above agencies must be valid as on close date of the tender.

The MSEs, who have applied for registration or renewal of registration with any of the above agencies/ bodies, but have not obtained the valid certificate as on close date of the tender, are not eligible for exemption/preference.

#### **3.44 CORRESPONDENCE**

Bidder requiring any clarification on bid documents may contact in writing or by Fax /E Mail given in page2 of this document. Verbal clarifications and information given by the <<NAME OF THE SPV>> or its employees or its Representatives shall not be in any way entertained.

## **SECTION-III**

### **EVALUATION CRITERIA OF BIDS**

#### **4 BID EVALUATION**

##### **4.1 BID EVALUATION**

The evaluation process comprises the following four steps:

- Step I - Responsiveness check of Techno Commercial Bid
- Step II -Evaluation of Bidder's fulfillment of Eligibility Criteria as per Clause 3.3 of Section-I
- Step III -Evaluation of Price Bid
- Step IV -Successful Bidders(s) selection

##### **4.2. RESPONSIVENESS CHECK OF TECHNO COMMERCIAL BID**

The Techno Commercial Bid submitted by Bidders shall be scrutinized to establish responsiveness to the requirements laid down in the RFS subject to Clause 3.3... Any of the following may cause the Bid to be considered "Non-responsive", at the sole discretion of <<NAME OF THE SPV>>

- a. Bids that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, power of attorney supported by a board resolution, applicable undertakings, format for disclosure, valid Bid Bond, etc.;
- b. Bid not signed by authorized signatory and /or stamped in the manner indicated in this RFS;
- c. Material inconsistencies in the information /documents submitted by the Bidder, affecting the Eligibility Criteria;
- d. Information not submitted in the formats specified in this RFS;
- e. Bid being conditional in nature;
- f. Bid not received by the Bid Deadline;
- g. Bid having Conflict of Interest;

- h. More than one Member of a Bidding Company using the credentials of the same Parent Company /Affiliate;
- i. Bidder delaying in submission of additional information or clarifications sought by <<NAME OF THE SPV>> as applicable;
- j. Bidder makes any misrepresentation.

Each Bid shall be checked for compliance with the submission requirements set forth in this RFS before the evaluation of Bidder's fulfillment of Eligibility Criteria is taken up. Clause 3.3 shall be used to check whether each Bidder meets the stipulated requirement.

## **5. PRELIMINARY EXAMINATION**

- 5.1. <<NAME OF THE SPV>> will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and stamped and whether the Bids are otherwise in order.
- 5.2. Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total Amount that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total amount shall be corrected. If there is a discrepancy between words and figures, the amount written in words will prevail.
- 5.3. If there is a discrepancy between the unit price Quoted online tender, and unit price quoted in envelope no. III, the rate quoted through online will prevail.

## **6. EVALUATION OF BIDDER'S FULFILMENT OF ELIGIBILITY CRITERIA**

- 6.1. Evaluation of Bidder's Eligibility will be carried out based on the information furnished by the Bidder as per the prescribed Formats and related documentary evidence in support of meeting the Eligibility Criteria as specified in Clause 3.3. Non-availability of information and related documentary evidence for the satisfaction of Eligibility Criteria may cause the Bid to be non-responsive.

### **6.2. EVALUATION OF PRICE BID**

Price Bid (Envelope III) of the Qualified Bidders shall be opened in presence of the

representatives of such Qualified Bidders, who wish to be present, on a date as may be intimated by <<NAME OF THE SPV>> to the Bidders through <<NAME OF THE SPV>> website \_\_\_\_\_ or Email. The evaluation of Price Bid shall be carried out based on the information furnished in Envelope III (Price Bid). The Price Bid submitted by the Bidders shall be scrutinized to ensure conformity with the RFS Any Bid not meeting any of the requirements of this RFS may cause the Bid to be considered “Non-responsive” at the sole decision of the <<NAME OF THE SPV>>.

#### 6.2.1. RESCO

The tariff quoted shall be evaluated as follows;

- a. The tariff shall be evaluated separately on Levelised tariff basis quoted.
- b. Since the maximum allowable Levelised tariff over 25 years assuming the discounting rate of 11% only Rs 6.00/kWh (As per <<NAME OF THE SPV>>), so bidder submitting bid above the maximum allowable project cost shall be rejected.

#### 6.3. SUCCESSFUL BIDDER(S) SELECTION

- 6.3.1. Bids qualifying in Clause 3.3 shall only be evaluated in this stage.
- 6.3.2. Based on the Levelised Tariff quoted in all Price Bids of Qualified Bidders shall be ranked in the ascending order. (Automatic selection will be done in online tenders).
- 6.3.3. A Qualified Bidder who has been selected as the Successful Bidder based on this RFP shall execute the project through the Project Company especially incorporated as
- 6.3.4. For all purposes, lowest bidder will be declared as the successful bidder.
- 6.3.5. The amount of subsidy to be provided to the successful bidder(s) shall be dependent upon the price quoted by the L1 bidder i.e. subsidy to be provided to the L1 bidder and as such the subsidy shall be same for all the successful bidders
- 6.3.6. The qualified bidders except the L1 bidder will be given 10 days from the date of notification of L1 price on <<NAME OF THE SPV>> website and also through e mails to give their consent to execute the work at L1 price, failing which it will be assumed that they are not interested to match L1 price. In case of more than one such response is received expressing their consent to match the L1 price and to execute

the capacity then the preference shall be given in the ascending order of the bid quoted by the bidder. i.e. first preference will be given to L2 then L3 and so on until entire capacity is allocated. The bidder who matches the L1 price will also be declared Successful bidder.

- 6.3.7. L1 bidder will be given 20 days time for entering into the agreement. If L1 bidder does not turn with 20 days from the date of issue of Letter of Acceptance.
- 6.3.5 Letter(s) of Allocation (LOA): The Letter(s) of Allocation (LOA) shall be issued to all Bidders selected as per the provisions of this Clause 6.3.2
- 6.3.6 Each Successful Bidder shall acknowledge the LOA and return duplicate copy with signature & stamp of the authorized signatory of the Successful Bidder to the <<NAME OF THE SPV>> within 7 (seven) days of issue of LOA.
- 6.3.7 If the Successful Bidder, to whom the Letter of Allocation has been issued, does not fulfill any of the conditions specified in Bid document, the <<NAME OF THE SPV>> reserves the right to annul/cancel the award of the Letter of Allocation of such Successful Bidder and forfeit the PBG/Bid Bond and can award the work to the others bidder as per the original list of preferences i.e., L2, L3, L4.....
- 6.3.8 In any instance, if only one bidder submit the bid that too for a part capacity. In such cases, <<NAME OF THE SPV>> at its sole discretion may allocate the additional capacity equal to the bidded capacity to the same bidder based on the bidders consent. If the capacity still remains, <<NAME OF THE SPV>> may invite consent from the other successful bidders for executing the balance unallocated capacity and the same may be allocated to the other interested bidders depending upon their consent. The capacity will be allocated as per the methodology mentioned above and as per <<NAME OF THE SPV>>'s discretion.
- 6.3.9 The <<NAME OF THE SPV>> at its own discretion, has the right to reject any or all the Bids without assigning any reason whatsoever, at its sole discretion.
- 6.3.10 There shall be no negotiation on the levelized tariff between the <<NAME OF THE SPV>> and the Bidder(s), during the process of evaluation.

#### 6.4. INCREASE/DECREASE OF BIDDER ALLOCATED CAPACITY

- 6.4.1. <<NAME OF THE SPV>> reserves the right to [increase/decrease] the Bidder(s) Allocated Capacity up to fifty percent (50%) of the allocated capacity at the sole discretion of <<NAME OF THE SPV>> on the request of the allotted bidders at L1 price.
- 6.4.2. In case bidder has requested for reduction in Allocated capacity/ due to non willingness of the owners of the buildings, then up to 50% reduction of allocated capacity only can be accepted by <<NAME OF THE SPV>> without forfeiture of PBG at <<NAME OF THE SPV>> sole discretion subject to the condition that bidder has received at least sanction of 75% of allocated capacity.
- 6.4.3. In case capacity is modified by <<NAME OF THE SPV>>)as per Clause 6.4.1 & 6.4.2 above, Successful bidder shall submit the equivalent amount of PBG/Amended PBG to <<NAME OF THE SPV>> within 30 days from the date of issue of allocation letter /sanction letter.

#### 6.5. TRANSFER OF CAPACITY

- 6.5.1. In case a Successful Bidder is facing genuine difficulty in execution of project as per letter of allocation. <<NAME OF THE SPV>> shall allow transfer of allocated capacity in full or part duly forfeiting the deposits.
- 6.5.2. Amended Performance security (PBG pertaining to additional capacity allocated or capacity transferred shall be submitted by bidder within 15 days from the date of issue of such notification.)
- 6.5.3. The decision of the <<NAME OF THE SPV>> is the final in this regard.

**Note:** It is the prerogative of <<NAME OF THE SPV>> to increase/decrease/transfer the Successful Bidder allocated capacity on bidder's request.

#### 6.6 NOTIFICATION TO SUCCESSFUL BIDDERS.

The name of Successful Bidders shall be notified indicating the allocated capacity and the awarded project price on the website \_\_\_\_\_ and also shall be notified individually through letter of allocation.

#### 6.7 MAXIMUM CHARGEABLE TARIFF FOR ENERGY SALE UNDER RESCOMODEL

Energy sale will be allowed under RESCO model also and the maximum chargeable Levelised tariff (per year) is up to **Rs. 6.00/kWh** for 25 years.

## 6.8. PROJECT ALLOCATION AND SANCTION

- 6.8.1. The identification of the projects (roof tops) at time of bidding is not mandatory. The Bidders, however, in their own interest are advised to make a preliminary survey of availability of roof tops in the city for which they intend to Bid, as well as issue of Grid connectivity, as non-availability of roof tops and non-completion of other formalities after allocation of project will result in forfeiture of Bid Bond/PBG amount submitted by them. However the available shade free roof top areas in Area Based Development (ABD) area of <<Name of the City>>Municipal Corporation are enclosed for reference.
- 6.8.2. The Successful Bidders selected as described in Clause 6.3 above shall be issued Letter of Allocation (LOA) indicating Levelised tariff.
- 6.8.3. The bidders, who have been notified as Successful Bidders, shall be given 12 months from the date of issue of Letter of Allocation for commissioning of the allocated capacity in which roofs identification is also in the bidder's scope. However the list of shadow free area over public buildings is enclosed along with this document.
  - 6.8.3.1. Preference should be given to <<NAME OF THE SPV>> identified roofs first. In the event of offer given by <<NAME OF THE SPV>> to the Bidder to execute the project in the <<NAME OF THE SPV>> identified roof, the time for submission of project sanction documents by the bidder to <<NAME OF THE SPV>> will be 30 days from the date of issue of allocation letter which can be extended depending upon the merit of the case. Failure of non-compliance of same shall lead to forfeiture of PBG for that
  - 6.8.3.2. Further, Successful Bidders can start submitting their Project sanction documents as soon as they receive LOA from <<NAME OF THE SPV>>. Project sanction documents shall be submitted to <<NAME OF THE SPV>>. If after 3 months, the successful bidder could not identify and commission the rooftop(s) and submit Project sanction documents, in such case PBG for unidentified allocated capacity may be forfeited and the unidentified allocated capacity gets cancelled and bidder including its affiliates/group companies/ Parent / Ultimate parent company may be debarred to participate in <<NAME OF THE SPV>>'s future tenders for a period as decided by the competent authority of <<NAME OF THE SPV>>.
  - 6.8.3.3. Successful bidders shall share the time and date stamping photographs of the roofs and location details with <<NAME OF THE SPV>> before entering into any legal agreement with the Owner. This has to ensure that the location identified by the

Successful bidder is freshly identified and strictly complying the norms.

- 6.8.4. For identification of projects, <<NAME OF THE SPV>> or state level nodal agency (SNA) i.e., [SNA] may provide help. However the entire responsibility of finding the buildings lies with the Bidder.
- 6.8.5. Onus of identifying the buildings/rooftops and completing the other documentation like finalizing the Project report and entering into agreements with the buildings/rooftops owners lies with the Successful Bidder with above mentioned time frame even for the buildings/rooftops identified by <<NAME OF THE SPV>> for preferential installation.
- 6.8.6. After the Project Sanctioned Document have been submitted by the Successful Bidder/ Project Developer and accepted by <<NAME OF THE SPV>>, <<NAME OF THE SPV>> will issue the Sanction Letter(s) for the Project (s) indicating the subsidy which will be disbursed in line with the provisions of the RFS document. The Bidder shall complete the design, engineering, manufacture, supply, storage, civil work, erection, testing & commissioning of project within 12 months from the date of issue of allocation Letter.
- 6.8.7. If the Bidder fails to commission the project within specified time, penalty on per day basis calculated for the Performance Security on a 6 month's period would be levied. After 12 months, the project will get cancelled and the total PBG would be forfeited. Please refer Clause 8& 9 below for details.

**6.9. ACHIEVEMENT–LINKED INCENTIVESDISBURSEMENT:**

6.9.1 In letter no. 03/88/2015-16/GCRT OF GOI, MNRE (Solar ENERGY group) DT.04-05-2016 approved for 'Achievement–Linked Incentives and Awards" under 'Grid connected rooftop and small solar power plants program' on government buildings. The details are as follows.

S.No.	Achievement vis-à-vis target allocation	Incentive
1	80% and above within the sanctioned period	Rs. 18,750/ per kw
2	Below 80% and up to 50% within the sanctioned period	Rs. 11,250/ per kw
3	Below 50% delayed commissioning up to 12 months beyond the sanctioned period	Rs. 7,500/ per kw

In addition to the above cash awards along with certificates/shields will be given as per above circular by the ministry.

## SUBSIDY

- 6.9.2 [SNA], may extend financial assistance up to [20%] of the project cost subject to maximum of Rs. [16/- per watt] subject to availability of funds.
- 6.9.3 The Project cost awarded to the bidder through letter of allocation shall be considered as the Project Cost for this purpose. Total liability of <<NAME OF THE SPV>> under this contract shall be limited to release of this subsidy on the L1 Project awarded to the Bidder through letter of allocation if applicable.
- 6.9.4 The Subsidy will be disbursed as follows.
- a) 70% after successful installation and commissioning of the each sub project
  - b) 30% after first year of successful operation of the project
- 6.9.5 If any extra facilities are agreed between the Successful Bidder and the owner beyond the scope of this allocation letter/ RFS document than extra payment shall be made by the Owner on mutually decided (Owner & Successful Bidder) terms and conditions. In any case, <<NAME OF THE SPV>> shall neither interfere in their business affairs nor shall be liable for extra claim by Successful Bidder or Owner.
- 6.9.6 <<NAME OF THE SPV>> may consider to release as case to case basis depending on the actions taken by the Successful Bidder and the progress achieved in the process, the subsidy amount indicated at Clause 6.9 above in case Grid connectivity of the Project has not been done although the Project is otherwise ready for the commissioning. However, the PBG shall not be released till the project is connected with the Grid. No "NOC" from DISCOM is required for the grid connectivity. However, this does not exempt the project requirement for grid connectivity. For avoidance of doubts on grid connectivity respective <<NAME OF THE SPV>> and DISCOM norms must be followed.
- 6.9.7 In case the Successful Bidder/ Project Developer are not the Owner of the Project, subsidy shall be released to Successful Bidder/ Project Developer after written consent of Owner only.
- 6.9.8 Subsidy will be released after inspection of [SNA] and by confirming all the installations as per MNRE.

## 7. OTHER CONDITIONS

7.1. Bidder or owner of the building has to obtain all the necessary approvals/Consents/Clearances required for Erection, Testing, Commissioning and O&M of the project including Grid connectivity. <<NAME OF THE SPV>> shall not have any responsibility in this regard.

7.2. Bid bond and Bid document fee submission:

Bid bond shall be submitted in a separate envelop (along with Bid document fee) superscripted with name of <<NAME OF THE SPV>> for which Bid is being quoted & other details .However, Processing fee shall be paid online at the time of tendering.

7.3. **TAX EXEMPTIONS:**

Price bids are invited inclusive of Taxes and duties. However, Tax exemptions including certificates of any sort, if available may be dealt with the concerned Dep't of Govt. of India by the bidder. <<NAME OF THE SPV>> in no case will be responsible for providing any tax exemptions to the bidder.

7.4. **ELIGIBILITY OF STANDALONE SYSTEM:**

7.4.1. Standalone system is not allowed under this scheme. The system should be grid connected.

7.5. **REQUIREMENT OF APPROVALS ON MAKES OF THE COMPONENTS:**

7.5.1. The modules should be manufactured in India only. Rest of the components can be procured from any source. However these items should meet the Technical specification and standards mentioned in RFS.

7.6. **OPERATION OF THE SYSTEM DURING WEEKENDS AND GENERAL HOLIDAYS AND CALCULATION OF CUF:**

7.6.1. During grid failure, the Solar PV system stops generating. Any instances of grid failure need to be mentioned in the monthly report and those instances need to be authorized by local DISCOM. Then the period will be excluded in calculation of CUF.

7.7. Taxes, duties and service charges are included in the rates of the *bid processing fee*.

## 8. LIQUIDATED DAMAGES (LD) FOR DELAY IN PROJECT IMPLEMENTATION

- 8.1. <<NAME OF THE SPV>> will issue the sanction letter(s) for the Project (s) indicating the subsidy amount(s) which will be disbursed in line with the provisions of the RFS document. The Bidder shall complete identification of the roof(s), "submission of project sanction documents as per the requirement of <<NAME OF THE SPV>>", Design, Engineering, Manufacture, Supply, storage, civil work, erection, testing & commissioning of each project within 12 months from the date of issue of Allocation letter.
- 8.2 If the bidder fails to commission the sanctioned project within specified time, Liquidated Damages on per day basis calculated for the Performance Security on a 12 months period would be levied. After 12 months the project will get cancelled and the total PBG amount would be forfeited.

Ex: If a project of 1 MWp is delayed by 36 days then the Liquidated Damages will be levied as given below.

Liquidated Damages = ((Performance Security)/180 days)\*delayed days = (22, 50,000 /180)\*36 = Rs.4, 50, 000.

## 9. TIME OF COMPLETION OF ALLOCATED CAPACITY:

- 9.1 Project completion shall be **12 months from the date of issue of allocation letter**. Failure of non- compliance of same shall lead to forfeiture of PBG in proportion to the capacity not identified.
- 9.2 For any additional capacity, bidder shall complete/commission the capacity within 3 months from the date of issue of allocation letter/sanction letter. This will include submission of project sanction documents to the satisfaction of <<NAME OF THE SPV>>.
- 9.3 The period of construction given in Time Schedule includes the time required for mobilization as well as testing, rectifications if any, retesting and completion in all respects to the entire satisfaction of the <<NAME OF THE SPV>>.
- 9.4 A joint program of execution of the Work will be prepared by the <<NAME OF THE SPV>> or its representative nominated for the purpose and Successful bidders based on priority requirement of this project. This program will take into account the time of completion mentioned in clause 9.1 above and the time allowed for the priority Works by the <<NAME OF THE SPV>>.

9.5 Monthly/Weekly implementation program will; be drawn up by the <<NAME OF THE SPV>> jointly with the Successful bidder, based on availability of Work fronts as per Clause 9.4 above. Successful bidder shall scrupulously adhere to these targets /program by deploying adequate personnel, tools and tackles and he shall also supply himself all materials of his scope of supply in good time to achieve the targets/program Subsidy. In all matters concerning the extent of targets set out in the weekly and monthly program and the degree of achievements, the decision of the <<NAME OF THE SPV>> will be final and binding.

#### 10. **USER ID FOR UPDATING THE PROJECT PROGRESS ON BI-WEEKLY BASIS**

Successful bidder authorized representative in whose name PoA has been executed and submitted along with the bid shall be provided Password and User id for updating the project progress on **monthly** basis in the sanction letter/Allocation letter. Successful bidder should update the info as per the requirement of the software tool .Non updating of the progress shall be considered as no progress and shall attract punitive actions as per the relevant provision of the Contract. However, the decision of <<NAME OF THE SPV>> shall be final in this regard. User id and passwords shall be provided to the <<NAME OF THE SPV>>, DISCOM and [SNA] to check the daily production and performance.

#### 11. **INSPECTION AND AUDIT BY THE GOVERNMENT**

11.1. The Successful bidder shall permit the <<NAME OF THE SPV>> to inspect the Successful bidder's site, accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the <<NAME OF THE SPV>>, if so required by the <<NAME OF THE SPV>> any time.

#### 12. **COMMISSIONING /COMPLETION CERTIFICATE:**

12.1. Application for completion/commissioning certificate:

When the Successful bidder fulfils his obligation under the Contract, he shall be eligible to apply for Completion Certificate. The <<NAME OF THE SPV>> shall normally issue to the Successful bidder the Completion Certificate within one month after receiving any application therefore from the Successful bidder after verifying from the completion documents and satisfying himself that the Work has been completed in accordance with and as set out in Contract documents. The Successful bidder, after obtaining the Completion Certificate, is eligible to avail the subsidy as per the Clause 6.9.

**12.1.1. DOCUMENT SUBMISSION FOR ISSUE COMMISSIONING/ COMPLETION CERTIFICATE :**

For the purpose of Clause 12.1 above the following documents will be deemed to form the completion documents:

- a. Checklist for inspection of Roof top SPV power plants as per <<NAME OF THE SPV>> format.
- b. Project completion report from successful bidder as per <<NAME OF THE SPV>>/MNRE/[SNA] format
- c. Project completion/satisfaction certificate from roof top owners/project developers.

**12.1.2. FINAL DECISION AND FINAL CERTIFICATE:**

- 12.1.2.1. Upon completion of 25 years of O&M and subject to the <<NAME OF THE SPV>> being satisfied, the <<NAME OF THE SPV>> shall (without prejudice to the rights of the <<NAME OF THE SPV>> to retain the provisions of relevant Clause hereof) otherwise give a certificate herein referred to as the Final Certificate to that effect and the Successful bidder shall not be considered to have fulfilled the whole of his obligations under Contract until Final Certificate shall have been given by the <<NAME OF THE SPV>> notwithstanding any previous entry upon the Work and taking possession, working or using of the same or any part thereof by the Owner of Roof/<<NAME OF THE SPV>>.

**12.2. DEDUCTIONS FROM THE CONTRACT PRICE:**

- 12.2.1. All costs, damages or expenses which <<NAME OF THE SPV>> may have paid or incurred, which under the provisions of the Contract, the Successful bidder is liable/will be liable, will be claimed by the <<NAME OF THE SPV>>. All such claims shall be billed by the <<NAME OF THE SPV>> to the Contractor within 15 (fifteen) days of the receipt of the payment request and if not paid by the Successful bidder within the said period, the <<NAME OF THE SPV>> may, then, deduct the amount from any moneys due i.e., Performance Security or becoming due to the contractor or Successful bidder under the contract or may be recovered by actions of law or otherwise, if the Successful bidder fails to satisfy the <<NAME OF THE SPV>> of such claims.

**12.3. CORRUPT OR FRAUDULENT PRACTICES**

The <<NAME OF THE SPV>> requires that Successful Bidders/ Contractors should follow the highest standard of ethics during the execution of contract. In pursuance of this policy, the <<NAME OF THE SPV>>:

- 12.3.1. defines, for the purposes of this provision, the terms set forth as follows :
- 12.3.2. “corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the bid process or in contract execution; and
- 12.3.3. “fraudulent practice” means a misrepresentation of facts in order to influence a bid process or the execution of a contract to the detriment of the <<NAME OF THE SPV>>/Govt. scheme, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the <<NAME OF THE SPV>> of the benefits of free and open competition;
- 12.3.4. Will declare a firm ineligible/debarred, either indefinitely or for a specific period of time, a Govt. contract if at any time it is found that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a Government/ <<NAME OF THE SPV>> schemes.

### **13. DEBARRED FROM PARTICIPATING IN 'S ROOF TOP TENDER**

- 13.1. <<NAME OF THE SPV>> reserves the right to carry out the performance review of each Bidder from the time of submission of Bid onwards. In case it is observed that a bidder has not fulfilled its obligations in meeting the various timelines envisaged, in addition to the other provisions of the RFS, such Bidders may be debarred from participating in <<NAME OF THE SPV>>'s any future tender for a period as decided by the competent authority of <<NAME OF THE SPV>>.
- 13.2. The Successful bidder must ensure that the ROOF TOP SOLAR PV SCHEME- subsidy is available for newly commissioned projects i.e. for the projects whose construction/dispatch of equipment's have been started only after the issue of sanction letter/allocation letter .Any roofs on which projects has been installed or commissioned before the issue of allocation letter/sanction letter shall be construed as fraudulent activity in which case Successful bidder(s) may be debarred from participating in <<NAME OF THE SPV>>'s future tender for a period as decided by the Competent authority. However, such locations may be used for installation of additional capacity with the prior approval of competent authority.

## SECTION-IV

### TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications given below. Any shortcomings will lead to cancellation of subsidy in full or part as decided by <<NAME OF THE SPV>>. Competent Authority's decision will be final and binding on the bidder.

#### 14. DEFINITION

A Grid Tied Solar Rooftop Photo Voltaic (SRPV) power plant consists of SRPV 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 SRPV system is without battery and should be designed with necessary features to supplement the grid power during day time. Components and parts used in the SRPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable. Solar PV system shall consist of following equipments/components.

- Solar PV modules consisting of required number of **Crystalline** PV cells.
- Grid interactive Power Conditioning Unit with Remote Monitoring System Mounting structures
- Junction Boxes.
- Earthing and lightening protections.
- IR/UV protected PVC Cables, pipes and accessories

#### 14.1 SOLAR PHOTOVOLTAIC MODULES:

14.1.1 The PV modules used should be made in India.

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

a) For the PV modules to be used in a highly corrosive atmosphere throughout their

lifetime, they must qualify to IEC 61701.

- b) The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar crystalline modules of minimum 200 Wp and above wattage. Module capacity less than minimum 200 Wp shall not be accepted.
- c) Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.
  - i. PV modules must be tested and approved by one of the IEC authorized test centers.
  - ii. The module frame shall be made of corrosion resistant materials, preferably/ SHALL BE anodized aluminum.
  - iii. The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid. <<NAME OF THE SPV>>/owners shall allow only minor changes at the time of execution.
  - iv. Other general requirement for the PV modules and subsystems shall be the Following:
    - I. The rated output power of any supplied module shall have tolerance within +/-3%.
    - II. The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
    - III. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of bypass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.
    - IV. I-V curves at STC should be provided by bidder.

#### **Solar PV modules**

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

- 14.1.3. 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.

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

#### 14.1.4 Warranties:

- g) Material Warranty:
  - i. Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than five (05) years from the date of sale to the original customer ("Customer")
    - ii. Defects and/or failures due to manufacturing
    - iii. Defects and/or failures due to quality of materials
    - iv. Non conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at the Owners sole option
- b) Performance Warranty:
  - i. The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 year period and not more than 10% after ten years period of the full rated original output.

#### 14. ARRAY STRUCTURE

- a) 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 insulation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.
- b) The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed (like [City]-wind speed of        km/ hour). 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 <<NAME

OF THE SPV>>. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.

- c) The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS 4759.
- d) Structural material shall be corrosion resistant and electrolytic ally compatible with the materials used in the module frame, its fasteners, and nuts and bolts. **Aluminum structures also can be used which can withstand the wind speed of respective wind zone.** Necessary protection towards rusting need to be provided either by coating or anodization.
- e) Aluminum frames should be avoided for installations in coastal areas.
- f) 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 SRPV panels
- g) 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.
- h) The total load of the structure (when installed with PV modules) on the terrace should be less than 60 kg/m<sup>2</sup>.
- i) The minimum clearance of the structure from the roof level should be 300 mm.

## 16. JUNCTION BOXES (JBs)

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

/ SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.

- d) Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification.
- e) All fuses shall have DIN rail mountable fuse holders and shall be housed in thermoplastic IP 65 enclosures with transparent covers.

#### **17.DC DISTRIBUTION BOARD:**

DC Distribution panel to receive the DC output from the array field.

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.

#### **18.AC DISTRIBUTION PANEL BOARD:**

- a) AC Distribution Panel Board (DPB) shall control the AC power from PCU/ inverter, and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while in grid tied mode.
- b) All switches and the circuit breakers, connectors should conform to IEC 60947, part I, II and III/ IS60947 part I, II and III.
- c) The changeover switches, cabling work should be undertaken by the bidder as part of the project.
- d) All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz
- d) The panels shall be designed for minimum expected ambient temperature of 45 degree Celsius, 80 percent humidity and dusty weather.
- f) All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.
- g) Should conform to Indian Electricity Act and rules (till last amendment).
- h) All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit

breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions

Variation in supply Voltage	+/- 10 %
Variation in supply Frequency	+/- 3 Hz

**19. PCU/ARRAY SIZE RATIO:**

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

**20. PCU/ Inverter:**

As SRPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the "Power Conditioning Unit (PCU)". In addition, the

PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to the power conditioning unit/inverter should also be DG set interactive. If necessary. Inverter output should be compatible with the grid frequency. Typical technical features of the inverter shall be as follows:

Switching devices	IGBT/MOSFET
Control	Microprocessor /DSP
Nominal AC output voltage and Frequency	415V, 3 Phase, 50Hz (In case single phase inverters are offered, suitable arrangement for balancing the phases must be made.)
Output frequency	50 Hz
Grid Frequency Synchronization range	+ 3 Hz or more
Ambient temperature considered	-20° C to 50° C

Humidity	95 % Non-condensing
Protection of Enclosure	IP-20(Minimum) for indoor.
	IP-65(Minimum) for outdoor.
Grid Frequency Tolerance range	+ 3 or more
Grid Voltage tolerance	-0.20.15
No-load losses	Less than 1% of rated power
Inverter efficiency(minimum)	>93% (In case of 10 kW or above with in-built galvanic isolation)
	>97% (In case of 10 KW or above without in-built galvanic isolation)
Inverter efficiency (minimum)	> 90% (In case of less than 10 kW)
THD	< 3%
PF	> 0.9

- a) Inverter phases will be decided as per site condition along with specifications of MNRE. Three phase PCU/ inverter shall be used with each power plant system (10kW and/or above) but in case of less than 10kW single phase inverter can be used.
- b) PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.
- c) The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power; inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.
- d) Built-in meter and data logger to monitor plant performance through external computer shall be provided.
- e) **Anti-islanding** (Protection against Islanding of grid): The PCU shall have antiislanding

protection in conformity to IEEE 1547/UL 1741/ IEC 62116 or equivalent BIS standard.

- f) Successful Bidders shall be responsible for galvanic isolation of solar roof top power plant (>100kW) with electrical grid or LT panel.
- g) In PCU/Inverter, there shall be a direct current isolation provided at the output by means of a suitable isolating transformer. If Isolation Transformer is not incorporated with PCU/Inverter, there shall be a separate Isolation Transformer of suitable rating provided at the output side of PCU/PCU units for capacity more than 100 kW.
- h) The PCU/ inverter generated harmonics, flicker, DC injection limits, Voltage Range, Frequency Range and Anti-Islanding measures at the point of connection to the utility services should follow the latest CEA (Technical Standards for Connectivity Distribution Generation Resources) Guidelines.
- i) The power conditioning units / inverters should comply with applicable IEC/ equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068-2 (1,2,14,30)/ Equivalent BIS Std.
- j) The MPPT units environmental testing should qualify IEC 60068-2 (1, 2, 14, 30)/ Equivalent BIS std. The junction boxes/ enclosures should be IP 65 (for outdoor)/ IP 54 (indoor) and as per IEC 529 specifications.
- k) The PCU/ inverters should be tested from the MNRE approved test centers/ NABL/ BIS/ IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

## 21. **INTEGRATION OF PV POWER WITH GRID:**

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

## 22. **DATA ACQUISITION SYSTEM / PLANT MONITORING**

- i. Data Acquisition System shall be provided for each of the solar PV plant above 10 kWp capacity.

- ii. 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.
- iii. Solar Irradiance: An integrating Pyranometer / 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.
- iv. 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
- v. The following parameters are accessible via the operating interface display in real time separately for solar power plant:
  - a. AC Voltage.
  - b. AC Output current.
  - c. Output Power
  - d. Power factor.
  - e. DC Input Voltage.
  - f. DC Input Current.
  - g. Time Active.
  - h. Time disabled.
  - i. Time Idle.
  - j. Power produced
  - k. Protective function limits (Viz-AC Over voltage, AC Under voltage, over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage.
- vi. 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.
- vii. 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.
- viii. 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.
- ix. 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.
- x. Computerized AC energy monitoring shall be in addition to the digital AC energy meter.
- xi. 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.

- xii. All instantaneous data shall be shown on the computer screen.
- xiii. Software shall be provided for USB download and analysis of DC and AC parametric data for individual plant.
- xiv. Provision for instantaneous Internet monitoring and download of historical data shall be also incorporated.
- xv. 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.
- xvi. Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis.
- xvii. 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.
- xviii. Remote Monitoring and data acquisition through Remote Monitoring System software at the owner / <<NAME OF THE SPV>> 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.
- xix. 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.

## **22 TRANSFORMER "IF REQUIRED" & METERING:**

- i. Dry/oil type relevant kVA, 11kV/415V, 50 Hz Step up along with all protections, switchgears, Vacuum circuit breakers, cables etc. along with required civil work.
- ii. The bidirectional electronic energy meter (0.5 S classes) shall be installed for the measurement of import/Export of energy.
- iii. The bidder must intimate to the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SRPV plant with distribution network and submit the same to <<NAME OF THE SPV>> before commissioning of SRPV plant.
- iv. The bidder must Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM requirement.

## **23 POWER CONSUMPTION:**

- i. Regarding the generated power consumption, priority need to give for internal

consumption first and thereafter any excess power can be exported to grid. Finalization of tariff is not under the purview of <<NAME OF THE SPV>> or MNRE. Decisions of appropriate authority like DISCOM, state regulator may be followed.

## 24 PROTECTIONS

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

### 24.1 LIGHTNING PROTECTION

- a) The SRPV 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 SRPV 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 induced transients find an alternate route to earth.

### 24.2 SURGE PROTECTION

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

### 24.3 EARTHING PROTECTION

- a) Each array structure of the PV yard should be grounded/ earthed properly as per IS: 3043-1987. In addition the lightning arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of Department/<<NAME OF THE SPV>> as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.
- b) Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.

### 24.4. GRID ISLANDING:

- a) 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.

- b) 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.

## 25. CABLES

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

- i. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
- ii. Temp. Range:  $-10^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ .
- iii. Voltage rating 660/1000V
- iv. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
- v. Flexible
  
- vi. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system shall not exceed 2%.
  
- vii. 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.
- viii. 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.
- ix. 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 color.
- x. The DC cables from the <<NAME OF THE SPV>> module array shall run through a UV-stabilized PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm.
- xi. Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors (MC4) and couplers
- xii. All cables and conduit pipes shall be clamped to the rooftop, walls and 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.

- xiii. 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.
- xiv. Cable Jacket should also be electron beam cross-linked XLPO, flame retardant, UV resistant and black in color.
- xv. 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.
- xvi. 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.
- xvii. 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.
- xviii. The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 2.0%.
- xix. The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed 2.0%.

## 26. 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.

<b>Plant Capacity</b>	<b>Connecting voltage</b>
Up to 10 kW	240V-single phase or 415V-three phase at the option of the consumer
Above 10kW and up to 100 kW	415V – three phase
Above 100kW	At HT/EHT level (11kV/33kV/66kV) as per DISCOM rules

- a) The maximum permissible capacity for rooftop shall be 1 MW for a single net metering point.
- b) Utilities may have voltage levels other than above; DISCOMS may be consulted before finalization of the voltage level and specification is made accordingly.
- c) 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 SRPV bidders.

#### **27. TOOLS & TACKLES AND SPARES:**

- a) After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the bidder for maintenance purpose. List of tools and tackles to be supplied by the bidder for approval of specifications and make from <<NAME OF THE SPV>>.
- b) A list of requisite spares in case of PCU/inverter comprising of a set of control logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc along with spare set of PV modules be indicated, which shall be supplied along with the equipment. A minimum set of spares shall be maintained in the plant itself for the entire period of warranty and Operation & Maintenance which upon its use shall be replenished.
- (c) For large PV system (Above 100 kW) for installation having large load, the solar power can be generated at low voltage levels and step up to 11 kV / or above level through the step up transformer for exporting the generated solar power to the grid, if required. The transformers and associated switchgear would require to be provided by the SRPV bidders.

#### **28. DANGER BOARDS AND SIGNAGES:**

- a. 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 and main entry from administrative block. Text of the signage may be finalized in consultation with <<NAME OF THE SPV>> / owner.

**29. FIRE EXTINGUISHERS:**

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

- a) Portable fire extinguishers in the control room for fire caused by electrical short circuits
- b) Sand buckets in the control room
- c) 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.

**30. DRAWINGS & MANUALS:**

- a) 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.
- b) Approved ISI and reputed makes for equipment be used.
- c) For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to <<NAME OF THE SPV>> /owners before progressing with the installation work

**31. PLANNING AND DESIGNING:**

- a) The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labour. The bidder should submit the array layout drawings along with Shadow Analysis Report to <<NAME OF THE SPV>> /Owner for approval.
- b) <<NAME OF THE SPV>> 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.

- c) The bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any. The bidder submits three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.

**32. DRAWINGS TO BE FURNISHED BY BIDDER AFTER AWARD OF CONTRACT**

- a) The Contractor shall furnish the following drawings Award/Intent and obtain approval
- b) General arrangement and dimensioned layout
- c) Schematic drawing showing the requirement of SV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.
- d) Structural drawing along with foundation details for the structure.
- e) Itemized bill of material for complete SV plant covering all the components and associated accessories.
- f) Layout of solar Power Array
- g) Shadow analysis of the roof

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

The Solar PV system on the rooftop of the selected buildings will be installed for meeting up to 90% of the annual energy requirements depending upon the area of rooftop available and the remaining energy requirement of the office buildings will be met by drawing power from grid at commercial tariff of DISCOMs

**34. 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.

**35. DISPLAY BOARD**

The bidder has to display a board at the project site (above 25 kWp) mentioning the following:

- a. Plant Name, Capacity, Location, Type of Renewable Energy plant (Like solar wind etc.), and Date of commissioning, details of tie-up with transmission and distribution companies, Power generation and Export FY wise.
- b. Financial Assistance details from <<NAME OF THE SPV>>/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.

c. The size and type of board and display shall be approved by <<NAME OF THE SPV>> before site inspection.

40. Please refer **Annexure-G** for IEC standards to be mandatorily adhered.

**SECTION - V****PRICE BID FOR RESCO**

(To be submitted online and in a separate envelope)

**RFS NO. [ \_\_\_\_\_ ] dated: \_\_\_\_\_**

Year of Operation	Tariff (Rs/kWh)	Discount Factor at 11% (or as applicable)	Discounted Tariff (Rs/kWh)
(1)	(2)	(3)	4 = (2)x(3)
Year 1 w.e.f. date of commercial operation to 31st March of immediately succeeding financial year		1.000	X1
Year 2 w.e.f 1st April to 31st March of immediately succeeding financial year		0.901	X2
Year 3 w.e.f 1st April to 31st March of immediately succeeding financial year		0.812	X3
Year 4 w.e.f 1st April to 31st March of immediately succeeding financial year		0.731	X4
Year 5 w.e.f 1st April to 31st March of immediately succeeding financial year		0.659	X5
Year 6 w.e.f 1st April to 31st March of immediately succeeding financial year		0.593	X6
Year 7 w.e.f 1st April to 31st March of immediately succeeding financial year		0.535	X7
Year 8 w.e.f 1st April to 31st March of immediately		0.482	X8

Year of Operation	Tariff (Rs/kWh)	Discount Factor at 11% (or as applicable)	Discounted Tariff (Rs/kWh)
(1)	(2)	(3)	4 = (2)x(3)
succeeding financial year			
Year 9 w.e.f 1st April to 31st March of immediately succeeding financial year		0.434	X9
Year 10 w.e.f 1st April to 31st March of immediately succeeding financial year		0.391	X10
Year 11 w.e.f 1st April to 31st March of immediately succeeding financial year		0.352	X11
Year 12 w.e.f 1st April to 31st March of immediately succeeding financial year		0.317	X12
Year 13 w.e.f 1st April to 31st March of immediately succeeding financial year		0.286	X13
Year 14 w.e.f 1st April to 31st March of immediately succeeding financial year		0.258	X14
Year 15 w.e.f 1st April to 31st March of immediately succeeding financial year		0.232	X15
Year 16 w.e.f 1st April to 31st March of immediately succeeding financial year		0.209	X16
Year 17 w.e.f 1st April to 31st March of immediately succeeding financial year		0.188	X17
Year 18 w.e.f 1st April to 31st March of immediately succeeding financial year		0.170	X18

Year of Operation	Tariff (Rs/kWh)	Discount Factor at 11% (or as applicable)	Discounted Tariff (Rs/kWh)
(1)	(2)	(3)	4 = (2)x(3)
succeeding financial year			
Year 19 w.e.f 1st April to 31st March of immediately succeeding financial year		0.153	X19
Year 20 w.e.f 1st April to 31st March of immediately succeeding financial year		0.138	X20
Year 21 w.e.f 1st April to 31st March of immediately succeeding financial year		0.124	X21
Year 22 w.e.f 1st April to 31st March of immediately succeeding financial year		0.112	X22
Year 23 w.e.f 1st April to 31st March of immediately succeeding financial year		0.101	X23
Year 24 w.e.f 1st April to 31st March of immediately succeeding financial year		0.091	X24
Year 25 w.e.f 1st April to 31st March of immediately succeeding financial year		0.082	X25
Total		9.351	X= X1 + X2 + X3 + x4 +X5 +.....+X25
<b>Levellized Tariff for 25 years (in Rs /kWh)=X / 9.351</b>			
<b>Levellized Tariff for 25 years in words</b>			

Note:

- a. The Levelised tariff shall be calculated up to three decimal places. However in case of a tie it may be expanded to break the tie.
- b. Tariff stream quoted by the bidder shall be Levelised with a discounting rate of 11% (***or as applicable***) only.
- c. Maximum allowable Levelised tariff is Rs. 6.00 Per kWh.
- d. Bids not in conformity with above provisions will be rejected.

Date: .....

Signature:.....

Place: .....

Printed Name.....

Business Address:

Designation:.....

(Company Stamp).....

**FORMATS FOR SUBMITTING RFS**

**Format-1**

**Covering Letter**

**(The covering letter should be on the Letter Head of the Bidding Company)**

**Ref.No. \_\_\_\_\_ Date: \_\_\_\_\_**

**From: \_\_\_\_\_ (Insert name and address of Bidding Company)**

\_\_\_\_\_  
\_\_\_\_\_

**Tel. #:**

**Fax#:**

**E-mail**

**address# To**

<<NAME OF THE SPV>>

[Address]

**Sub: Bid for "Implementation of Grid connected Roof Top Solar PV System Scheme in [City] Municipal Corporation, as per RFS"**

Dear Sir,

1. We, the undersigned....[insert name of the 'Bidder'] having read, examined and understood in detail the RFS Document for Implementation of Grid connected Roof Top Solar PV System Scheme hereby submit our Bid comprising of Price Bid and Techno Commercial Bid. We confirm that neither we nor any of our Parent Company / Affiliate/Ultimate Parent Company has submitted Bid other than this Bid directly or indirectly in response to the aforesaid RFS.
  
2. We give our unconditional acceptance to the RFS, dated.....and RFS

Documents attached thereto, issued by <<NAME OF THE SPV>>, as amended. As a token of our acceptance to the RFS Documents, the same have been initialed by us and enclosed to the Bid. We shall ensure that we execute such RFS

Documents as per the provisions of the RFS and provisions of such RFS Documents shall be binding on us.

### 3. Bid Capacity

We have bid for the above project under RESCO model as per RFS terms and conditions

### 4. Bid Bond

We have enclosed a Bid Bond of Rs..... (Insert Amount), in the form of bank guarantee no..... (Insert number of the bank guarantee) dated..... [Insert date of bank guarantee] as per Format .....from ..... (Insert name of bank providing Bid Bond) and valid up to .....in terms of Clause .....of this RFS.

5. We have submitted our Price Bid strictly as per Section IV of this RFS, without any deviations, conditions and without mentioning any assumptions or notes for the Price Bid in the said format(s).
6. In case we are a Successful Bidder, we shall furnish a declaration at the time of commissioning of the Project to the effect that neither we have availed nor we shall avail in future any subsidy other than received from <<NAME OF THE SPV>> for implementation of the project.

### 7. Acceptance

We hereby unconditionally and irrevocably agree and accept that the decision made by <<NAME OF THE SPV>> in respect of any matter regarding or arising out of the RFS shall be binding on us. We hereby expressly waive any and all claims in respect of Bid process.

We confirm that there are no litigations or disputes against us, which materially affect our ability to fulfill our obligations with regard to execution of projects of capacity offered by us.

### 8. Familiarity with Relevant Indian Laws & Regulations

We confirm that we have studied the provisions of the relevant Indian laws and regulations as required to enable us to submit this Bid and execute the RFS Documents, in the event of our selection as Successful Bidder. We further undertake and agree that all such factors as mentioned in RFS have been fully examined and considered while submitting the Bid.

### 9. Contact Person

Details of the contact person are furnished as under:

Name : .....  
Designation : .....  
Company : .....  
Address : .....  
Phone Nos. : .....  
Fax Nos. : .....  
E-mail address : .....

\*\*\*We are enclosing herewith the Envelope-I (Covering letter, Processing fee and Bid Bonds etc as per clause 3.12 of the RFS) (through Offline) and Envelope-II (Techno-Commercial documents) (through online) and Envelope III (Price Bids) (through online) containing duly signed formats, each one duly sealed separately, in one original as desired by you in the RFS for your consideration as per clause 3.12 of the RFS.

It is confirmed that our Bid is consistent with all the requirements of submission as stated in the RFS and subsequent communications from <<NAME OF THE SPV>>. The information submitted in our Bid is complete, strictly as per the requirements stipulated in the RFS and is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our Bid. We confirm that all the terms and conditions of our Bid are valid for acceptance for a period of 8 months from the Bid deadline. We confirm that we have not taken any deviation so as to be deemed non-responsive.

Dated the \_\_\_\_\_ day of \_\_\_\_\_, 20....

Thanking you,

We remain,

Yours faithfully,

**Name, Designation and Signature of Authorized Person in whose name Power of Attorney/Board Resolution/Declaration (Annexure J).**

**GENERAL PARTICULARS OF THE BIDDER**

	Name of the Company	
	Registered Office Address	
	E-mail	
	Web site	
	Authorized Contact Person(s) with name, designation Address and Mobile Phone No., E-mail address/ Fax No. to whom all references shall be made	
	Year of Incorporation	
	Have the bidder/Company ever been debarred By any Govt. Dept. / Undertaking for undertaking any work.	
	Reference of any document information attached by the Bidder other than specified in the RFS.	
	Whether the Bidder wishes to form a Project Company for execution of work	Yes/No

Bidding company is listed in India Yes/No

Details of the Ownership structure (Details of persons owning 10% or more of the Total Paid up equity of the Bidding Company in the Format as below

Whether company is MSME as on the bidding date as per clause 3.35.9 Yes/No

(Signature of Authorized Signatory)

**With Stamp**

**Format-A (Shareholding certificate)**

Name of the Equity holder	Type and Number of shares owned	% of equity holding	Extent of Voting rights

**(Signature of Authorized Signatory)**

**With Stamp**

**(Signature of Company Secretary/Director/Chartered Accountant)**

**FORMAT FOR BID BOND**

(To be on Rs. 1000/-non-judicial stamp paper)

Ref. \_\_\_\_\_

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

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

In consideration of the ----[Insert name of the Bidder] (hereinafter referred to as 'Bidder') submitting the response to RFS inter alia for selection of the Project **under RESCO model in ABD area of the [City] Municipal Corporation** as indicated in RFS) in response to the RS No. \_\_\_\_\_ dated \_\_\_\_ issued by <<NAME OF THE SPV>> (hereinafter referred to as \_\_\_\_\_) and [<<NAME OF THE SPV>> considering such response to the RFS of .....[insert the name of the Bidder] as per the terms of the RFS, the \_\_\_\_\_ [insert name & address of bank] hereby agrees unequivocally, irrevocably and unconditionally to pay to <<NAME OF THE SPV>> at [Address] forthwith on demand in writing from <<NAME OF THE SPV>> or any Officer authorized by it in this behalf, any amount upto and not exceeding Rupees ----- (words) only, on behalf of M/s. \_\_\_\_\_ [Insert name of the Bidder].

This guarantee shall be valid and binding on this Bank up to and including \_\_\_\_\_ [insert date of validity in accordance with Clause 3.12 of this RFS] and shall not be terminable by notice or any change in the constitution of the Bank or the term of contract or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective agreement.

Our liability under this Guarantee is restricted to Rs. \_\_\_\_\_ (Rs. \_\_\_\_\_ only). Our Guarantee shall remain in force until \_\_\_\_\_ [insert date of validity in accordance with Clause 3.12 of this RFS]. <<NAME OF THE SPV>> shall be entitled to invoke this Guarantee till \_\_\_\_\_ [Insert date which is 30 days after the date in the preceding sentence].

The Guarantor Bank hereby agrees and acknowledges that the <<NAME OF THE SPV>> shall have a right to invoke this BANK GUARANTEE in part or in full, as it may deem fit.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand by <<NAME OF THE SPV>>, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to <<NAME OF THE SPV>>. The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by ----- [Insert name of the Bidder] and/or

any other person. The Guarantor Bank shall not require <<NAME OF THE SPV>> to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against <<NAME OF THE SPV>> in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at [City] shall have exclusive jurisdiction.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly <<NAME OF THE SPV>> shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the Bidder, to make any claim against or any demand on the Bidder or to give any notice to the Bidder or to enforce any security held by <<NAME OF THE SPV>> or to exercise, levy or enforce any distress, diligence or other process against the Bidder.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rs. \_\_\_\_\_ (Rs. \_\_\_\_\_ only) and it shall remain in force until \_\_\_\_\_ [Date to be inserted on the basis of Clause 3.12 of this RFS] with an additional claim period of thirty (30) days thereafter. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if <<NAME OF THE SPV>> serves upon us a written claim or demand.

Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Power of Attorney No. \_\_\_\_\_

For  
\_\_\_\_\_ [Insert Name of the Bank] \_\_\_\_\_

Banker's Stamp and Full Address. Dated this \_\_\_\_ day of \_\_\_\_, 20\_\_

**FORMAT FOR PERFORMANCE BANK GUARANTEE (PBG)**

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

In consideration of the ----- [Insert name of the Bidder] submitting the response to RFS inter alia for selection of the Project **under RESCO model** in <<Name of the City>>Municipal Corporation under Roof Top scheme in response to the RFS no..... dated..... issued by <<NAME OF THE SPV>> (hereinafter referred to as <<NAME OF THE SPV>>) and <<NAME OF THE SPV>> considering such response to the RFS of .....[insert the name of the selected Solar Power Developer] (which expression shall unless repugnant to the context or meaning thereof include its executors, administrators, successors and assignees) and selecting the Solar Power Project of the Solar Power Developer and issuing Letter of allocation No ----- to (Insert Name of selected Solar Power Developer) as per terms of RFS and the same having been accepted by the selected SPD or a Project Company, M/s ----- --- {a Special Purpose Vehicle (SPV) formed for this purpose}, if applicable ]. As per the terms of the RFS, the

\_\_\_\_\_ [insert name & address of bank] hereby agrees unequivocally, irrevocably and unconditionally to pay to <<NAME OF THE SPV>> at [Address] forthwith on demand in writing from <<NAME OF THE SPV>> or any Officer authorized by it in this behalf, any amount up to and not exceeding Rupees----- [Total Value] only, on behalf of M/s \_\_\_\_\_ [Insert name of the selected Solar Power Developer / Project Company]

This guarantee shall be valid and binding on this Bank up to and including..... and shall not be terminable by notice or any change in the constitution of the Bank or the term of contract or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective agreement.

Our liability under this Guarantee is restricted to Rs. \_\_\_\_\_

Our Guarantee shall remain in force until.....<<NAME OF THE SPV>> shall be entitled to invoke this Guarantee till .....

The Guarantor Bank hereby agrees and acknowledges that <<NAME OF THE SPV>> shall have a right to invoke this BANK GUARANTEE in part or in full, as it may deem fit.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand by <<NAME OF THE SPV>>, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to <<NAME OF THE SPV>>.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by ----- [Insert name of the selected bidder]. The Guarantor Bank shall not require <<NAME OF THE SPV>> to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against <<NAME OF THE SPV>> in respect of any payment made hereunder

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at [City] shall have exclusive jurisdiction.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly <<NAME OF THE SPV>> shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the selected Solar Power Developer / Project Company , to make any claim against or any demand on the Successful bidder or to give any notice to the selected Solar Power Developer / Project Company or to enforce any security held by or to exercise, levy or enforce any distress, diligence or other process against the selected Solar Power Developer / Project Company .

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rs. \_\_\_\_\_ (Rs. \_\_\_\_\_ only) and it shall remain in force until ..... We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if <<NAME OF THE SPV>> serves upon us a written claim or demand.

Signature \_\_\_\_\_

Name \_\_\_\_\_

Power of Attorney No. \_\_\_\_\_

For

\_\_\_\_\_ [Insert Name of the Bank] \_\_\_\_

Banker's Stamp and Full Address.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_

Witness:

1. ....

Signature  
Name and Address

2. ....

Signature  
Name and Address

Notes:

1. The Stamp Paper should be in the name of the Executing Bank and of appropriate value.
2. The Performance Bank Guarantee (PBG) shall be executed by any of the Bank from the List of Banks enclosed as per Annexure-B

**CHECK LIST FOR BANK GUARANTEES**

<b>Sl. No.</b>	<b>Details of checks</b>	<b>YES/NO</b>
a	Is the BG on non-judicial Stamp paper of appropriate value, as per applicable Stamp Act of the place of execution	
b	Whether date, purpose of purchase of stamp paper and name of the purchaser are indicated on the back of Stamp paper under the Signature of Stamp vendor? (The date of purchase of stamp paper should be not later than the date of execution of BG and the stamp paper should be purchased either in the name of the executing Bank or the party on whose behalf the BG has been issued. Also the Stamp Paper should not be older than six months from the date of execution of BG).	
C	Has the executing Officer of BG indicated his name, designation and Power of Attorney No.? /Signing Power no. on the BG?	
D	Is each page of BG duly signed / initialed by executants and whether stamp of Bank is affixed thereon? Whether the last page	
E	Does the Bank Guarantees compare verbatim with the Performa prescribed in the Bid Documents?	
F	Are the factual details such as Bid Document No.? / Specification No., / LOI No. (if applicable) / Amount of BG and Validity of BG correctly mentioned in the BG	
G	Whether overwriting/cutting if any on the BG have been properly authenticated under signature & seal of executants?	
h	Contact details of issuing bank including email id, mobile number etc.	

**POWER OF ATTORNEY**

**(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.)**

**(a) Power of Attorney to be provided by the Bidding Company in favour of its representative as evidence of authorized signatory’s authority.**

Know all men by these presents, We .....(name and address of the registered office of the Bidding Company as applicable) do hereby constitute, appoint and authorize Mr. /Ms. .... (name & residential address) who is presently employed with us and holding the position of..... as our true and lawful attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of our Bid for implementation of grid connected Roof top solar PV scheme in response to the RFS No .....dated ..... issued by <<NAME OF THE SPV>>, including signing and submission of the Bid and all other documents related to the Bid, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document which the <<NAME OF THE SPV>> may require us to submit. The aforesaid Attorney is further authorized for making representations to the <<NAME OF THE SPV>> and providing information / responses to <<NAME OF THE SPV>> representing us in all matters before <<NAME OF THE SPV>>, and generally dealing with <<NAME OF THE SPV>>, in all matters in connection with Bid till the completion of the bidding process as per the terms of the above mentioned NIT.

We hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall be binding on us and shall always be deemed to have been done by us.

All the terms used herein but not defined shall have the meaning ascribed to such terms under the NIT.

**Signed by the within named**

..... **(Insert the name of the executants company)**

**Through the hand of**

**Mr. ....**

**Duly authorized by the Board to issue such Power of Attorney**

**Dated this ..... day of .....**

**Accepted**

.....

Signature of Attorney

(Name, designation and address of the Attorney)

**Attested**

.....

(Signature of the executants)

(Name, designation and address of the executants)

.....

**Signature and stamp of Notary of the place of execution**

**Common seal of ..... has been affixed in my/our presence pursuant to Board of Director's Resolution dated.....**

**WITNESS**

**1.** .....

(Signature)

Name.....

Designation .....

2. ....

**(Signature)**

**Name**.....

**Designation** .....

**Notes:**

The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants(s) and the same should be under common seal of the executants affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executants(s) in this regard.

The person authorized under this Power of Attorney, in the case of the Bidding Company / Lead Member being a public company, or a private company which is a subsidiary of a public company, in terms of the Companies Act, 1956, with a paid up share capital of more than Rupees Five Crores, should be the Managing Director / whole time director/manager appointed under section 269 of the Companies Act, 1956. In all other cases the person authorized should be a director duly authorized by a board resolution duly passed by the Company.

Also, wherever required, the executants(s) should submit for verification the extract of the chartered documents and documents such as a Board resolution / power of attorney, in favour of the person executing this power of attorney for delegation of power hereunder on behalf of the executants(s).

**FINANCIAL ELIGIBILITY CRITERIA REQUIREMENT (AS PER CLAUSE 3.3)**  
**(To be submitted on the letterhead of Bidding Company)**

To,

<<NAME OF THE SPV>>

[Address]

Dear Sir,

Sub: Bid for Implementation of Grid connected Roof Top Solar PV System scheme in response to the RFS No: \_\_\_\_\_ dated: \_\_\_\_\_

We submit our Bid under RESCO model for which details of our Financial Eligibility Criteria Requirements are as follows.

Further, we certify that the Financially Evaluated Entity (ies) had an Annual Turnover

or

Net worth (strike out whichever is not applicable) of Rs.....Crores computed as per instructions provided in Clause 3.3.3.4 of this RFS based on unconsolidated audited annual accounts (refer Note-1 below) any of the last 5 Years immediately preceding the Bid Deadline.

<b>Name of Financially Evaluated Entity*</b>	<b>Relationship with Bidding Company**</b>	<b>Financial year</b>	<b>Year of Incorporation</b>	<b>Annual Turnover (Rs. Crores)</b>	<b>Net worth as per Clause 3.4.2 (in Rs. Crores)</b>

\* The Financially Evaluated Entity may be the Bidding Company itself.

\*\* The column for "Relationship with Bidding Company" is to be filled in only in case financial capability of Parent Company and/or Affiliate has been used for meeting Qualification Requirements.

Yours faithfully

(Signature and stamp (on each page) of Authorized Signatory of Bidding Company.

Name: .....

Date: .....

Place: .....

(Signature and stamp (on each page) of Chartered Accountant/Statutory Auditors of Bidding Company.

Name: .....

Date: .....

Place: .....

**Notes:**

Audited consolidated annual accounts of the Bidder may also be used for the purpose of financial criteria provided the Bidder has at least 26% equity in each company whose accounts are merged in the audited consolidated accounts and provided further that the financial capability of such companies (of which accounts are being merged in the consolidated accounts) shall not be considered again for the purpose of evaluation of the Bid.

**Format for certificate of relationship of Parent Company or Affiliate with the Bidding Company.**

To,

.....

Dear Sir,

Sub: Bid for Implementation of Grid connected Roof Top Solar PV System Scheme.

We hereby certify that M/s.....,M/s.....,M/s.....are the

Affiliate(s) /Parent Company of the Bidding Company as per the definition of Affiliate/Parent Company as provided in this RFS and based on details of equity holding as on seven (7) days prior to the Bid Deadline.

The details of equity holding of the Affiliate/Parent Company/Bidding Company or vice versa as on seven (7) days prior to the Bid Deadline are given as below:

<b>Name of Bidding Company</b>	<b>Name of the Affiliate of the Bidding Company / Name of the Parent Company of the Bidding Company</b>	<b>Name of the Company having Common control on the Affiliate and the Bidding Company</b>	<b>Percentage of Equity Holding of Parent Company in the Bidding Company</b>

\*Strike out whichever is not applicable.

**(Insert Name and Signature of Statutory Auditor or practicing Company Secretary of the Bidder)**

**Undertaking from the Financially Evaluated Entity or its Parent Company/ Ultimate Parent Company**

**(On the Letter Head of the Financially Evaluated Entity or its Parent Company/Ultimate Parent Company)**

Name:  
Full Address:  
Telephone No.:  
E-mail address:  
Fax/No.:  
To,

Dear Sir,

We refer to the RFS No.....dated.....for “Implementation of Grid connected Roof Top Solar PV System Scheme”.

“We have carefully read and examined in detail the RFS, including in particular, Clause of the RFS, regarding submission of an undertaking, as per the prescribed Format at Annexure.....of the RFS.

We confirm that M/s..... (Insert name of Bidding Company/) has been authorized by us to use our financial capability for meeting the Financial Eligibility as specified in

Clause....of the RFS referred to above.

We have also noted the amount of the Performance Guarantee required to be submitted as per Clause....of the RFS the ..... (Insert the name of the Bidding Company) in the event of it being selected as the Successful Bidder”.

In view of the above, we hereby undertake to you and confirm that in the event of failure of .....(Insert name of the Bidding Company) to submit the Performance Guarantee in full or in part at any stage, as specified in the RFS, we shall submit the Performance Guarantee not submitted by .....(Insert name of the Bidding Company)”.

We have attached hereto certified true copy of the Board Resolution Whereby the Board of Directors of our Company has approved issue of this Undertaking by the Company.

All the terms used herein but not defined, shall have the meaning as ascribed to the said terms under the RFS.

**Signature of Authorized Signatory**

**Common seal of .....has been affixed in my/our presence pursuant to Board of**

Director's Resolution dated.....

WITNESS

.....

(Signature)

Name.....

Designation.....

.....

(Signature)

Name.....

Designation.....

## CONSORTIUM AGREEMENT

***(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution)***

THIS Consortium Agreement (“Agreement”) executed on this \_\_\_\_\_ day of \_\_\_\_\_ 2016 between M/s [insert name of Lead Member] \_\_\_\_\_ a Firm / Company incorporated under the laws of \_\_\_\_\_ and having its Registered Office at \_\_\_\_\_ (hereinafter called the “Lead Member”, which expression shall include its successors, executors and permitted assigns)

and

M/s \_\_\_\_\_ a Firm / Company incorporated under the laws of \_\_\_\_\_ and having its Registered Office at \_\_\_\_\_ (hereinafter called the “Technical Member”, which expression shall include its successors, executors and permitted assigns), which expression shall include its successors, executors and permitted assigns)

WHEREAS, each Member individually shall be referred to as the “Member” and both the Members shall be collectively referred to as the “Members” in this Agreement.

WHEREAS the <<NAME OF THE SPV>> (hereinafter called <<NAME OF THE SPV>> or <<NAME OF THE SPV>>), a section -25 Company incorporated under the Company’s Act, 1956 has invited response to RFS No. \_\_\_\_ dated \_\_\_\_ for design, manufacture, supply, erection, testing and commissioning including warranty, operation & maintenance of Roof Top Solar PV power system.

WHEREAS the RFS documents stipulates that the Lead Member may enter into a Technical Consortium Agreement with another Company / Corporate entity to fulfill the Technical Eligibility Criteria as stipulated in the RFS document. The Members of the Bidding Consortium will have to submit a legally enforceable Consortium Agreement in a format enclosed with the RFS document.

### **NOW THEREFORE, THIS AGREEMENT WITNESSTH AS UNDER:**

In consideration of the above premises and agreements all the Members in this Consortium do hereby mutually agree as follows:

1. We, the Members of the Consortium and Members to the Agreement do hereby unequivocally agree that (M/s \_\_\_\_\_), shall act as the Lead Member as defined in the RFS for self and agent for and on behalf of Technical Member

2. The Lead Member is hereby authorized by the Technical Member of the Consortium to bind the Consortium and receive instructions for and on their behalf.
3. The Lead Member shall be liable and responsible for ensuring the individual and collective commitment of each of the Members of the Consortium in discharging all of their respective obligations. Each Member further undertakes to be individually liable for the performance of its part of the obligations without in any way limiting the scope of collective liability envisaged in this Agreement.
4. Subject to the terms of this Agreement, the Technical member shall be responsible for providing technical knowledge for “Design, Manufacture, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance” to the lead member.
5. In case of any breach of any commitment by any of the Consortium Members, the Lead Member shall be liable for the consequences thereof.
6. This Agreement shall be construed and interpreted in accordance with the Laws of India and courts at [City] alone shall have the exclusive jurisdiction in all matters relating thereto and arising there under.
7. It is hereby further agreed that in case of being shortlisted, the Members do hereby agree that they shall abide by the terms & conditions of the RFS document.
8. It is further expressly agreed that this Agreement shall be irrevocable and shall form an integral part of the RFS submitted to <<NAME OF THE SPV>> and shall remain valid till completion of the job assigned to the Contractor.
9. The Lead Member is authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Members respectively from time to time in the response to RFS.
10. It is hereby expressly understood between the Members that no Member at any given point of time, may assign or delegate its rights, duties or obligations under this agreement without the explicit permission of <<NAME OF THE SPV>>.
11. This Agreement
  - (a) Has been duly executed and delivered on behalf of each Member hereto and constitutes the legal, valid, binding and enforceable obligation of each such Member;
  - (b) Sets forth the entire understanding of the Members hereto with respect to the subject matter hereof; and

(c) May not be amended or modified except in writing signed by each of the Members and with prior written consent of <<NAME OF THE SPV>>.

IN WITNESS WHEREOF, the Members have, through their authorized representatives, executed these present on the Day, Month and Year first mentioned above.

For M/s----- [Lead Member]

-----

(signature, Name & Designation of the person authorized vide Board Resolution Dated

[•])

Witnesses:

1) Signature-----

2) Signature -----

Name:

Name:

Address:

Address:

For M/s-----[Technical Member]

-----

(signature, Name & Designation of the person authorized vide Board Resolution Dated

[•])

Witnesses:

**DOCUMENTS REQUIRED FOR PROJECT SANCTION**

Following documents will be required to be submitted for project sanction:

1. Agreement between the bidder and the owner of the Project and Building/Roof top (Notarized original agreement on stamp paper of appropriate value should be enclosed).
2. All Agreement shall generally have reference to the <<NAME OF THE SPV>>'s RFS No. and Letter of Allocation and provisions as per terms and conditions, technical specification and performance parameter in line with the <<NAME OF THE SPV>>'s RFS Document against which Letter of Allocation has been issued. In addition, it shall indicate the price / tariff payable by the roof top Owner to the developer, payment terms, completion period along with other conditions of contract like insurance, warranty, force majeure, arbitration, jurisdiction, governing law, site access for the developer, and, site access for <<NAME OF THE SPV>> officials for the entire plant life, obligation of the roof top owner regarding providing of data to <<NAME OF THE SPV>> as per the RFS Document etc.
3. Intimation to the concerned DISCOM for grid connectivity as per Annexure-L or CEIG approval (In case CEIG approval is suffice for grid connectivity). Undertaking of Successful Bidder on stamp Paper for indemnification of <<NAME OF THE SPV>> shall be furnished in case approval of CEIG is only furnished for grid connectivity. (Not mandatory during project identification, however mandatory for project commissioning/operation).
4. Summary Project Report (2-3 pages only) as per Format at **Annexure H**.
7. <<NAME OF THE SPV>> **Service Charges**: DD/ Bankers cheque for an amount as per clause no. 3.20, drawn in favour of <<NAME OF THE SPV>>, payable at [City] against payment of <<NAME OF THE SPV>> Service Charges.

List of Banks

1. SCHEDULED COMMERCIAL BANKS	2. OTHER PUBLIC SECTOR BANKS
<b>SBI AND ASSOCIATES</b>	1. IDBI Bank Ltd.
1. State Bank of India	<b>3. FOREIGN BANKS</b>
2. State Bank of Bikaner & Jaipur	1. Bank of America NA
3. State Bank of Hyderabad	2. Bank of Tokyo Mitsubishi UFJ Ltd.
4. State Bank of Indore	3. BNP Paribas
5. State Bank of Mysore	4. Calyon Bank
6. State Bank of Patiala	5. Citi Bank N.A.
7. State Bank of Travancore	6. Deutsche Bank A.G
<b>NATIONALISED BANKS</b>	7. The Hong Kong and Shanghai Banking Corpn. Ltd.
1. <<Name of the City>>Bank	8. Standard Chartered Bank
2. Andhra Bank	9. Society General
3. Bank of India	10. Barclays Bank
4. Bank of Maharashtra	11. Royal Bank of Scotland
5. Canara Bank	12. Bank of Nova Scotia
6. Central Bank of India	13. Development Bank of Singapore (DBS, Bank Ltd.)
7. Corporation Bank	14. Credit Agricole Corporate and Investment

	Bank
8. Dena Bank	<b>4. SCHEDULED PRIVATE BANKS</b>
9. Indian Bank	1. Federal Bank Ltd.
10. Indian Overseas Bank	2. ING Vysya Bank Ltd.
11. Oriental Bank of Commerce	3. Axis Bank Ltd.
12. Punjab National Bank	4. ICICI Bank Ltd.
13. Punjab & Sind Bank	5. HDFC Bank Ltd.
14. Syndicate Bank	6. Yes Bank Ltd.
15. Union Bank of India	7. Kotak Mahindra Bank
16. United Bank of India	8. IndusInd Bank Ltd
17. UCO Bank	9. Karur Vysya Bank
18. Vijaya Bank	
19. Bank of Baroda	

**REFERENCE OF CALCULATION OF LEVELISED TARIFF**

<b>Year of Operation</b>	<b>Tariff (Rs/kWh)</b>	<b>Discount Factor at 11% (or as applicable)</b>	<b>Discounted Tariff (Rs/kWh)</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>4 = (2) x 3)</b>
Year 1 w.e.f. date of commercial operation to 31st March of immediately succeeding financial year		1.000	X1
Year 2 w.e.f 1st April to 31st March of immediately succeeding financial year		0.901	X2
Year 3 w.e.f 1st April to 31st March of immediately succeeding financial year		0.812	X3
Year 4 w.e.f 1st April to 31st March of immediately succeeding financial year		0.731	X4
Year 5 w.e.f 1st April to 31st March of immediately succeeding financial year		0.659	X5
Year 6 w.e.f 1st April to 31st March of immediately succeeding financial year		0.593	X6
Year 7 w.e.f 1st April to 31st March of immediately succeeding financial year		0.535	X7
Year 8 w.e.f 1st April to 31st March of immediately succeeding financial year		0.482	X8
Year 9 w.e.f 1st April to 31st March of immediately succeeding financial year		0.434	X9
Year 10 w.e.f 1st April to 31st March of immediately succeeding financial year		0.391	X10
Year 11 w.e.f 1st April to 31st March of immediately		0.352	X11

<b>Year of Operation</b>	<b>Tariff (Rs/kWh)</b>	<b>Discount Factor at 11% (or as applicable)</b>	<b>Discounted Tariff (Rs/kWh)</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>4 = (2) x 3</b>
succeeding financial year			
Year 12 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.317	X12
Year 13 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.286	X13
Year 14 w.e.f 1 <sup>st</sup> April to 31 <sup>s</sup> March of immediately Succeeding financial year		0.258	X14
Year 15 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.232	X15
Year 16 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.209	X16
Year 17 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.188	X17
Year 18 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.170	X18
Year 19 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.153	X19
Year 20 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.138	X20
Year 21 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.124	X21
Year 22 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.112	X22
Year 23 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately		0.101	X23

Year of Operation	Tariff (Rs/kWh)	Discount Factor at 11% (or as applicable)	Discounted Tariff (Rs/kWh)
(1)	(2)	(3)	4 = (2) x 3
succeeding financial year			
Year 24 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.091	X24
Year 25 w.e.f 1 <sup>st</sup> April to 31 <sup>st</sup> March of immediately succeeding financial year		0.082	X25
Total		9.351	X= X1 + X2 + X3 + x4 +X5 +.....+X25
Levellized Tariff for 25 years (in Rs /kWh)=X / 9.351			
Levellized Tariff for 25 years in words			



## **Operation and Maintenance Guidelines of Grid Connected PV Plants**

For the optimal operation of a PV plant, maintenance must be carried out on a regular basis.

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:

### **1. SOLAR PANELS**

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

- ☐ The panels are cleaned at least once every fifteen days.
- ☐ Any bird droppings or spots should be cleaned immediately.
- ☐ Use water and a soft sponge or cloth for cleaning.
- ☐ Do not use detergent or any abrasive material for panel cleaning.
- ☐ Isopropyl alcohol may be used to remove oil or grease stains.
- ☐ Do not spray water on the panel if the panel glass is cracked or the back side is perforated.
- ☐ Wipe water from module as soon as possible.
- ☐ Use proper safety belts while cleaning modules at inclined roofs etc.
- ☐ The modules should not be cleaned when they are excessively hot. Early morning is particularly good time for module cleaning.
- ☐ Check if there are any shade 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.
- ☐ Ensure that the module terminal connections are not exposed while cleaning; this poses a risk of electric shock.
- ☐ Never use panels for any unintended use, e. g. drying clothes, chips etc.
- ☐ Ensure that monkeys or other animals do not damage the panels.

## **2. CABLES AND CONNECTION BOXES**

- ☐ Check the connections for corrosion and tightness.
- ☐ Check the connection box to make sure that the wires are tight, and the water seals are not damaged.
- ☐ There should be no vermin inside the box.
- ☐ Check the cable insulating sheath for cracks, breaks or burns. If the insulation is damaged, replace the wire.
  - ☐ If the wire is outside the building, use wire with weather-resistant insulation.
  - ☐ Make sure that the wire is clamped properly and that it should not rub against any sharp edges or corners.
  - ☐ If some wire needs to be changed, make sure it is of proper rating and type.

## **3. INVERTER**

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

## **4. SHUTTING DOWN THE SYSTEM**

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

## INSPECTION AND MAINTENANCE SCHEDULE

Component	Activity	Description	Interval	By
PV Module	Cleaning	Clean any bird droppings/ dark spots on module	Immediately	User/Technician
	Cleaning	Clean PV modules with plain water or mild dishwashing detergent. Do not use brushes, any types of solvents, abrasives, or harsh detergents.	Fortnightly or as per the site conditions	User/Technician
	Inspection  (for plants > 100 kWp)	Use infrared camera to inspect for hot spots; bypass diode failure	Annual	Technician
PV Array	Inspection	Check the PV modules and rack for any damage.  Note down location and serial number of damaged modules.	Annual	User/Technician
	Inspection	Determine if any new objects, such as vegetation growth, are causing shading	Annual	User/Technician

Component	Activity	Description	Interval	By
		of the array and move them if possible.		
	Vermin Removal	Remove bird nests or vermin from array and rack area.	Annual	User/Technician
Junction Boxes	Inspection	Inspect electrical boxes for corrosion or intrusion of water or insects. Seal boxes if required. Check position of switches and breakers. Check operation of all protection devices.	Annual	Electrician
Wiring	Inspection	Inspect cabling for signs of cracks, defects, loose connections, overheating, arcing, short or open circuits, and ground faults.	Annual	Electrician
Inverter	Inspection	Observe	Monthly	Electrician

Component	Activity	Description	Interval	By
		instantaneous operational indicators on the faceplate of the inverter to ensure that the amount of power being generated is typical of the conditions.  Inspect Inverter housing or shelter for physical maintenance, if required.		
Inverter	Service	Clean or replace any air filters.	As needed	Electrician
Instruments	Validation	Spot-check monitoring instruments (pyranometer etc.) with standard instruments to ensure that they are operational and within specifications.	Annual	PV Specialist
Transformer	Inspection	Inspect transformer oil level, temperature gauges, breather, silica gel, meter, connections etc.	Annual	Electrician
Tracker (if present)	Inspection	Inspect gears, gear boxes, bearings as Required.	Annual	Technician

<b>Component</b>	<b>Activity</b>	<b>Description</b>	<b>Interval</b>	<b>By</b>
	Service	Lubricate tracker mounting bearings, Gearbox as required.	Bi-annual	Technician
Plant	Monitoring	Daily Operation and Performance Monitoring	Daily	Site in charge

<b>Component</b>	<b>Activity</b>	<b>Description</b>	<b>Interval</b>	<b>By</b>
Spare Parts	Management	Manage inventory of spare parts.	As needed	Site in charge
Log Book	Documentation	Document all O&M activities in a workbook available to all personnel	Continuous	Site in charge

**Operation and Maintenance Guidelines of Grid Connected PV Plants**

**(Part-C)**

- ② Periodic cleaning of solar modules, preferably once every fortnight.
- ② O&M of Solar Power Plant shall be compliant with grid requirements to achieve committed energy generation.
- ② Periodic checks of the Modules, PCUs and BoS shall be carried out as a part of routine preventive and breakdown maintenance.
- ② Immediate replacement of defective Modules, Invertors/PCUs and other equipment as and when required.
- ② Supply of all spares, consumables and fixtures as required. Such stock shall be maintained for all associated equipments and materials as per manufacturer/ supplier's recommendations.
- ② All the equipment testing instrument required for Testing, Commissioning and O&M for the healthy operation of the Plant shall be maintained by the Bidder. The testing equipments must be calibrated once every 2 years from NABL accredited labs and the certificate of calibration must be kept for reference as required.
- ② If negligence/ mal-operation on part of the Bidder's operator results in failure of equipment, such equipment should be repaired/ replaced by the Bidder free of cost.
- ② If any jobs covered in O&M Scope as per RFS are not carried out by the contractor/ Bidders during the O&M period, the <<NAME OF THE SPV>> shall take appropriate action as deemed fit.
- ② <<NAME OF THE SPV>> reserves the right to make surprise checks/ inspection visits at its own or through authorized representative to verify the O&M activities being carried out by the Bidder. Failure to adhere to above guidelines will result in penal action including debarring from participation in next tender.

### 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:

<b>Solar PV Modules/Panels</b>	
IEC 61215/ IS 14286	Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
IEC 61701	Salt Mist Corrosion Testing of Photovoltaic (PV) Modules
IEC 61853- Part 1/ IS 16170: Part 1	Photovoltaic (PV) module performance testing and energy rating –: Irradiance and temperature performance measurements, and power rating
IEC 62716	Photovoltaic (PV) Modules – Ammonia (NH <sub>3</sub> ) Corrosion Testing  (As per the site condition like dairies, toilets)
IEC 61730-1,2	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction, Part 2: Requirements for Testing
IEC 62804	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)
IEC 62759-1	Photovoltaic (PV) modules – Transportation testing, Part 1: Transportation and shipping of module package units

## Solar PV Inverters

IEC 62109-1, IEC 62109-2	<p>Safety of power converters for use in photovoltaic power systems –</p> <p>Part 1: General requirements, and Safety of power converters</p>
	<p>for use in photovoltaic power systems</p> <p>Part 2: Particular requirements for inverters. Safety compliance (Protection degree IP 65 for outdoor mounting, IP 54 for indoor mounting)</p>
IEC/IS 61683 (as applicable)	<p>Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency (10%, 25%, 50%, 75% &amp; 90-100% Loading Conditions)</p>
BS EN 50530 (as applicable)	<p>Overall efficiency of grid-connected photovoltaic inverters:</p> <p>This European Standard provides a procedure for the measurement of the accuracy of the maximum power point tracking (MPPT) of inverters, which are used in grid-connected photovoltaic systems. In that case the inverter energizes a low voltage grid of stable AC voltage and constant frequency. Both the static and dynamic MPPT efficiency is considered.</p>
IEC 62116/ UL 1741/ IEEE 1547 (as applicable)	<p>Utility-interconnected Photovoltaic Inverters - Test Procedure of Islanding Prevention Measures</p>
IEC 60255-27	<p>Measuring relays and protection equipment – Part 27: Product safety requirements</p>
IEC 60068-2 (1, 2, 14, 27, 30 & 64)	<p>Environmental Testing of PV System – Power Conditioners and Inverters</p> <p>a) IEC 60068-2-1: Environmental testing - Part 2-1: Tests - Test A: Cold</p> <p>b) IEC 60068-2-2: Environmental testing - Part 2-2: Tests - Test B: Dry heat</p> <p>c) IEC 60068-2-14: Environmental testing - Part 2-14: Tests - Test N: Change of temperature</p>

	<p>d) IEC 60068-2-27: Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock</p> <p>e) IEC 60068-2-30: Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)</p> <p>f) IEC 60068-2-64: Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance</p>
IEC 61000 – 2,3,5  (as applicable)	Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC) testing of PV Inverters
<b>Fuses</b>	
IS/IEC 60947 (Part 1, 2 & 3), EN 50521	<p>General safety requirements for connectors, switches, circuit breakers (AC/DC):</p> <p>a) Low-voltage Switchgear and Control-gear, Part 1: General Rules</p> <p>b) Low-Voltage Switchgear and Control-gear, Part 2: Circuit Breakers</p> <p>c) Low-voltage switchgear and Control-gear, Part 3: Switches, disconnections, switch-disconnections and fuse-combination Units</p> <p>d) EN 50521: Connectors for photovoltaic systems – Safety requirements and tests</p>
IEC 60269-6	Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy Systems
<b>Surge Arrestors</b>	
IEC 62305-4	Lightening Protection Standard
IEC 60364-5-53/ IS  15086-5 (SPD)	Electrical installations of buildings - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and Control
IEC 61643-11:2011	Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods

<b>Cables</b>	
IEC 60227/IS 694, IEC 60502/IS 1554 (Part 1 & 2)/ IEC69947	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)
BS EN 50618	Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC Cables
<b>Earthing /Lightning</b>	
IEC 62561 Series (Chemical earthing)	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
<b>Junction Boxes</b>	
IEC 60529	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>	
IS 16444 or as specified by the DISCOMs	A.C. Static direct connected watt-hour Smart Meter Class 1 and 2 — Specification (with Import & Export/Net energy measurements)
<b>Solar PV Roof Mounting Structure</b>	
IS 2062/IS 4759	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
- UV Rheinland and UL

**PROJECT REPORT FORMAT****Format for Summary Project Report for  
Grid Connected Rooftop and Small Solar PV Power Plants**

1. Name of Bidder
2. RFS no.
3. Project details (Site location & Address)
4. Brief about the Rooftop Solar Power Generation System
5. Details of the beneficiary
6. Specifications of the Components and Bill of Material/ Quantities

Sl. no	Component	Specifications	Quantity	Make
A	Solar PV module			
A.1	Aggregate Solar PV capacity (kWp)			
B	Grid Tie inverter (Type and Capacity)			
B.1	Aggregate Inverter capacity (kVA)			
C	Module mounting structure (Certified by a Structural Engineer (Mandatory for 101 kWpto 500 kWp)			
D	Array Junction Box			
E	AC Distribution Board			
F	Cable (All type)			
G	Earthing Kit(maintenance free)			
H	Meters			
I	Online monitoringsystem			
J	Any other component			
K	Transformer			

7. Unit cost of solar power generation
8. Cost benefit analysis, payback period
9. Expected output/annum
10. Respective drawings for layout, electrical wiring connections, earthing, components etc.
11. Connectivity details with grid and metering arrangement (with sketch diagram)
12. Copy of electricity bill of the beneficiary and consumer number
13. Any other information
11. Documentary proof regarding beneficiary type as per clause 1.2 of the RFS

**(The above information should be limited up to 2-3 pages only)**

### Monthly O & M Report

**Month and year:**

**Name of the bidder:**

**RFS ref no.:**

**Project Capacity:**

**Address of the site:**

**Part A**

Component	Activity	Description	Date	Name / Signature	*Remarks
PV Module	Cleaning	Immediately clean any bird droppings/ dark spots on module.			
	Cleaning	Clean PV modules with plain water or mild dishwashing detergent.			
	Inspection (for plants > 100 kWp)	Infrared camera inspection for hot spots; bypass diode failure.			
PV Array	Inspection	Check the PV modules and rack for any damage.			
	Inspection	If any new objects, such as vegetation growth etc., are causing shading of the array. Remove if any.			
	Vermin	Remove bird nests or vermin from array and			

Component	Activity	Description	Date	Name / Signature	*Remarks
	Removal	rack area.			
Junction Boxes	Inspection	Inspect electrical boxes for corrosion, intrusion of water or vermin.  Check position of switches and Breakers.  Check status of all Protection devices.			
Wiring	Inspection	Inspect cabling for signs of cracks, defects, loose connections, corrosion,			
		overheating, arcing, short or open circuits, and ground faults.			
Inverter	Inspection	Observe instantaneous operational indicators on the faceplate. Inspect Inverter housing or shelter for any physical Maintenance. Check for connection tightness.			
Inverter	Service	Clean or replace any air filters.			
Instruments	Validation	Verify monitoring instruments (Pyranometer etc.) with			

Component	Activity	Description	Date	Name / Signature	*Remarks
		standard instruments to verify their operation Within tolerance limits.			
Transformer	Inspection	Inspect transformer oil level, temperature gauges, breather, silica gel, meter, connections etc.			
Plant	Monitoring	Daily Operation and Performance Monitoring.			
Spare Parts	Management	Manage inventory of spare parts.			
Log Book	Documentation	Maintain daily log records.			
Tracker (if any)	Inspection	Inspect gears, gear boxes, bearings, Motors.			
	Service	Lubricate bearings, Gear as required.			

\*Provide details of any replacement of systems/components, damages, plant/inverter shut down (planned/forced), breakdown, etc under remarks.

\*Daily register is to be maintained by the bidder at each location greater than 50 kWp. The same may be inspected by <<NAME OF THE SPV>> or its authorized representative at any time 25 years of O&M period. The Register will have the information about the daily generation, Inverter downtime if any, Grid outages.

**Part B**

<b>Date</b>	<b>Generation kWh</b>	<b>Grid outage (hh:mm)</b>	<b>Inverter down period (hh:mm)</b>	<b>Remarks</b>
<b>1</b>				
<b>2</b>				
<b>3</b>				
<b>4</b>				
<b>5</b>				
<b>6</b>				
<b>7</b>				
<b>8</b>				
<b>9</b>				
<b>10</b>				
<b>11</b>				
<b>12</b>				
<b>13</b>				
<b>14</b>				
<b>15</b>				
<b>16</b>				
<b>17</b>				
<b>18</b>				
<b>19</b>				
<b>20</b>				
<b>21</b>				
<b>22</b>				

Total generation for the month in kWh:

Cumulative generation since commissioning in kWh:

CUF for month in %:

Cumulative CUF since commissioning in %:

Date:

Signature of the Authorised  
signatory of the Bidder

<b>Project Completion Report for Grid-Connected Rooftop</b>			
Financial year * :			
Approval No. * :			
Proposal Title :			
Installed by agency :			
Project initiated by :			
<b>Title of the Project* :</b>		Capacity (kWp)*:	
<b>Category of the organization / beneficiary* :</b>		Name of the contact person* :	
Address of contact person* :			
State* :		District/City* :	
Mobile* :		Email* :	
Telephone No. :	STD code-	Website :	
<b>Other info</b>			
Electricity Distribution Company Name :			
Electricity consumer account no. as per electricity bill :		as on Date :	
<b>Bank Details of Beneficiary</b>			
Name of A/c holder :			
Name of Bank :			
Name of Branch and Address :			
Bank IFSC Code :			

9 Digit Micr Code :

Type of Account :

Account No. :

Aadhaar Card Number :

**Technology Description & System Design /Specification**

**(Compliance to BIS/IEC Standards is mandatory)**

<b>1. Module</b>			
Capacity/Power of each PV Module(Wp)* :	1. Capacity/Power 2. Capacity/Power		1. Nos: 2. Nos:
Cumulative Capacity of Modules(KWp):			
Solar cell technology :			
Module efficiency (in Percentage) :			
<b>2. Inverters</b>			
Type of inverter :			
Make of inverter :			
Capacity/Power of each PCU/inverters (VA)* :	Capacity/Power Nos.		
Capacity/Power of PCU/inverters (KVA) :			
Inverter efficiency (Full load) :			
(in percentage)			
<b>3. Metering Arrangement</b>			

Details of Metering			
Type of Meter* :			
Make of Meter :			
<b>5. Other information</b>			
Units of electricity generated by the solar plant as per meter (in KWh):			
<b>Monitoring Mechanism :</b>			
No. of personnel to be trained in O&M :			
Task & Expected Schedule(in Months) :			
Grid connectivity level			
Grid connectivity level phase* :		Grid connectivity level Voltage* :	
Costing of Project			
Hardware cost :	Rs.	Total Cost of Installation :	Rs.
<b>Means of Finance</b>			
Envisaged Central Financial Assistance from MNRE*	Rs.		
Subsidy from states if any	Rs.		
Contribution of Beneficiaries*	Rs.		
Other Source (s) of Funding	Rs.		



	n* Phase (Φ): (Please ) Galvanic Isolation (Please )	<input type="checkbox"/> Single phase <input type="checkbox"/> 3-Phase <input type="checkbox"/> Inside Inverter <input type="checkbox"/> Outside Inverter
14	Both AC and DC components of the SRPV power plants Earthed*: <input type="checkbox"/>	
15	CEIG Inspection required*	<input type="checkbox"/> Yes <input type="checkbox"/> No
16	If, Yes, Inspection date * (Attach copy of CEIG Certificate)	
18	Bank Account details	Account No. Bank Branch
19	Date of Grid Synchronization*	
20.	Net metering and grid connectivity fro (Attach acknowledgment m DISCOM, if received)	Applied on:
		Fees Deposited On:

\*to be provided mandatorily

It is certified that the information furnished above is true to the best of my knowledge.

Consumer /  
Authorised Signatory of  
Implementing Agency on behalf of consumer

Copy To:

Engineer In-charge, <<NAME OF THE SPV>>, [City].

**Undertaking from the Bidding Company on their Letter Head**

Name:  
Full Address:  
Telephone No.:  
E-mail address:  
Fax/No.:  
To,

<<NAME OF THE SPV>>  
[Address]

Dear Sir,

We refer to the RFS No.....dated.....for "Implementation of 5.00 MW Grid connected Roof Top Solar PV System Scheme in [City] in [State] State in India".

We have carefully read and examined in detail the RFS, including its amendments and clarifications as available on <<NAME OF THE SPV>> website (\_\_\_\_\_).

We confirm that M/s..... (Insert name of Bidding Company/) has fulfilled all the requirements of MSME Act and as per the acknowledgement/certificate of MSME provided by ..... (Insert name of Authority who has provided the MSME

Certificate), we are eligible for execution of the Solar PV project for which the bid has been submitted by us in pursuance to the <<NAME OF THE SPV>>'s RFS No.....dated.....

Further, we are complying and will continue to comply all terms and conditions of acknowledgement/certificate of MSME until any further orders from the MSME authority. Any change in the acknowledgement/certificate of MSME, submitted to <<NAME OF THE SPV>>, shall be immediately appraised to <<NAME OF THE SPV>> for their any further decision in this regard.

Further, we are also eligible for the benefits provided under MSME Act, 2006 and any further order issued by Govt. of India in this regard prior to last date of bid submission for the aforementioned RFS.

In case any information provided/documents submitted or anything material or otherwise is found w.r.t above undertaking, <<NAME OF THE SPV>> shall have the right to cancel the capacity allocated/sanctioned to us and forfeit the Performance Bank Guarantee submitted by us. In addition to above, we (including our affiliate/parent/assigns) may also be debarred by <<NAME OF THE SPV>> to participate in any future tender.

All the terms used herein but not defined, shall have the meaning as ascribed to the said terms under the RFS.

**Signature of Managing Director/Authorized signatory (with company Stamp)**

**Format for registration at CPM (centralized project monitoring system) for Submission of project sanctioned documents**

- 1) **Organization Name:**
  - a. **First Name :**
  - b. **Last Name:**
  - c. **Designation:**
- 2) **User Name: s**
  - a. **Password\*:**
  - b. **Confirm password\*:**
  - c. **Email ID\*:**
- 3) **Phone No.:**
  - a. **Mobile No.\*:**
  - b. **Role\*:**
  - c. **Status\*:**
- 4) **Address:**
- 5) **Project Type:**

**II. BANK DETAIL:**

- 1) **Aadhaar Number:**
  - a. **Voter ID Number:**
  - b. **Driving License Number:**
- 2) **BANK Name:**
  - a. **Bank Branch:**
  - b. **Bank Account Number:**
  - c. **IFSC code:**
- 3) **VAT Number:**
  - a. **Registration Number:**
  - b. **PAN Number:**
  - c. **TIN Number:**

Note - \* marks filled are mandatory



ANNEXURE - Q

PRESENT CEILING RATES OF PROJECT INSTALLATION COST AS PER [SNA] OF <<Name of the State>> VIDE NOTICE DT. <<Mention Date>>

S.NO	CATEGORY	FINALISED PRICE Rs. /watt	
01	1KWp		
02	2 KWp		
03	3 KWp		
04	4 KWp		
05	5 KWp		
06	6 KWp- 10 KWp		
07	11 KWp- 50 KWp		
08	51 KWp- 100 KWp		
09	101 KWp- 500 KWp		