

TENDER

FOR

**SUPPLY, INSTALLATION, COMMISSIONING, MAINTENANCE AND OPERATION
OF**

**GRID CONNECTED SOLAR ROOFTOP SYSTEMS
IN VARIOUS GOVT. HOSPITALS & MUNICIPALITIES IN
VIZIANAGARAM DISTRICT OF ANDHRA PRADESH STATE**

UNDER

RESCO ROUTE

TENDER NOTICE NO:

NREDCAP/OSD/NM/RESCO/VZM/2017, DATED 20.03.2017

CLOSING DATE: 06.04.2017

**NEW & RENEWABLE ENERGY DEVELOPMENT CORPORATION OF A.P LTD.
(NREDCAP)**

5-8-207/2, PISGAH COMPLEX, NAMPALLY, HYDERABAD – 500 001

PHONE: 040-23202391, 2320 2276

FAX: 040- 232016666

Email: info@nredcap.in

Website: www.nredcap.in

DISCLAIMER

1. The Tender Bid document is not transferable.
2. This Bid document is issued by New & Renewable Energy Development Corporation of AP Ltd (NREDCAP).
3. The Bid document is not a prospectus or offer on invitation to the public in relation to the sale of shares, debentures or securities, nor shall this bid document or any part of it form the basis of or be relied upon in any way in connection with, any contract relating to any shares, debentures or securities.
4. In considering an investment, if any, in the proposed Project, each recipient should make its own independent assessment and seek its own professional, technical, financial and legal advice.
5. Whilst the information in this Bid document has been prepared in good faith, it is not and does not purport to be comprehensive or to have been independently verified. Neither NREDCAP nor any of their officers or employees, nor any of their advisers nor consultants, accept any liability or responsibility for the accuracy, reasonableness or completeness of, or for any errors, omissions or misstatements, negligent or otherwise, relating to the proposed Project, or makes any representation or warranty, express or implied, with respect to the information contained in this document or on which this document is based or with respect to any written or oral information made or to be made available to any of the recipients or their professional advisers and, so far as permitted by law and except in the case of fraudulent misrepresentation by the party concerned, and liability therefore is hereby expressly disclaimed.
6. The information contained in this document is selective and is subject to updating, expansion, revision and amendment issued before due date. It does not, and does not purport to, contain all the information that a recipient may require. Neither NREDCAP nor any of their officers, employees nor any of its advisors nor consultants undertakes to provide any recipient with access to any additional information or to update the information in this document or to correct any inaccuracies therein which may become apparent. Each recipient must conduct its own analysis of the information contained in this document or to correct any inaccuracies therein that may contained in this document and is advised to carry out its own investigation into the proposed Project, the legislative and regulatory regime which applies thereto and by and all matters pertinent to the proposed Project and to seek its own professional advice on the legal, financial, regulatory and taxation consequences of entering into any agreement or arrangement relating to the proposed Project.
7. This bid document, if includes certain statements, estimates, projections, designs, targets and forecasts with respect to the Project, such statements, estimates, projections, targets and forecasts, designs reflect various assumptions made by the management, officers and employees of NREDCAP, which assumptions (and the base information on which they are made) may or may not prove to be correct. No representation or warranty is given as to the reasonableness of forecasts or the assumptions on which they may be based and nothing in this document is, or should be relied on as a promise, representation or warranty.

Authorised Person: The VC & Managing Director, NREDCAP

Address: 5-8-207/2, Pishgah Complex, Nampally, Hyderabad 500 001

Tel: 040-23202391 . 23202262

Fax:040 - 23201666

Email: info@nredcap.in; we@nredcap.in;

Place: Hyderabad

Date: 20.03.2017

Information pertaining to Bid submission via e-Procurement platform

1. Issue of Bid document

The detailed terms and conditions for qualification of the Bidders and for Bid submission are indicated in the bid document. All those interested in obtaining the bid document may download from <https://tender.apecurement.gov.in>. Please visit <https://tender.apecurement.gov.in> for details regarding online submission of the bid document

Bidders are required to procure a Digital Signature Certificate from any Certifying Authorities (CA) in India from the list mentioned in the below URL:

<https://tender.apecurement.gov.in/DigitalCertificate/signature.html>. The Digital Signature Certificate is mandatory for participation in e-Procurement. The Bids can be submitted only upon logging-in with the Digital Signature Certificate in the e-Procurement portal.

The bidder would be required to register on the e-Procurement market place www.apecurement.gov.in or <https://tender.apecurement.gov.in> and submit their bids online. Offline bids shall not be entertained by the Authorized Representative for the tenders published in the e-Procurement platform.

The bidders shall submit their eligibility and qualification details, Technical bid, Financial bid etc., in the standard formats displayed in e-Procurement web site. The bidders shall upload the scanned copies of all the relevant certificates, documents etc., in support of their eligibility criteria/Technical bids and other certificate/documents in the e-Procurement web site. The bidder shall sign on the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity.

2. Receipt and Opening of Bid:

Bid must be submitted at the website mentioned in the Bid document on or before **dt.06.04.2017** (last date of submission of Bid) 17.00 hours (IST). If it is a public holiday on the last date for submission of the Bid, the submission and the receipt of the Bid shall be on the next working day. The Technical Bid and the Financial Bid shall be opened as per the time schedule given in the Bid document.

The Authorized Representative shall abide by the Government Orders G.O. Ms. No. 174, Dt: 01-09-2008, G.O. Ms. No. 11, Dt: 01-07-2003, G.O. Ms. No.4, Dt: 17-02-2005, G.O. Ms. No. 6, Dt: 28-02-2005, G.O. Ms. No. 6, Dt: 11-1-2005 and G.O. Ms. No. Dt: 30-12-2005, while conducting the e-Procurement process. The Bidders are requested to read these orders available at <https://tender.apecurement.gov.in>.

3. Payment of Transaction Fee:

It is mandatory for all the participant bidders from 1st January 2006 to electronically pay a Non-refundable Transaction fee of **INR 10,000** to MD

APTS., the service provider through "Payment Gateway Service on E-Procurement platform". The Electronic Payment Gateway accepts all Master and Visa Credit Cards issued by any bank and Direct Debit facility/Net Banking of ICICI Bank, HDFC, Axis Bank to facilitate the transaction. This is in compliance as per G.O.Ms. 13 dated 07.05.2006. A service tax of 15% (or as in force) + Bank Charges for Credit Card Transaction of 2.09% on the transaction amount payable to MD APTS. shall be applicable.

4. Nodal Person for enquiries and clarifications

All correspondence, clarifications in respect of the Bid document and submission of the Bid shall be addressed to:

| | |
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| Designation: | The VC & Managing Director,NREDCAP |
| Address: | 5-8-207/2, Pishah Complex, Nampally, Hyderabad 500 001 |
| Telephone: | 040 23202391 / 23202262 |
| E-mail id: | info@nredcap.in ; we@nredcap.in |

| Sl.No | Description | |
|-------|---------------------------------|---|
| 1 | Department Name | New & Renewable Energy Development Corporation of AP Ltd (NREDCAP) |
| 2 | Office | The VC & Managing Director, NREDCAP |
| 3 | Tender Number | NREDCAP/OSD/NM/RESCO/VZM/2017, DATED 20.03.2017 |
| 4 | Tender Subject | Design, Supply, Installation, Commissioning, Maintenance and Operation of Grid connected Solar Rooftop PV Systems of an aggregate capacity of 2400 KWp at various buildings belong to Govt. Hospitals & Municipalities in Vizianagaram District in the State of Andhra Pradesh under RESCO route. |
| 5 | Tender Type | Open tender |
| 6 | Tender Category | Tariff based bidding. |
| 7 | Definitions and Interpretations | <p>For the purpose of e-Procurement, the following definitions shall apply</p> <ul style="list-style-type: none"> • Tender Inviting Authority shall mean the same as Authorized Representative. • Tender Documents shall mean the same as the Bid document. • Commercial Bid" or "Price Bid" shall mean the same as the Financial Bid. • Bidders shall also upload a checklist of all documents enclosed under Technical Bid and Financial Bid and format as required under the Bid document. • EMD/Bid Security" shall mean the same as the EMD as per the provisions of this Bid |

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| | | document. • Bidder/Tenderer/Contractor shall mean one and the same. |
| 8 | Tender Validity Period | 90 Days from the Bid deadline date |

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| 9 | Bid Security /EMD (INR) | As specified in the Bid document as per the prescribed Format, proposals would need to be accompanied by a Bid security (EMD) in Indian Rupees for an amount of Rs. 5.00 lakhs and valid upto 31.07.2017 . The bid security shall be kept valid throughout the Proposal Validity Period including any extensions in the Proposal Validity Period and would be required to be further extended if so required by NREDCAP. Any extension of the validity of the Bid Security as requested by NREDCAP shall be provided by the agency a minimum of seven calendar days prior to the expiry of the validity of the Bid Security, being extended. |
| 10 | Bid Security/EMD Payable to | Vice-chairman & Managing Director, NREDCAP |
| 11 | Transaction Fee | Transaction fee: All the participating bidders who submit the bids have to pay an amount of INR 10,000/- & applicable service tax as levied by the Govt. of India on transaction fee through online in favour of MD APTS. The amount payable to the MD, APTS is non refundable Bid Processing Fee : The Tenderer shall pay an amount of INR 25,000 plus 15% (or as in force) service tax by way of Demand Draft in favour of NREDCAP, payable at Hyderabad. The copy of the DD shall be uploaded and the original DD shall be furnished along with the tender document to NREDCAP. |
| 12 | Transaction Fee | Payable to the MD, APTS, Hyderabad, through online payment only. |
| 13 | Bid Processing Fee | Payable to VC&MD, NREDCAP, Hyderabad by way of Demand Draft. |
| 14 | Bid Document Download Start Date | 21.03.2017 |
| 14 | Bid Document Download End Date | 06.04.2017, 11.00 Hours |
| 15 | Bid closing date | 06.04.2017, 17.00 Hours for uploading technical Bid and Financial-Bid |
| 16 | End date for submission of hard copies of Technical bid (scanned) with supporting documents | 07.04.2017, 13.00 Hours |
| 17 | Technical Bid | 07.04.2017, 15.00 Hours |

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| | Opening date | |
| 18 | Financial Bid Opening date | Will be intimated to the technically qualified bidders in advance by notifying in the website. |
| 19 | Place of Tender Opening | 5-8-207/2, Pisgah Complex, Nampally, Hyderabad 500001 |
| 20 | Contact Officer | The VC & Managing Director, NREDCAP, Hyderabad |
| 21 | Address/E-mail id | info@nredcap.in ; we@nredcap.in |
| 22 | Contact Details/Telephone, Fax | Telephone –040 23202391 / 23202262 Fax – 040 23201666 |
| 23 | Procedure for Bid submission | <p>The Bidder shall submit his response through Bid submission to the tender on e-Procurement platform at https://tender.apecurement.gov.in by following the procedure.</p> <p>The Bidder would be required to register on the e-procurement market place https://tender.apecurement.gov.in and submit their Bids online. Offline Bids shall not be entertained by the Tender Inviting Authority for the tenders published in e-Procurement platform.</p> <p>The Bidders shall submit their eligibility and qualification details, EMD, Technical Bid, Financial Bid etc., in the online standard formats displayed in e-Procurement web site. The Bidders shall upload the scanned copies of all the relevant certificates, documents etc., in support of their eligibility criteria/Technical Bid/EMD and other certificate/documents in the e-Procurement web site.</p> <p>The Bidder shall sign on the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity.</p> <p>The Bidder shall upload the entire required documents specific to the Bid document in the e-tender platform duly signing each and every document. The bidder shall invariably submit the hard copies of the Technical bid to the Authorised Representative either personally or through courier or post before the timelines as indicated in this tender document. On-submission of Technical bid along with relevant documents shall lead to rejection of tender.</p> |
| 24 | Registration with e-Procurement platform | For registration and online Bid submission, Bidders may contact HELP DESK of Vupadhi Techno Services Pvt. Ltd, 1st Floor, Ramky Grandiose, Sy. No: 136/2&4, Gachibowli, Hyderabad, Telangana 500032 |
| | | https://tender.apecurement.gov.in . |

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| | | 1. Digital Certificate authentication: The Bidder shall authenticate the bid with his Digital Certificate for submitting the Bid electronically on e-Procurement platform and the Bids not authenticated by Digital Certificate of the Bidder will not be accepted on the e-Procurement platform. |
| | | (OR) |
| | | Any other Registration Authority in India. The City-wise list of RAs is available by clicking the link "Apply for a Class-2 Certificate" under "Enroll" section in the web site: www.tcs-ca.tcs.co.in/mca21/index.jsp |
| | | 2. Hard Copies: |
| | | <u>Bidders shall submit hard copies of EMD and Bid Processing fee to the address mentioned in the respective clause of this Bid document before tender dead line.</u> Bidders shall also upload scanned copies of these documents (DD/PO towards processing fee and EMD) as a part of the Qualification criteria of bid on the e-Procurement platform. |
| | | All the Bidders shall invariably upload the scanned copies of DD/BG/PO in e-procurement system and this will be one of the key requirements to consider the bid responsive. |
| | | The Authorized Representative will not take any responsibility for any delay in receipt/non-receipt of original, Certificates/Documents from the successful Bidder before the stipulated time. On receipt of documents, the department shall ensure the genuinity of certificates/documents uploaded by the Bidder in e-Procurement system, in support of the qualification criteria before concluding the agreement. |
| | | 3. GO. Ms. No. 174 -I&CAD dated: 1-9-2008: |
| | | i. <u>Deactivation of Bidders:</u> If any successful Bidder fails to submit the original hard copies of uploaded certificates/documents, within stipulated time or if any variation is noticed between the uploaded documents and the hardcopies submitted by the Bidder, the successful Bidder will be suspended from participating in the tenders on e-Procurement platform for a period of 3 years. |
| | | ii. The e-Procurement system would deactivate the user ID of such defaulting Bidder based on the trigger/recommendation by the Authorized Representative in the system. |
| | | iii. Besides this, the Authorised Representative shall invoke all processes of law including |

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| | | criminal prosecution of such defaulting Bidder as an act of extreme deterrence to avoid delays in the Bid process for execution of the development schemes taken up by the NREDCAP. Other conditions as per the Bid document are applicable. |
| | | iv. The Bidder is requested to get a confirmed acknowledgement from the Authorized Representative a proof of Original Hard copies submission to avoid any discrepancy. |
| | | 4. Bid document: |
| | | i. The Bidder is requested to download the Bid document and read all the terms and conditions mentioned in the Bid document and seek clarification if any from the Authorized Representative. <u>Any offline Bid submission clause in this Bid document could be neglected.</u> |
| | | ii. The Bidder has to keep track of any changes by viewing the Addendum/ Corrigenda issued by the Authorised Representative on time-to-time basis in the e-procurement platform. The Authorized Representative inviting Bids shall not be responsible for any claims/problems arising out of this. |
| | | 5. Bid Submission Acknowledgement: The Bidder shall complete all the processes and steps required for Bid submission. The system will generate an acknowledgement with a unique Bid submission number after completing all the prescribed steps and processes by the Bidder. Users/Bidders may also note that the Bids for which an acknowledgement is not generated by the e-Procurement system are treated as invalid or not saved in the system. Such invalid Bids are not made available to the Authorized Representative for processing the Bids. The NREDCAP, Government of AP and Vupadhi Techno Services Pvt. Ltd are not responsible for incomplete Bid submission by the Bidders/users. |
| 25 | Rights reserved with the department | Authorized Representative reserves the right to accept or reject any or all of the tenders received without assigning any reasons thereof. |
| 26 | General Terms and Conditions | As per the Bid Documents. |
| 27 | Other information | Bidders shall contact Vupadhi Techno Services Pvt. Ltd for all queries related to bid submission on the e-Procurement platform. HELP DESK of Vupadhi Techno Services Pvt. Ltd, 1st Floor, Ramky Grandiose, Sy. No: 136/2&4, Gachibowli, Hyderabad, Telangana 500032 |

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| 28 | e-Procurement Conditions | <p>1: We, the undersigned, examined the Conditions of Contract, Specification, Special Conditions of Contract, Basic Parameters of the proposed Scheme and subsequent Addendums for the above mentioned works. We have examined, understood and checked these documents and have ascertained that there is no ambiguity in the Procurer's requirements. We accordingly offer to complete the work in conformity with such documents for the price as given in the Financial Bid submitted and attached at the commercial stage.</p> <p>2: Note: Financial Bid attached at commercial stage will be considered for commercial evaluation.</p> <p>3: As per the conditions in the folder management, we have extracted the file uploaded and verified the contents of the Zipped files to avoid disqualifications.</p> <p>4: We have also read the Note in the folder management; the documents attached to the commercial bid stage will be encrypted and stored. Documents uploaded in Common folder and attached to the technical bid stage shall not be encrypted.</p> |
| 29 | Uploading | <p>1. Financial Bid shall be uploaded at the commercial stage available on the e-Procurement platform which has an encryption facility.</p> <p>2. The Bidder SHALL AVOID zipping two versions of the same Financial Bid into a single folder.</p> <p>3. In case the Authorized Representative finds multiple versions of the same Financial Bid in a single zip folder, such Bids are liable for rejection by the Authorized Representative.</p> |

PREAMBLE

The Govt. of Andhra Pradesh has announced AP Solar Power Policy 2015 with provisions for promotion of Grid connected Solar Rooftop systems with net metering/gross metering option to the consumers, vide G O Ms No.8 dated 12.02.2015 of Energy, Infrastructure & Investment (PR-II) Dept. The following are the provisions for promotion of grid connected solar rooftop in A.P. Solar Power Policy 2015,

- The Government will promote solar rooftop systems on public buildings, domestic, commercial and industrial establishments.
- The projects of capacity upto 1000 KWp at a single location will be permitted.
- The consumers are free to choose either net or gross meter option for sale of power to DISCOM and the applicable tariff for either of the cases shall be equal to average Cost to Service of the DISCOM which will be determined by APERC every year. (The average Cost to Service as per the Tariff order 2016-17 as determined by APERC is Rs. 5.33 per unit)
- Permission will be given to the group of persons / society to set up solar power projects and will be treated as collective generation for

supply of power to the households of each society / group member.

- Time bound clearance of proposals through online mode.

The DISCOMs have issued the implementation guidelines based on the promotion policy announced by the GoAP.

On behalf of Govt. Hospitals & Municipalities in Vizianagaram District, NREDCAP inviting Bids for empanelment for Supply, Installation, Commissioning, maintenance and Operation of Solar Rooftop Power plants for 25 years in Andhra Pradesh, under Net Metering Policy to take up the projects under RESCO route. NREDCAP will provide subsidy @ Rs.12 per Watt for the total capacity.

The tender will be awarded based on lowest levelized tariff for 25 years in Rs./KWh. NREDCAP doesn't assure the Successful Bidder(s) for award of any Projects solely on the basis of being successful bidder in this Tender, and the work will be entrusted after obtaining consent from the respective Govt. Hospitals & Municipalities. The User Agency or NREDCAP shall entrust the work and enter into agreement directly with the bidder.

The Successful Bidder(s) shall work closely with the Govt. Hospitals & Municipalities in implementing the projects. Installations shall be completed within 120 days from date of entering into agreements with the User Agency/NREDCAP.

SECTION - I

INTRODUCTION, BID DETAILS AND INSTRUCTIONS TO THE BIDDERS

1. INTRODUCTION

- 1.1 NREDCAP has received proposals from Govt. Hospitals & Municipalities in Vizianagaram District for installation of grid connected solar roof top systems in the buildings/open areas owned by them under RESCO route. The following are the capacities proposed in various buildings belong to Govt. Hospitals & Municipalities.

| Sl. No. | Location | Proposed capacity |
|---------|--|-------------------|
| 1 | Gosha Hospital, Vizianagaram | 150 KWp |
| 2 | Maharaja District Hospital, Vizianagaram | 300 KWp |
| 3 | Area Hospital, Parvathipuram | 100 KWp |
| 4 | Municipal Office, Parvathipuram | 700 KWp |
| 5 | Municipal Office, Bobbili | 900 KWp |
| 6 | Municipal Office, Nellimarla | 250 KWp |
| | Total | 2400 KWp |

- 1.2 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.
- 1.3 The bidder shall be deemed to have examined the bid document, to have obtained his own information in all matters whatsoever that might affect 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 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.

2.1 BID DETAILS:

- 2.1 The bid shall be on RESCO Route for design, supply, installation and commissioning of grid connected solar rooftop systems and the levelized tariff quoted by the bidders for 25 years and shall not exceed Rs.6.50 /unit considering 20% subsidy by NREDCAP.
- 2.2 The bidder shall pay 20 paisa /unit to NREDCAP throughout 25years out of the bidden tariff towards project monitoring and coordination charges.

3.0 SIZE OF THE PROJECTS:

- 3.1 The size of each project shall be in the range from 100 kWp to 900 kWp as detailed above. One project may however comprise of several rooftop units. Each roof top unit can separately connect with the grid and may have separate meters. The bidder shall quote separately for total capacity of 2400 KWp.
- 3.2 Further, Successful bidder to whom letter of allocation has been issued will be allowed to submit proposals separately for each Hospital/Municipality for approval and issue of sanction letter by NREDCAP. Sanction letter will be issued for the total aggregate capacity or capacity proposed for each Hospital & Municipality. However, the quoted price shall be uniform for all billings.

4.0 ELIGIBILITY CRITERIA

- 4.1 The Bidder should be either a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto and engaged in the business of Solar Power.

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

- 4.2 The bidder should be a registered System Integrator empaneled with NREDCAP for the Year 2016-18 to take up projects under Net Metering basis in the category of 6-500 KWp or approved Channel Partner of MNRE, and with requisite experience of Supply, Installation and Commissioning of Grid Connected Solar Projects.
- 4.3 The Bidder should have designed, supplied, installed & commissioned at least one Grid connected Solar PV Power Project having a capacity of not less than 100 KWp at single location and should have installed a minimum aggregate capacity of 1 MWp grid connected solar roof top systems during last three years period. The list of projects commissioned prior to Techno-Commercial Bid Opening date, 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 in support.

- 4.4 The bidder should have annual turnover of Rupees 5.00 Crore 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.
- 4.5 The bidder shall have a liquid assets and/or credit facilities of not less than Rs.10 crores (credit facility) / Letter of Credits / Solvency Certificates from Banks etc.)
- 4.6 The Bid submitted by a Consortium should comply with the following additional requirements, failing which shall result in disqualification.
- Number of members in a Consortium should be limited to three (3).
 - The Bid should contain the information required for each member of the Consortium
 - Each Consortium must nominate a lead member/prime bidder of the Consortium and must submit the Power of Attorney by all members of the Consortium in favour of the lead member/prime bidder.
 - Any Company applying as a sole Bidder cannot at the same time be member of any Consortium applying for this Project. Further, a member of a particular Consortium cannot be member of any other Consortium applying for this Project. Any Bidder who submits or participates in more than one Bid for this Project will be disqualified and will also lead to disqualification of the Consortium of which it is a member.
 - Members of the Consortium shall enter into a memorandum of understanding (MoU) specific to this Project which shall be submitted with the Tender document. The MoU shall, inter alia:
 - Convey the intent to form a Consortium, with commitments in accordance with the Tender Document, which would enter into the Project Agreement and subsequently carryout all the responsibilities as Implementing Agency in terms of the Project Agreement, in case the Project is awarded to the Consortium.
 - Clearly outline the proposed roles and responsibilities of each member at each stage.

The members of the Consortium shall be jointly liable for the execution of the Project in accordance with the terms of the Project Agreement; however NREDCAP will interact with lead member who

shall own all liability and responsibility on behalf of consortium.

The Consortium as a whole must be a sound entity both technically and financially.

- 4.7 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.

- 4.8 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 Five (5) years from the date of commissioning of the entire Sanctioned Capacity of the Project Developer.

The Bidder shall send EMD and processing fee in the form of DD/ Bank Guarantee, in original, on or before the Bid Deadline, to the address mentioned below:

The VC & Managing Director, New & Renewable Energy Development Corporation of AP Ltd., 5-8-207/2, Pishah Complex, Nampally, Hyderabad 500 001.

The Bidder shall submit his response through Bid submission to the Bid document on e-Procurement platform at www.apecurement.gov.in by following the procedure given below.

The Bidder would be required to register on the e-procurement market place www.apecurement.gov.in or <https://tender.apecurement.gov.in> and submit their Bids online. Offline bids shall not be entertained by the Authorised Representative for this Bid document.

The Bidder shall upload Prequalification Bid, Technical Bid and the Financial Bid on the website. The information pertaining to Technical Bid and the Financial Bid shall be scanned and uploaded by the Bidder as per the formats specified.

The Bidders shall upload the scanned copies of all the relevant certificates, documents etc., in support of their Qualification Requirement and other certificate/documents in the www.apecurement.gov.in website. Each format has to be duly signed and stamped by the authorised signatory of the Bidder. The scanned copy of such signed and stamped format shall be uploaded by the Bidder on the website specified.

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. The scanned copy of such signed and stamped format shall be uploaded by the Bidder on the website specified.

The Bidder shall furnish documentary evidence in support of meeting Qualification Requirements set forth in the Bid document to the satisfaction of the Authorised Representative.

5.0 Important notes and instructions to Bidders

Wherever information has been sought in specified formats, the Bidders shall fill in the details as per the prescribed formats and shall refrain from any deviations and referring to any other document for providing any information required in the prescribed format.

The Bidders shall be evaluated based on the declarations and/or information and/or documents provided by them in relevant schedules of Bid document. The information and/or documents submitted along with the Bid may be verified before signing of agreement.

If the Bidder/ Member in a Bidding Consortium conceals any material information or makes a wrong statement or misrepresents facts or makes a misleading statement in its Bid, in any manner whatsoever, Authorised Representative reserves the right to reject such Bid and/or cancel the Letter of Intent, if issued and the EMD provided up to that stage shall be encashed. Bidder shall be solely responsible for disqualification based on their declaration in Bid.

If the event specified above is discovered after the Effective Date of the agreement, consequences specified in agreement shall apply.

Bids submitted by the Bidder shall become the property of the Authorised Representative and the Authorised Representative shall have no obligation to return the same to the Bidder. However, the EMDs submitted by unsuccessful Bidders shall be returned as specified.

All pages of the Bid submitted must be initialled by the person authorised by the board, on behalf of the Bidder.

No change or supplemental information to the Bid will be accepted after the Bid Deadline. The Authorised Representative may, at its sole discretion, ask for additional information/document and/or seek clarifications from a Bidder after the Bid Deadline, inter alia, for the purposes of removal of inconsistencies or infirmities in its Bid.

However, no change in the substance of the Quoted Tariff shall be sought or permitted by the Authorised Representative. Delay in submission of additional information and/or documents sought by the Authorised Representative shall make the Bid liable for rejection

All the information should be submitted in English language only.

Bidders shall mention the name of the contact person and complete address of the Bidder in the covering letter.

Bids that are incomplete, which do not substantially meet the requirements prescribed in this Bid document, will be liable for rejection by Authorised Representative. Bids not submitted in the specified formats will be liable for rejection by Authorised Representative. Non submission and/or submission of incomplete data/ information required under the provisions of Bid document shall not be construed as waiver on the part of Authorised Representative of the obligation of the Bidder to furnish the said data/information unless the waiver is in writing.

The Qualified Bidder will be required to continue to maintain compliance with the Qualification Requirements specified in this Bid document throughout the bidding process and till the execution of the agreement. Where the Bidder is relying on affiliate/parent/ultimate parent for qualification, the Bidder shall continue to maintain this financial relationship till the execution of the agreement. Failure to comply with the aforesaid provisions shall make the Bid liable for rejection at any stage.

This Bid document includes statements, which reflect the various assumptions arrived at by the Authorised Representative in order to give a reflection of the current status in the Bid document. These assumptions may not be entirely upon by the Bidders in making their own assessments. This Bid document does not purport to contain all the information each Bidder may require and may not be appropriate for all persons. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information in this Bid document and obtain independent advice from appropriate sources.

Only Andhra Pradesh Courts shall have exclusive jurisdiction in all matters pertaining to this Bid document.

6.0 Bid evaluation methodology and selection

- A. 1st Step – Prequalification (PQ)
- B. 2nd Step – Technical evaluation
- C. 3rd Step – Financial Bid evaluation

6.1 1st Step – Prequalification (PQ)

The Bidder shall submit the scanned copies of EMD in a separate folder in e- procurement. The Original of the same shall be submitted to the Authorised Representative before the Bid Deadline.

The Bidder shall submit processing fee and original documents pertaining to EMD as specified. Bids not accompanied by EMD as per the terms of the tender document shall be summarily rejected and no further evaluation will be carried out in respect of such Bids/Bidders.

Any of the following conditions shall cause the Bid to be “Non-responsive”:

- i. Non submission of EMD in acceptable form/amount along with the bid.
- ii. Bids not received by the Bid Deadline.

6.2 2nd Step- Technical evaluation

Bids received after the Bid Deadline and Bids submitted without the EMD will be summarily rejected. Subject to above, all the formats, documents and/or information submitted by the Bidder as a part of the Technical Bid, except Financial Bid will be opened and evaluated at this stage.

The Bid submitted by the Bidder shall be scrutinized to establish technical eligibility as per Qualification Requirements of the tender.

Any of the following conditions shall cause the Bid to be “Non-responsive”:

- (i) Non submission of EMD in acceptable form/amount along with the response to tender.
- (ii) Bids not received by the Bid Deadline.
- (iii) Bid has been submitted by a Consortium and is not accompanied the Consortium Agreement.
- (iv) Any indication of the Quoted amounts in any part of Bid, other than in the Financial Bid
- (v) Subject to above, Authorised Representative will examine all the documents submitted by the Bidders and ascertain meeting of eligibility conditions prescribed in the tender. During the examination and evaluation of Bids, Authorised Representative may seek clarifications / additional documents / Rectification of errors / Discrepancies if any in the documents submitted etc. from the Bidders if required to satisfy themselves for meeting the eligibility conditions by the Bidders. Bidders shall be required to respond to any clarifications/additional documents sought by Authorised Representative within the timeline intimated by the Authorised Representative.

- (vi) It shall be the responsibility of the Bidder to ensure that all the documents have been successfully uploaded on the e procurement platform. No reminders in this case shall be sent. It will be the sole responsibility of the Bidders to remove all the discrepancies/infirmities and upload/furnish additional documents as requested by Authorised Representative, to the satisfaction of Authorised Representative. Authorised Representative shall not be responsible for rejection of any Bid on account of the above.
- (vii) Bids meeting the Technical eligibility criteria and the Qualification Requirements specified in this tender shall be declared technically responsive and the corresponding Bidder shall be declared as the Qualified Bidders.

6.3 3rd Step – Financial Bid Opening and Bid evaluation

The price bids of the bidders meeting the technical eligibility criteria will only be opened and considered for evaluation.

The selection of the successful bidder is based on the levellized cost offered by the bidder.

The lowest tender by itself will not confer any right or will not amount to accept in favour of lowest bidder, as the same is subjected to acceptance by competent authority.

Notwithstanding anything to the contrary contained herein, the Authorised Representative, has the right to reject any or all of the Bids, at any stage during the bid process, if the Quoted amounts are not aligned to the prices at which the Hospitals/Municipalities would be willing to execute solar Power Plant after opening of the Financial Bids.

6.4 Award Of L.O.I and other Processes:

The successful bidder will be awarded with a Letter of Intent (L.O.I) after obtaining the consent of the User Organisations. Within 15 days from the issue of LOI, the Bidder would be required to enter into PPA. The Agreement shall be executed between the Bidder, User Organisation and NREDCAP.

The Authorized Representative reserves the right to change the required capacity without assigning any reasons whatsoever.

After completion of selection of the Successful Bidder as per the process outlined above, Letter of Intent will be sent to the Successful Bidder accompanied by the finalized Financial Bid clearly indicating the finalized Quoted Tariff for the purposes of the Power Purchase Agreement.

The Successful Bidder shall unconditionally accept the Lol, and record on one (1) copy of the Lol, "Accepted Unconditionally", under the signature of the authorized signatory of the Successful Bidder and return such copy to the Authorized Representative within seven (7) days of issue of Lol.

6.5 Power to Remove Difficulties

If any difficulty arises in giving effect to any provision of the Bid document guidelines or interpretation of the Bid document guidelines or there is a requirement to modify the Bid document guidelines for better implementation, the matter may be considered by the Authorised Representative for this purpose and its decision will be final.

SECTION - II

PREPARATION OF TENDER

1.1 LANGUAGE OF TENDER AND MEASURE

The tender prepared by the tenderer along with all the related documents shall be in English. Unit measurements shall be metric in accordance with International System. All correspondence between the tenderer and NREDCAP shall also be in English.

1.2 EARNEST MONEY

- 1.2.1 The tenderer shall furnish earnest money of Rs. 5,00,000/- in the shape of DD in favour of, NREDCAP, payable at Hyderabad. Bank guarantee can also be

submitted in place of DD towards EMD amount from any Nationalized / scheduled bank in favor of “ VC & Managing Director, NREDCAP, Hyderabad (AP)”, as a part of the tender. The bank guarantee should be **valid upto 31st July, 2017**. Tenders without EMD shall be rejected by NREDCAP as being non-responsive. No interest shall be paid by NREDCAP on the amount of earnest money.

1.2.2 The earnest money may be forfeited:-

- a) If a Tenderer withdraws his tender during the specified period of Tender.
- b) If the successful Tenderer fails to sign the contract agreement within stipulated period with the user agency.

1.2.3 At the time of allocation of projects, the bidder shall submit Performance Guarantee of Rs. 2,00,000/- for each 100 KWp system on proportionate basis for the total capacity allotted to take up the projects under RESCO Route. This Performance Guarantee amount shall be submitted in the form of DD/ Bank guarantee from any nationalized/scheduled bank in favor of “NREDCAP, Hyderabad”. The bank guarantee should be valid for a period of one year from the date of allocation of project. No interest shall be paid by NREDCAP on the amount of security money deposit.

1.2.4 The authority reserves the right of awarding the work.

1.2.5 The earnest money of all unsuccessful bidders shall be released soon after selection of selected bidder(s).

1.2.6 The Performance Guarantee amount will be returned after successful commissioning of the project.

3.3 PERIOD OF VALIDITY OF TENDER

3.3.1 Validity of the offer should be 3 months from the proposed date of opening of the Technical bid. Tenders without this validity will be rejected. However, once empaneled the finalized tariffs shall be applicable for a period of two years within which period the project will be allotted. The levelized tariff shall be applicable for entire RESCO period i.e 25 years without any escalation.

3.3.2 In exceptional circumstances, NREDCAP may solicit the consent of the Tenderers to an extension of the period of validity of offer and also extension of bank guarantee provided towards EMD. The request and the response there of shall be made in writing.

3.4 FORMATS AND SIGNING OF TENDER

3.4.1 The tender must contain the name and places of business of the firm/person/persons participating in the tender and must be signed and sealed by the Tenderer with his usual signature. The name and designation of

all persons signing the tender document should be written below every signature. Tender by a partnership firm must be furnished with full name of all partners with a copy of partnership deed.

3.4.2 The original copy of the tender should be typed or written in indelible ink and must be signed with the legal name of the corporation/ company by the President/ Managing Director/ Secretary of the firm or a person duly authorized to bid. In case of authorized person the letter of authorization by written power-of-attorney should be enclosed with the technical bid of the tender. The person or persons signing the tender shall initial all pages of the tender document.

3.4.3 The tender shall contain no interlink actions, erasers or overwriting except as necessary to correct the errors made by the tenderer in the preparation of tender. The person or persons signing the tender shall also sign at all such corrections.

3.5 PRICE AND CURRENCIES

The tenderer shall have to submit their rates in Indian Rupees only including all latest applicable taxes & duties of Govt. of Andhra Pradesh as well as Govt. of India. Moreover, NREDCAP will not be responsible for providing Road permits. It is to be obtained by the selected bidder only and necessary Entry Tax (as admissible) will have to be borne by the selected bidder if any. The rate should be quoted on the prescribed format for Financial Bid attached to this tender document.

SECTION III

CONDITIONS OF CONTRACT

1. SCOPE OF WORK

The Scope of work for the bidder include 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.

2.0 LEVELLIZED TARIFF

- 2.1 The Levellized Tariff of 25 years 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.
- 2.2 The Levellized tariff is on lump sum turnkey basis and the bidder is responsible for the total Scope of work described above.
- 2.3 The Levellized 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.
- 2.3 The Levellized 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 shall be payable by NREDCAP. However, statutory variation of taxes and duties may be paid by the roof top owner.
- 2.4 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.

The Levellized tariff shall be in accordance with all terms, conditions, specifications and other conditions of the Contract as accepted by the NREDCAP and incorporated in the agreement.

3.0 NREDCAP SERVICE CHARGES

The successful bidder shall share the revenue on sale of solar power to the roof owner, equivalent to 20 paisa per unit to NREDCAP towards supervision and coordination charges. The charges are exclusive of Service Tax and any other taxes, levies, duties, etc. levied by the Government from time to time, which shall be paid extra as per applicable norms.

- 3.1 NREDCAP service charges are charged towards site visits, inspection; liaison, monitoring etc. Taxes and duties shall be paid extra. **The NREDCAP service charges are non-refundable and for each project the service charges have to be paid on monthly basis** based on the metered power units.

4.0 INSURANCE

- 4.1 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, if required.
- 4.2 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.

5.0 WARRANTIES AND GUARANTEES

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 warrantee 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. 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 Warrantee 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 NREDCAP will not be responsible in any way for any claims whatsoever on account of the above.

6.0 TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP

- 6.1 The design, engineering, manufacture, supply, installation, testing and performance of the equipment shall be in accordance with latest appropriate IEC/ Indian Standards as notified by the MNRE, Govt. of India. Where appropriate Indian Standards and Codes are not available, other suitable standards and codes as approved by the MNRE shall be used.
- 6.2 The specifications of the components should meet the technical specifications notified by MNRE from time to time.
- 6.3 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 SPV plant.

7.0 OPERATION & MAINTENANCE (O&M) GUIDELINES TO BE MANDATORILY FOLLOWED BY BIDDERS

- 7.1 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.
- 7.2 O&M of Solar Power Plant shall be compliant with grid requirements to achieve committed energy generation.
- 7.3 Deputation of qualified and experienced engineer/ technicians till the O&M period at project site.
- 7.4 Periodic cleaning of solar modules.
- 7.5 Periodic checks of the Modules, PCUs and BoS shall be carried out as a part of routine preventive and breakdown maintenance.
- 7.6 Immediate replacement of defective Modules, Invertors/PCUs and other equipment as and when required.
- 7.7 Supply of all spares, consumables and fixtures as required. Such stock shall be maintained for all associated equipment and materials as per manufacturer/ supplier's recommendations.
- 7.8 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 equipment must be calibrated once every 2 years from NABL accredited labs and the certificate of calibration must be kept for reference as required.
- 7.9 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.

- 7.10 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 NREDCAP positively by 1st week of every month for the previous month.
- 7.11 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.
- 7.12 For any issues related to operation & maintenance, a phone number shall be made available to the rooftop owner/ plant owner to report any problem and the same shall be resolved within 72 hours. If not attended within such stipulated time, a complaint may be raised to NREDCAP, pursuant to which, a penalty of Rs. 10,000 for full month or more shall be imposed for a system capacity upto 100 KWp and Rs.10,000 for each subsequent 100 KWp capacity.
- 7.13 If any jobs covered in O&M Scope as per this tender document are not carried out by the contractor/ Bidders during the O&M period, the authorised official shall take appropriate action as deemed fit. NREDCAP 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.

8.0 **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). NREDCAP/ User Agency could facilitate connectivity; however, the entire responsibility lies with bidder only.

9.0 **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 for release of

eligible subsidy. Minimum CUF of 15% should be maintained for a period of 5 years. The bidder should send the periodic plant output details to NREDCAP/User Agency for ensuring the CUF. The PR will be measured at Inverter output level during peak radiation conditions.

10.0 PROGRESS REPORT

The bidder shall submit the progress report monthly to NREDCAP in Prescribed Performa. NREDCAP will have the right to depute it's representatives to ascertain the progress of contract at the premises of works of the bidder.

11.0 Submission of O&M Report (OMR)

The bidder shall submit the Monthly O&M Report mandatorily to NREDCAP/User Agency as per the prescribed formats. 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 V.C & Managing Director, NREDCAP shall be final in this regard.

13.0 PROJECT INSPECTION

All Projects progress will be monitored by NREDCAP 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 NREDCAP or any agency/ experts designated / authorised by NREDCAP from time to time. NREDCAP shall depute a technical person(s) from its list of empanelled experts/ agencies from time to time for inspection, Third party verification and monitoring of system installed to oversee, the implementation as per required standards and also visit the manufacturer's facilities to check the quality of products as well as to assess their technical capabilities as and when required shall be undertaken. The cost of Inspection shall be borne by Vendor only. The projects shall be inspected at any time during commissioning or after the completion of the project(s)

14.0 CANCELLATION OF SUBSIDY

NREDCAP 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.

15.0 APPLICABLE LAW

The Contract shall be interpreted in accordance with the laws of the Union of India. In case of disputes, the decision of NREDCAP is final and binding.

16.0 LANGUAGE

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 NREDCAP and the bidder shall be in English language.

17.0 OTHER CONDITIONS

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 NREDCAP in writing.
2. The Successful bidder or its subcontractors shall not display the photographs of the work and not take advantage through publicity of the work without written permission of NREDCAP and owner of the Rooftop.
3. The Successful bidder or its subcontractors shall not make any other use of any of the documents or information of this contract, except for the purposes of performing the contract.
4. NREDCAP will not be bound by any Power of Attorney granted/ issued by the Successful bidder or its subcontractors or by any change in the composition of the firm made during or subsequent to the execution of the contract. However, recognition to such Power of Attorney and change (if any) may be given by NREDCAP after obtaining proper legal advice, the cost of which will be chargeable to the Successful bidder concerned.

16.SUCCESSORS AND ASSIGNEES:

In case the NREDCAP or Successful bidder or User Agency 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.

17.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.

18.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.

19. 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 NREDCAP & Successful bidder hereto, any rights and / or remedies herein.

20. SUBSIDY DISBURSEMENT:

NREDCAP will provide fixed subsidy @ Rs 12.00 per Wp of sanctioned capacity.

The subsidy shall be disbursed as follows.

Subsidy as calculated above will be released as follows:

- a) 70% subsidy shall be disbursed after Successful Commissioning and after obtaining the NOC & grid synchronisation certificate from DISCOM
- b) 20 % eligible subsidy will be released after completion of three months successful operation of the system and
- c) balance 10% subsidy after completion of five years of successful O&M.

NREDCAP may consider to release subsidy on case to case basis depending on the actions taken by the Successful Bidder and subject to meeting the following conditions:

- a) The rooftop SPV power plant should be completed as per the Scope of Tender.
- b) The rooftop SPV power plant must get CEIG inspection certificate.
- c) Intimation to the concerned DISCOM: All the bidders shall intimate the concerned DISCOMS regarding implementation of grid connected roof top solar PV projects as per the prescribed format and submit the consent of DISCOM to NREDCAP for the purpose of release of Subsidy.
- d) The sanction and release of subsidy are subject to sanction of same by MNRE/State Government and availability of funds.

21. OTHER CONDITIONS

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. NREDCAP shall not have any responsibility in this regard.

22. 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 Department of Govt of India by the bidder. NREDCAP in no case will be responsible for providing any tax exemptions to the bidder.

23. REQUIREMENT OF APPROVALS ON MAKES OF THE COMPONENTS:

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 Tender.

24. LIQUIDATED DAMAGES (LD) FOR DELAY IN PROJECT IMPLEMENTATION

NREDCAP 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 Tender document. The Bidder shall Design, Engineering, Manufacture, Supply, storage, civil work, erection, testing & commissioning of each project within times lines specified in the tender from the date of issue of Allocation letter.

If the bidder fails to commission the sanctioned project within specified time, Liquidated Damages on per day basis calculated for the Performance Security.

Ex: If a project of 100 KWp is delayed by 30 days then the Liquidated Damages will be levied as given below.

Liquidated Damages = ((Performance Security)/120 days)*delayed days = (2,00,000 /120)*30 = Rs.50,000.

25. DOCUMENT SUBMISSION FOR PROJECT COMPLETION

The following documents will be deemed to form the completion documents:

- a. Checklist for inspection of Roof top SPV power plants as per NREDCAP /MNRE formats.
- b. DISCOM consent letter
- c. DISCOM synchronisation letter
- d. CEIG approval
- e. Project completion/satisfaction certificate from roof top owner.

26. DEDUCTIONS FROM THE CONTRACT PRICE:

All costs, damages or expenses which NREDCAP/User Agency 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 NREDCAP. All such claims shall be billed by the NREDCAP to the Contractor and if not paid by the Successful bidder within the 15 days period, the NREDCAP 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 NREDCAP of such claims.

27. CORRUPT OR FRAUDULENT PRACTICES

The NREDCAP requires that Successful Bidders/ Contractors should follow the highest standard of ethics during the execution of contract. In pursuance of this policy, the NREDCAP defines, for the purposes of this provision, the terms set forth as follows :

“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

“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 NREDCAP/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 NREDCAP of the benefits of free and open competition;

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/ NREDCAP schemes.

28. DEBARRED FROM PARTICIPATING IN NREDCAP'S ROOF TOP TENDER

NREDCAP 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 tender, such Bidders may be debarred from participating in NREDCAP's any future tender for a period as decided by the competent authority of NREDCAP.

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/despatch 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 NREDCAP'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-VI TECHNICAL SPECIFICATIONS

The proposed projects shall be commissioned as per the technical specifications given below. Any shortcomings will lead to cancelation of subsidy in full or part as decided by NREDCAP and the RESCO agreement will be terminated. Competent Authority's decision will be final and binding on the bidder.

1. DEFINITION

A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables, Junction boxes, Distribution boxes and switches. PV Array is mounted on a suitable structure. Grid tied SPV 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 SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable. Solar PV system shall consist of following equipment/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 lightning protections, IR/UV protected PVC Cables, pipes and accessories

2. SOLAR PHOTOVOLTAIC MODULES:

- 2.1. The PV modules used should be made in India.
- 2.2. 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 **500Wp** and above wattage. Module capacity less than minimum **500** watts shall not be accepted
 - c) Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.

- d) PV modules must be tested and approved by one of the IEC authorized test centres.
- e) The module frame shall be made of corrosion resistant materials, preferably having anodized aluminium.
- f) The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid. NREDCAP/owners shall allow only minor changes at the time of execution.
- g) 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 $\pm 3\%$.
 - ii. The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
 - iii. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.
 - iv. I-V curves at STC should be provided by bidder.

3. 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).

- 3.1. Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each modules. 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

4. WARRANTIES:

a) Material Warranty:

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

b) Performance Warranty:

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.

5. 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 insolation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.
- b. The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed (like Delhi-wind speed of 150 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 NREDCAP. 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 electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts.
- e. **Aluminium structures also can be used which can withstand the wind speed**

of respective wind zone. Necessary protection towards rusting need to be provided either by coating or anodization.

- f. Aluminium frames should be avoided for installations in coastal areas.
- g. The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels
- h. 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.
- i. The total load of the structure (when installed with PV modules) on the terrace should be less than 60 kg/m².
- j. The minimum clearance of the structure from the roof level should be 300 mm.

6. 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 Aluminium /cast aluminium alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JB's shall be such that input & output termination can be made through suitable cable glands.
- b) Copper bus bars/terminal blocks housed in the junction box with suitable termination threads conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single / double compression cable glands. Provision of earthings. It should be placed at 5 feet height or above for ease of accessibility.
- c) Each Junction Box shall have High quality Suitable capacity Metal Oxide Varistors (MOVs) / SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.
- d) Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification.
- e) All fuses shall have DIN rail mountable fuse holders and shall be housed in thermoplastic IP 65 enclosures with transparent covers.

7. DC DISTRIBUTION BOARD

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

8. 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
- e. The panels shall be designed for minimum expected ambient temperature of 45 degree Celsius, 80 percent humidity and dusty weather.

- f. All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.
- g. Should conform to Indian Electricity Act and rules (till last amendment).
- h. All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions

| | |
|---|----------|
| Variation in supply | +/- 10 % |
| Voltage Variation in supply frequency | +/- 3 Hz |

9. 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.

10. PCU/ Inverter:

As SPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the "Power Conditioning Unit (PCU)". In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to the power conditioning unit/inverter 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, 50 Hz (In case single phase inverters are offered, suitable arrangement for balancing the phases must be made.) |
| Output frequency | 50 Hz |
| Grid Frequency Synchronization | + 3 Hz or more |

| | |
|-------|--|
| range | |
|-------|--|

| | |
|--------------------------------|---|
| 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) 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 centres/ NABL/ BIS/ IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

11. INTEGRATION OF PV POWER WITH GRID:

The output power from SPV would be fed to the inverters which converts DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization. In case of grid failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid. Once the 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.

12. 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 / NREDCAP 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.

13. TRANSFORMER "IF REQUIRED" & METERING:

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

14. POWER CONSUMPTION:

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 NREDCAP or MNRE. Decisions of appropriate authority like DISCOM, state regulator may be followed.

15. PROTECTIONS

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

16. LIGHTNING PROTECTION

The SPV power plants shall be provided with lightning & overvoltage protection. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc. The entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be provided as per IEC 62305 standard. The protection against induced high-voltages shall be provided by the use of metal oxide varistors (MOVs) and suitable earthing such that induced transients find an alternate route to earth.

17. SURGE PROTECTION

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

18. EARTHING PROTECTION

- a) Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lighting arrester/masts should also be earthed inside the array field. Earth Resistance shall be tested in presence of the representative of Department/NREDCAP 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.

19. 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.

20. CABLES

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

- a. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
- b. Temp. Range: -10°C to $+80^{\circ}\text{C}$.
- c. Voltage rating 660/1000V
- d. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
- e. Flexible
- f. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum (2%)
- g. 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.

- h. 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.
- i. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use. Outer sheath of cables shall be electron beam cross-linked XLPO type and black in colour.
- j. The DC cables from the SPV module array shall run through a UV-stabilized PVC conduit pipe of adequate diameter with a minimum wall thickness of 1.5mm.
- k. Cables and wires used for the interconnection of solar PV modules shall be provided with solar PV connectors (MC4) and couplers
- l. 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 mm² copper; the minimum AC cable
- m. size shall be 4.0 mm² copper. In three phase systems, the size of the neutral wire size shall be equal to the size of the phase wires.
- n. 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.
- o. Cable Jacket should also be electron beam cross-linked XLPO, flame retardant, UV resistant and black in colour.
- p. 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.
- q. 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.
- r. Multi Strand, Annealed high conductivity copper conductor PVC type 'A' pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armoured cable for underground laying. All cable trays including covers to be provided. All cables conform to latest
- s. 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.
- t. The total voltage drop on the cable segments from the solar PV modules to the solar grid inverter shall not exceed 2.0%.

- u. The total voltage drop on the cable segments from the solar grid inverter to the building distribution board shall not exceed 2.0%.

21. 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 NREDCAP/ owner.
- 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.

22. DANGER BOARDS AND SIGNAGES

Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Three signage's 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 NREDCAP/ owner.

23. FIRE EXTINGUISHERS:

The fire fighting 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.

24. 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 NREDCAP/owners before progressing with the installation work

25. 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 NREDCAP/Owner for approval.
- b) NREDCAP 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 submit three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.

26. 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

27. 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 upto 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.

28. 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.

29. DISPLAY BOARD

The bidder has to display a board at the project site (above 50kWp) mentioning the following:

- a. Plant Name, Capacity, Location, Type of Renewable Energy plant (Like solar wind etc.), Date of commissioning, details of tie-up with transmission and distribution companies, Power generation and Export FY wise.
- b. Financial Assistance details from NREDCAP/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 Engineer-in-charge before site inspection.

TECHNICAL BID

1. GENERAL PARTICULARS OF TENDERER

| SL. | PARTICULARS | TO BE FUNISHED BY THE TENDERER |
|-----|---|--------------------------------|
| 1 | Name of Tenderer/Firm | |
| 2 | Postal Address | |
| 3 | E-mail address for communication | |
| 4 | Telephone/ Fax No. | |
| 5 | Name, designation, address, contact number and Email of the representative of the tenderer to whom all references shall be made. | |
| 6 | Nature of the firm (Individual/ Partnership/Consortium/ Pvt. Ltd /Public Ltd. Co. /Public Sector, etc.) Attach attested copy of Registration & Partnership deed/ Memorandum of Association | |
| 7 | Amount and particulars of the Earnest Money Deposited. | |
| 8 | Annual Turnover for last three years i.e 2013 -2016 (Attach balance sheets and certificate from from CA in this regard) | |
| 9 | Name and address of the Indian/foreign collaboration if any. | |
| 10 | PAN NO (Copy of certificate to be enclosed) | |
| 11 | Service Tax Registration No., VAT/TIN/ GRN No. CST No. (copies of certificates to be attached) | |

| | | |
|----|--|--|
| 12 | Has the Tenderer/firm ever been debarred by any institution for undertaking any work? | |
| 13 | Any other information attached by the Tenderer (Details of Annexure / page no. where its enclosed) | |
| 14 | Does Tenderer have any relative Working in NREDCAP? If yes state the Name and designation. | |

2. DETAILS ABOUT THE COMPONENTS TO BE USED

| S. No | Description | Name of Manufacturer(s) | Manufacturing Plant address |
|-------|------------------------|-------------------------|-----------------------------|
| 1 | Solar PV Modules | | |
| 2 | Grid Tied Inverter/PCU | | |

3. DETAILS OF EXPERIENCE

Please fill in information about grid Solar PV Systems installed in the last three years.

| Sl. No | Description | FY 2013-14 | FY 2014-15 | FY 2015-16 |
|--------|---------------------------------------|------------|------------|------------|
| 1 | Grid Connected Solar PV Plants in kWp | | | |
| 2 | Total Aggregate Project Cost in Rs. | | | |

Mandatory Documentary Evidences to be submitted:

- A. Work Order Copies
- B. MNRE/SNA Project Sanction Letter (either through SNA/SECI/Channel Partner)
- C. Project Completion Report/Certificate clearly showing the date of commissioning
- D. CEIG Clearance Certificates (for Projects > 10 kWp)
- E. NREDCAP Empanelment letter for Grid connected Solar power projects
- F. MNRE Channel partner letter having validity.

4. DETAILS ABOUT THE BLACKLISTING, IF ANY

Information on litigation history in which Bidder is involved.

1) Whether black listed/ Debarred/Suspended from execution of work.

2) Other litigations. If any including Court litigations Arbitrations etc.

| Department and concerned officer | Other party (ies) | Case of dispute. | Amount involved. | Remarks showing present status. |
|----------------------------------|-------------------|------------------|------------------|---------------------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | | | |

Signature of the authorised person:

Name of the authorised person:

Designation:

Name and Address of Bidder

Stamp of bidder

DECLARATION

(on Rs.100/- non-judicial stamp paper)

I / WE have gone through carefully all the Tender conditions and solemnly declare that I / we will abide by any penal action such as disqualification or black listing or determination of contract or any other action deemed fit, taken by, the Department against us, if it is found that the statements, documents, certificates produced by us are false / fabricated.

I / WE hereby declare that, I / we have not been blacklisted / debarred / Suspended / demoted in any Government Department in any State due to any reasons.

Signature of the Tenderer

DECLARATION BY THE TENDERER

I/We

(Hereinafter referred to as Tenderer) being desirous of tendering for the work, under this tender and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications etc. as mentioned in the tender document do hereby declare that

1. The tenderer is fully aware of all the requirements of the tender document and agrees with all provisions of the tender document and accepts all risks, responsibilities and obligations directly or indirectly connected with the performance of the tender.
2. The Tenderer is fully aware of all the relevant information for proper execution of the proposed work, with respect to the proposed place of works/ site, its local environment, approach road and connectivity etc. and is well acquainted with actual and other prevailing working conditions, availability of required materials and labour etc. at site.
3. The Tenderer is capable of executing and completing the work as required in the tender and is financially solvent and sound to execute the tendered work. The tenderer is sufficiently experienced and competent to perform the contract to the satisfaction of NREDCAP. The Tenderer gives the assurance to execute the tendered work as per specifications, terms and conditions of the tender on award of work.
4. The Tenderer has no collusion with other Tenderers, any employee of NREDCAP or with any other person or firm in the preparation of the tender.
5. The Tenderer has not been influenced by any statement or promises by NREDCAP or any of its employees but only by the tender document.
6. The Tenderer is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.
7. The Tenderer has never been debarred from similar type of work by any Government Undertaking /Department. (An undertaking on Non-Judicial Stamp paper worth of Rs. 100/- in this regard shall be submitted)
8. The Tenderer accepts that the earnest money / Performance Guarantee may be absolutely forfeited by NREDCAP if the selected bidder fails to sign the contract or to undertake the work within stipulated time.
9. This offer shall remain valid for acceptance for 3 (Three) months from the proposed date of opening of Tender.
10. All the information and the statements submitted with the tender are true and correct to the best of my knowledge and belief.

Signature of Tenderer

CHECKLIST TO ACOMPANY THE TENDER

| S. No | Description | Submitted | Page No. |
|-------|---|-----------------|----------|
| 1 | 2 | 3 | 4 |
| 1 | Copy of Contractors valid Registration certificate with NREDCAP/Approved letter of MNRE as Channel Partner | Uploaded online | |
| 2 | Demand draft toward requisite Earnest Money Deposit (issued by any Nationalised/Scheduled bank) or exemption document. | Uploaded online | |
| 3 | Crossed demand draft towards Cost of tender document | Uploaded online | |
| 4 | Copy of PAN card | Uploaded online | |
| 5 | Copy of latest Income Tax Clearance returns submitted along with proof of receipt (Latest SARAL form). | Uploaded online | |
| 6 | Copies of VAT Registration Certificate. | Uploaded online | |
| 7 | Latest VAT/ Sales Tax clearance certificate. | Uploaded online | |
| 8 | In case of Consortium submit Memorandum of Understanding (MoU) on a non-judicial stamp paper of Rs.100/- duly attested by a notary public. | Uploaded online | |
| 9 | Proof of liquid assests and / or credit facility of not less than Rs.10.00 Crores (Credit facility / letter of credits/solvency certificates from banks etc.,) | Uploaded online | |
| 10 | Availability of local service centres/ technical personnel | Uploaded online | |
| 11 | Information on litigation history in which Bidder is involved. | Uploaded online | |

| | | | |
|----|---|-----------------|--|
| 12 | Any other documents/certificate as specified in tender conditions | Uploaded online | |
| 13 | Experience Certificate | Uploaded online | |
| 14 | Declarations as per the formats | Uploaded online | |
| 15 | Any other information the applicant wants to furnish | Uploaded online | |

Note:-

- a. In the case of consortium, the details of the all the group members shall be furnished.
- b. All the pages of the document, enclosures shall be signed by the Bidder.

FINANCIAL BID

Design, Supply, Installation, Commissioning, Maintenance and Operation of Grid Connected Solar Rooftop Systems at various locations in Vizianagaram district of Andhra Pradesh State under RESCO Route

Tender No: **NREDCAP/OSD/NM/RESCO/VZM/2017, DATED 20.03.2017**

| Project Capacity | Levellised cost for supply of power for 25 years from Grid Connected Rooftop Solar PV Power Plant as per MNRE/NREDCAP/TRANSCO/DISCOM Specifications under Net Metering Scheme under RESCO Route (Rs./Kwh) | |
|------------------|---|----------|
| | In Figures | In Words |
| 2400 KWp | | |

Note:

1. The bidder has to quote unit rate only and will be uniform for the entire 25 years period.
2. Above rate is in accordance with specifications & various terms & conditions mentioned in the tender document.
3. NREDCAP will extend subsidy of Rs.12 per watt after commissioning systems.
4. Out of the quoted tariff, Rs.0.20 paisa per unit shall be paid to NREDCAP as per the tender conditions.
5. The rates are inclusive of all taxes and duties of Govt. of AP as well Govt. of India prevailing from time to time.
6. Amount shall be quoted in INR / kWh upto two decimal places.
7. In the event of any discrepancy between the values entered in figures and in words, the values entered in words shall be considered.

Authorised Signature:

Name:

Designation:
Name & Address of the
Company/Consortium

FORMAT FOR E.M.D

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

Ref._____

Bank Guarantee No._____

Date:_____

In consideration of the ----[Insert name of the Bidder] (hereinafter referred to as 'Bidder') submitting the response to Tender inter alia for selection of the Project **under RESCO route** of the capacity of ____ KWp in the A.P. State (as indicated in Tender) in response to the Tender No._____dated ____ issued by New and Renewable Energy Development Corporation of A.P. Limited (hereinafter referred to as NREDCAP) and NREDCAP considering such response to the Tender of*[insert the name of the Bidder]* as per the terms of the Tender, the _____ *[insert name & address of bank]* hereby agrees unequivocally, irrevocably and unconditionally to pay to NREDCAP at *[Insert Name of the Place from the address of NREDCAP]* forthwith on demand in writing from NREDCAP or any Officer authorized by it in this behalf, any amount upto and not exceeding Rupees ----- 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 condition of this Tender]* 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 _____ . NREDCAP 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 NREDCAP 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 NREDCAP, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to NREDCAP.

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 NREDCAP to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against NREDCAP in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at Delhi 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 NREDCAP 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 NREDCAP 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 condition of this Tender*] 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 NREDCAP 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 submitted for the Allocated capacity at the time of Project allocation separately}

(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] (hereinafter referred to as selected Solar Power Developer') submitting the response to Tender inter alia for selection of the Project **under RESCO Route** of the capacity of ____ kWp / MWp, at

.....[Insert location details] under Roof Top scheme in response to the Tender no..... dated..... issued by New and Renewable Energy Development Corporation of A.P. Limited (hereinafter referred to as NREDCAP) and NREDCAP considering such response to the Tender 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 Tender 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 Tender, the

_____ [insert name & address of bank] hereby agrees unequivocally, irrevocably and unconditionally to pay to NREDCAP at [Insert Name of the Place from the address of the NREDCAP] forthwith on demand in writing from NREDCAP or any Officer authorised by it in this behalf, any amount upto 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..... NREDCAP shall be entitled to invoke this Guarantee till

The Guarantor Bank hereby agrees and acknowledges that NREDCAP 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 NREDCAP, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to NREDCAP.

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 NREDCAP to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against NREDCAP in respect of any payment made hereunder

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at Delhi 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 NREDCAP 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 NREDCAP 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 NREDCAP 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 scheduled Bank

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 the State___ in response to the Tender No

dated issued by New and Renewable Energy Development Corporation of A.P. Limited (NREDCAP), 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 NREDCAP may require us to submit. The aforesaid Attorney is further authorized for making representations to the NREDCAP and providing information / responses to NREDCAP representing us in all matters before NREDCAP, and generally dealing with NREDCAP 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 executant 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 executant)

(Name, designation and address of the executant)

.....

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 executant(s) and the same should be under common seal of the executant 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 executant(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 executant(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 executant(s).

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 _____ 2017 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 New and Renewable Energy Development Corporation of A.P. Limited (hereinafter called NREDCAP), a Company incorporated under the Company's Act, 1956 has invited response to Tender No. ____ dated ____ for design, manufacture, supply, erection, testing and commissioning including warranty, operation & maintenance of Roof Top Solar PV power system under RESCO Route.

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

IN WITNESS WHEREOF, the Members have, through their authorised 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:

OPERATION AND MAINTENANCE GUIDELINES OF GRID CONNECTED PV PLANTS

1. 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.
3. Periodic checks of the Modules, PCUs and BoS shall be carried out as a part of routine preventive and breakdown maintenance.
4. Immediate replacement of defective Modules, Invertors/PCUs and other equipment as and when required.
5. 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.
6. 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 equipment must be calibrated once every 2 years from NABL accredited labs and the certificate of calibration must be kept for reference as required.
7. 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.
8. If any jobs covered in O&M Scope as per Tender are not carried out by the contractor/ Bidders during the O&M period, the NREDCAP/User Agency shall take appropriate action as deemed fit.

9. NREDCAP/User Agency 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:

| Solar PV Modules/Panels | |
|-------------------------------------|---|
| 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 ₃) 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 | Safety of power converters for use in photovoltaic power systems – Part 1: General requirements, and Safety of power converters |

| | |
|--|---|
| | <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) | Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency (10%, 25%, 50%, 75% & 90-100% Loading Conditions) |
| 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) | Utility-interconnected Photovoltaic Inverters - Test Procedure of Islanding Prevention Measures |
| IEC 60255-27 | Measuring relays and protection equipment – Part 27: Product safety requirements |
| 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 |

Fuses

| | |
|--|--|
| IS/IEC 60947 (Part 1, 2 & 3), EN 50521 | General safety requirements for connectors, switches, circuit breakers (AC/DC): a) Low-voltage Switchgear and Control-gear, Part 1: General Rules b) Low-Voltage Switchgear and Control-gear, Part 2: Circuit Breakers c) Low-voltage switchgear and Control-gear, Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units d) EN 50521: Connectors for photovoltaic systems – Safety requirements and tests |
| IEC 60269-6 | Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems |
| Surge Arrestors | |
| 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 |
| Cables | |
| IEC 60227/IS 694, IEC 60502/IS 1554 | General test and measuring method for PVC (Polyvinyl chloride) insulated cables (for working voltages up to and |

| | |
|---|--|
| (Part 1 & 2)/ IEC69947 | 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 |
| Earthing /Lightning | |
| 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 |
| Junction Boxes | |
| 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 |
| Energy Meter | |
| 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) |
| Solar PV Roof Mounting Structure | |
| 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
TUV Rheinland
UL