Request for Selection of Bidder (RFS) for
Design, Engineering, Supply, Installation, Testing,
Commissioning with 5 Year CMC for Aggregate 1.5 MW
Grid Interactive Solar PV Project at e-City, at Raviryala(V), Maheshwaram(M),
R.R. District, Telangana.

RFS No:01/CE/TSIIC/2020-21 Dt:22.07.2020

Issued by

TELANGANA STATE INDUSTRIAL INFRASTRUCTURE CORPORATION LTD
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SECTION - 1

Brief Information on Project and Activities

1.1 Introduction:
Telangana State Industrial Infrastructure Corporation Ltd (hereinafter called “TSIIC”), invites sealed Invitation of Bid for Design, Engineering, Supply, Installation, Testing, Commissioning and Comprehensive Maintenance Contract (CMC) for a period of 5 Years for an aggregate capacity of 1.5 MW Net Metering Rooftop Solar PV Grid Interactive Systems.

The tender document is being intended for setting up of a grid connected solar power plants at e-City, at Raviryala(V), Maheshwaram(M), R.R. District, Telangana. State. This project is intended to set up for meeting the captive power requirement of the EMC buildings electricity requirements.

1.2 About Project Location:
The project’s locations along with the estimated capacity have been listed in the table below:

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Project Location</th>
<th>Project Capacity (kWp)</th>
<th>SPV Plant Proposed Location Coordinates</th>
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<tr>
<td>1</td>
<td>e-city, Raviryala(V), Maheshwaram(M), R.R Dist.</td>
<td>1500kWp</td>
<td>Latitude:17.204N, Longitude:78.48398E.</td>
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SECTION - 2
Instructions to Bidders

2.1 Notice Inviting Bid
Telangana State Industrial Infrastructure Corporation Ltd (hereinafter called “TSIIC”), invites sealed Invitation of Bid for Design, Engineering, Supply, Installation, Testing, Commissioning and Comprehensive Maintenance Contract (CMC) with for a period of 5 Years for an aggregate capacity of 1.5 MW Net Metering Rooftop Solar PV Grid Interactive Systems at e-City, at Raviryala(V), Maheshwaram(M), R.R. District, Telangana. Brief details are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Tender Reference No.</th>
<th>RFS No.01/CE/TSIIC/2020-21 Dt: 22.07.2020</th>
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<td>2</td>
<td>Tender can be downloaded from</td>
<td><a href="https://tsiic.telangana.gov.in">https://tsiic.telangana.gov.in</a></td>
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<td>3</td>
<td>Estimated Cost</td>
<td>Rs.6.75Cr(Rs. Six crore seventy-five lakhs only) Including GST.</td>
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<td>4</td>
<td>Tender processing fee</td>
<td>Rs. 11,800/- (i.e. Rs. Eleven Thousand Eight Hundred Only) including 18% GST through DD/Online Payment only (Non Refundable &amp; Non-transferable)</td>
</tr>
<tr>
<td>5</td>
<td>Earnest Money Deposit (EMD)</td>
<td>Rs.6.75lakhs (Rs. Six Lakhs Seventy-five thousand only) through BG/Online Payment.</td>
</tr>
<tr>
<td>6</td>
<td>Last date and time of submission of Bid</td>
<td>07.08.2020 up to 15.00 hrs</td>
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<tr>
<td>7</td>
<td>Date and Time of opening of Technical Bids.</td>
<td>07.08.2020 15.15 hrs</td>
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1. As a part of this effort, TSIIC invites solar project developers, solar manufacturers, solar technology providers, Solar PV system integrators, solar entrepreneurs, EPC Contractors, to participate in the BIDs. Interested bidders are invited to submit their online bid proposal along with all supporting documents complete in all aspect on or before 07.08.2020 up to 15.00 hrs.
2. Bid documents which include Eligibility criteria, “Technical Specifications”, various conditions of contract, formats, etc., can be downloaded from https://tsiic.telangana.gov.in website. Any amendment (s)/corrigendum/clarifications with respect to this Bid shall be uploaded on https://tsiic.telangana.gov.in

3. The Bidder should regularly follow up for any Amendment/Corrigendum/Clarification on the above website.

4. The selection of successful bidder will be based on technical & financial bidding.

5. Chief Engineer, TSIIC reserves all rights to accept, cancel the BIDs or reject any or all bidders or change the conditions mentioned in BID documents at any stage or take any decision regarding implementation of these projects.

6. All the documents submitted in the tender should be original and true, in case, duplicate and fraudulent documents are submitted by the bidder, Chief Engineer, TSIIC reserves all rights to reject the bid and take appropriate action against the bidder.

2.2 Clarifications and Amendments in the Bid Document

Project developers have to submit their queries on or before 03.08.2020 upto 15.00 hrs through email only to ce-iic@telangana.gov.in

Seeking verbal clarifications and information from TSIIC or its employees or its representatives shall not be in any way entertained.

Amendment in the BID Document: At any time before the deadline for submission of Bids, the TSIIC may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the BID document by issuing clarification(s) and/or amendment(s). The clarification(s) / amendment(s) (if any) will be notified on website www.https://tsiic.telangana.gov.in. only.

Chief Engineer, TSIIC reserves all rights to accept, cancel the Tender or reject any or all bidders or change the conditions mentioned in tender documents at any stage or take any decision regarding implementation of this project.

TSIIC will not bear any responsibility or liability arising out of non-receipt of the information regarding amendments in time or otherwise. Bidders must check the website for any such amendment before submitting their Bid. All the notices related
to this Bid which are required to be publicized shall be uploaded on above mentioned website.

2.3 Scope of Work:

The successful bidder would be required to commission a solar power plant and undertake CMC over a period of 5 years. The selected bidder has to undertake the following activities as part of the scope of work during various stages of project execution:

- Design, supply, installation, commissioning, and Operation & Maintenance for a period of 5 years from the date of its commissioning at the project location given under clause 1.2 above.

  **Selected Bidder has to set up and commission solar plant on or before 180 days from date of issue of the Work order.** If the Bidder fails to commission the sanctioned project within specified time, penalty as mentioned in the Liquidated Damage clause would be deducted.

- Free replacement of defective components of systems within Comprehensive Maintenance Contract period (CMC) of 5 years after commissioning for the efficient running of the Grid-connected Solar Photovoltaic Power Plants. Cost of instrument, installation & monthly/yearly charges for the first five years/under CMC period shall be born by Developer. After five years, the instrument shall be handed over to beneficiary/ TSIIC.

- Bidder shall submit the all Bill of Materials & Drawings duly certified by the MNRE Empanelled Chartered Engineer for Solar Projects.

- Selected bidder shall give the generation guarantee for electricity generation from the solar plant at a minimum of 15lakh Units/1MW per year from commissioning of the project at consumption side energy meter in utility substation irrespective of any disintegration of efficiency of the entire project. For Calculating the annual guaranteed generation grid down time should be considered to arrive at actual guaranty for complete one year. The commitment of guaranteed generation will rest up to the completion of Comprehensive Operation and maintenance period of the project. Any shortfall in the generation below 15lakh units (from 1 MW) shall recovered from
the developer at the prevailing TSSPDCL (TSDISCOMS) tariff for that consumer. Monitoring of the compliance shall be done at the end of the year un-till the completion of the CMC period.

- The developer shall provide State of the art web based solar plant generation monitoring and data logging system shall be provided along with the solar power plant. TSIIC and plant operators/User should be able to monitor all plant efficiency related parameters remotely. Cost of instrument, installation & monthly/yearly charges for first five years under CMC period shall be born by Developer. After five years instrument shall be handed over to beneficiary/ TSIIC.

- Seeking permission for net-metering and grid connectivity of the solar PV system would be the responsibility of the Bidder in accordance with the prevailing guidelines of TSSPDCL. TSIIC shall facilitate and provide required information & necessary documents for filling the application for net-metering application; however, the entire responsibility of getting the Solar Rooftop Net-metering permission from TSSPDCL lies with Bidder only with the help of concern TSIIC Dept. The bidder shall have to consider all the cost of net metering, possible modification requirements in incomer/ suggestions of the electrical inspectorate / TSSPDCL/TSRANSCO requirements to avail net metering for the TSIIC Dept.

- Bidder shall bear whole project costs such as cost of engineering, procurement, testing & commissioning and maintenance of the solar power plant including GST for the period of 5 years from the date of its commissioning.

- Bidder should obtain statutory permissions from statutory bodies wherever required for the execution of works. All approvals including approvals/consents required under regulation & local regulations, building codes and approvals required for distribution of utility etc. relating to installation and operation of the system and generation and supply of solar power from the project are to be obtained by the Bidder.

- All EPC work including the transportation of material and machinery to and from the project site will be the responsibility of the Bidder. Bidder shall bear all
risks of loss and damage to any part of the solar power plant due to conditions not on account of TSIIC and should comply with the standard safety guidelines for all the activities at the site.

- All the water needed during installation of the solar power plant, cleaning, as well as pre and post-installation, shall be taken care of by the bidder for the entire contract period. The bidder should also install water pipeline, the water tank and pressurized water spray for cleaning the modules. The beneficiary will provide the water required for cleaning the solar modules at free of cost.

- Necessary underground cabling interconnection at LT distribution panel shall be done as per IE rules.

- Bidder will follow all electrical safety norms in the installation of the solar plant and during operation and maintenance of the plant.

- Bidder shall take necessary permission from Chief Electricity Inspector for setting up the plant/commissioning of the plant.

- Bidder shall take permission from concerned authorities (Local/state/central) if required under any rules and regulations.

- The developer/bidder shall take necessary action for earthwork of site grading, tree cutting, filling, levelling & compacting of land as per the project requirement.

- Any damage caused to any assets of proposed buildings/site due to construction activities of the solar plant thereof will be the responsibility of the Bidder and it will be required to fix the damage or compensate an equivalent amount.

- Bidder shall comply with the Environmental, Occupational Health & Safety and Security requirements and has to ensure that adequate measures have been taken from their end for the safe working of their men and machines.

- TSIIC and the work will be inspected for quality at any time during commissioning or after the completion of the project by TSIIC officials.

- TSIIC may depute a technical person(s) from its list of employee for inspection, third party verification, monitoring of system installed to oversee, the implementation as per required standards and also to visit the manufacturers.
facilities to check the quality of products as well as to visit the system integrators to assess their technical capabilities.

- Bidder shall responsible for conducting the Third-Party Inspection after commissioning of the plant by the MNRE Empanelled Chartered Engineer for Solar Projects.
- Bidder shall quote for the complete system. Partial bids or bids which do not cover the entire scope of the project will be treated as incomplete and not responsive to the terms and conditions of tender are liable to be rejected.
- Pre-bid meeting shall be the part of Tender document. Decisions’ taken in the pre-bid meeting will be applicable to the tender. Minutes of the pre-bid meeting will be uploaded on the website. Accordingly, bidders have to quote the price and submit the necessary documents with the tender.

2.4 Qualification of the Bidder

2.4.1 General Eligibility Criteria: The Bidder should be a legal entity duly incorporated in India under the relevant Law and engaged in any business related to renewable energy projects, electricity distribution, engineering services etc. The bidder shall submit a copy of Certificate of Incorporation/Memorandum of Association/Article of Association or any other relevant document(s) may be furnished along with the bid in support of above. In the Memorandum and Articles of Association, Article Number should be highlighted separately wherein the above information has been stated.

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

2.4.2 Technical Eligibility Criteria: Bidder should have prior experience of
  - The bidder should have experience of successful commissioning of minimum aggregate capacity of 10MW of grid-connected Solar power plant during the last three financial years. The copy of the Commissioning Certificate and Work order/ Contract/ Agreement/ from the Client/ Owner shall be submitted.
The bidder should have experience of successful commissioning of minimum capacity of 1MW Rooftop solar plant and above should be installed by the bidder in Telangana State. The copy of the Commissioning Certificate and Work order/Contract/Agreement/from the Client/Owner, which has to be attested/certified by an officer of Government Department/undertaking not below the rank of Executive Engineer or equivalent and countersigned by the Superintending Engineer or equivalent.

The Bidder should provide IEC certificate of SPV Module & Inverter and test report from authorized test centre of MNRE, Govt.

Must have field service setup to provide good after-sale services including necessary repair and maintenance in the state of Telangana. Accordingly, the bidder has to submit the details thereof.

Bidder should have the Grade-A Electrical License from the Telangana State Electrical Licensing Board, GoTS.

Bidder should have the registration certificate in electrical from the Telangana State Southern Power Distribution Company/ Telangana State Northern Power Distribution Company.

2.4.3 Standards/ Certificates:

The goods supplied and works executed under this contract shall conform to the standards mentioned in the technical specification and where no applicable standard is mentioned, the latest version of Indian Standard Institution or Bureau of Indian Specification shall be applicable.

The Bidder shall submit all the valid test certificates and reports of the system components following the latest MNRE Guidelines and the same components shall be supplied for which the test reports/certificates are submitted.

The manufacturer should submit test certificate of Module.

2.4.4 Financial Eligibility Criteria:

Turn Over: Cumulatively annual Financial Turnover during the last three years, ending on 31st March 2019 should be at least Rs. 15 Crores, without Sales/VAT/GST.
[Certified copies of the annual returns submitted to the ‘Registrar of Companies’ (R.O.C.) should be enclosed. For the last three years, a summarized sheet of turnover certified by registered CA shall be enclosed.]

**Net worth:** The Individual bidder shall have a Net Worth (which is defined as “Net value of the assets - Net value of liabilities”) for the last three financial years (as per the latest audited balance sheet) of not less than **9 Crores.**

### 2.5 Submission of Bid

The Bidder should submit the Bids off line to the **Chief Engineer, TSIIC, 5th Floor, Parishrama Bhavan, Basheerbagh, Hyderabad** as per the due date mentioned in Notice Inviting Bid.

Any bid received after the due date and time of submission on account of delay of any kind shall not be opened. Telegraphic/Faxed Bids shall not be considered.

### 2.6 Proforma /Schedule to be filled in along with Bid

The bidder must furnish all required information in the specified proforma/Schedule. If this information is not furnished, TSIIC shall not be responsible for any error in evaluation of bid and the bidder shall have no claim whatsoever, on this account.

### 2.7 Signing of Bid

The person authorized to sign the bid document through the power of attorney shall put initials under official seal on each and every page of the bid. The bid submission form shall bear full signatures under official seal fully disclosing the Name, Designation and Relationship of the Signatory with the firm/bidder.

The Bidders should authorize a person for performing a task related to the bid submission such as providing information, responding to enquiries, signing of Bid etc. The bidders shall submit along with bid, a Power of Attorney in original authorizing the signatory of the person signing the bid. The person authorized through the power of Attorney shall be the single point of contact for the purposes of the Bid process. The proforma of the power of Attorney is given as Annexure 3.
2.8 Site Visit

*It is mandatory for the bidder to visit the site and obtain all the required information before submitting the BID document. Site visit report signed by an authority of Telangana State Industrial Infrastructure Corporation Ltd (TSIIC) needs to be uploaded as a part of the technical BID as per the Annexure 8. **The tender submitted without the site visit report will be rejected out-rightly.**

2.9 Language of BID

The bid, any correspondence and the documents shall be in the English language.

2.10 Composition of Bid

The bid shall comprise two envelopes to be submitted simultaneously, one containing Technical Bid and Supporting documents and the other Financial Bid.

**Envelop –I**

The Envelop –I shall contain the following things:

- Bidder’s Information Sheet (Mandatory)
- Firm’s Profile at a Glance  (Mandatory)
- Process Fee Demand Draft/Online payment details (Mandatory)
- EMD BG/Online payment details for Rs.6.75Lakhs(Mandatory).
- TSSPDCL/TSNPDCL Registration certificate under Electrical. (Mandatory)
- Grade A Electrical License issued by Govt of Telangana. (Mandatory)
- TSREDCO Registration Certificate under validity (Optional)
- GST registration Certificate (Mandatory)
- PAN Certificate issued by the appropriate authority. (Mandatory)
- Income Tax returns of three previous assessment years.(2016-17, 2017-18, 2018-19) (Mandatory)
- Bidder shall upload Information, Experience Certificates, Completion Certificates, Test Reports and other such relevant document’s specified in the list of other important documents.(Mandatory)
- CA Certified Turn Over for 2016-17 to 2018-19. (Mandatory)
- Net Worth Certificate (If applicable)
• Nationalized / Scheduled Bank Solvency Certificate of at least 3 Crore. (Mandatory)
• Udyog Aadhar / SSI / NSIC (If applicable) (Optional)
• Valid EPF Registration Certificate (Mandatory)
• Shop Act / Partnership firm registration certificate / Incorporation Certificate (Mandatory)
• Self-Certification of No Barr/non-failure/blacklisted . (Mandatory)
• BIS/IEC/MNRE approved Lab Test Report in the name of Bidder. (Mandatory)
• Valid Solvency certificate for the required amount.(Mandatory)
• Undertaking from Original Equipment Manufacturer mentioned in the Test Report. (Mandatory)
• Key Personnel information in a statement along with certificates(Mandatory).
• Critical Equipment certificate in the statement (Mandatory)

The Bidder is expected to examine all instructions, forms, terms and specifications in the Tender Documents. Failure to furnish all information required, by the Bidder, documents or submission of a Bid not substantially responsive to the Tender documents in every respect or incomplete bid document will be at the Bidder’s risk and may result in rejection of its Bid.

NOTE: It may be noted that Technical Bid (Envelope-I) shall not contain any information/document relating to Financial Bid. If Technical Bid contains any such information/documents relating to price, the bidder will be declared as disqualified / outright rejected.

**Envelop-II shall contain the following things:**

• The Financial Bid quote in the given proforma.

**Financial Bid shall contain:**

• The bidder should quote the price including all taxes, duties, insurance and all incidental charges as against total contract tender estimate as shown in the price schedule format.
• Installation, testing, commissioning charges includes “FOR” destination prices inclusive of packing, forwarding, freight, inland transportation, insurance, loading, unloading, supply, distribution, collection, testing
inspection and any/all charges incidental for successful design, supply, installation, commissioning and comprehensive maintenance for five years of Solar PV Power Plant.

- Prices shall be quoted in Indian Rupees only.
- In no circumstances, escalation in the prices will be entertained.
- The Bidder shall complete the price schedule furnished in the Tender Document, indicating the price of Solar plant towards Design, Manufacture, Supply, Transport, Installation, Testing and Commissioning of Solar plant as per the Technical specifications. TSIIC will not pay any extra charges over and above rate quoted by the Bidder. The quoted price shall be “FIXED”, during the entire term of the Contract.

- The additional payments mean the TSIIC will pay any other departmental charges / Fees as per actuals and the total liasoning work is at bidder scope only.
- Financial Bid uploaded with an adjustable price quotation/conditional bid will be treated as nonresponsive and will be rejected.
- Any Bid not in accordance with above clauses of this Section will be rejected.

2.11 Bid Currency

Prices shall be quoted and payable in Indian Rupees only.

2.12 Bid Validity

a) Bids shall be valid for the completion period and any approved extension period from the date of opening of technical bid. Bid with lesser validity will get disqualified. In exceptional circumstances, the TSIIC may solicit the Bidder’s consent to an extension of the period of validity. The request and the responses there to shall be made in writing.

b) Bids with an excess of above 5% of the estimated contract value shall be summarily rejected.

c) For tenders up to 25% less than the estimated contract value of work, no additional security deposit is required. But for tenders less than 25% of the estimated
contract value of work, the difference between the tendered amount and 75% of
the estimated contract value, shall be paid by the successful tenderer at the time of
concluding agreement as an **additional security** to fulfill the contract through a
Bank Guarantee on a Nationalised/Scheduled Commercial Bank in the prescribed
format valid till completion of the work in all respects.

d) If the percentage quoted by a tenderer is found to be either abnormally high or
with in the permissible ceiling limits prescribed but under collusion or due to unethical
practices adopted at the time of tendering process, such tenders shall be rejected.

e) A tenderer submitting a tender which the tender accepting authority considers
excessive and or indicative of insufficient knowledge of current prices or definite
attempt of profiteering will render himself liable to be debarred permanently from
tendering or for such period as the tender accepting authority may decide. The
tenderer overall percentage should be based on the controlled prices for the
materials, if any, fixed by the Government or the reasonable prices permissible for
the tenderer to charge a private purchaser under the provisions of clause-6 of the
hoarding and profiteering prevention ordinance of 1943 as amended from time to
time and on similar principle in regard to labour supervision on the construction.

2.13 Earnest Money Deposit (EMD), Security Deposit (SD) and Forfeiting of EMD

**A. Earnest Money Deposit:**

1. The Tenderer shall furnish, Earnest Money Deposit equivalent to 1% of ECV
through Bank Guarantee/Online payment.

2. The BG shall be from a Nationalized / Scheduled Commercial Bank valid for a
period of 12 months after the deadline for submission of Bid. Original copy of the
BG is to be submitted along with the Bid.

3. The bid Security BG will not be accepted and retained as EMD (towards
Performance Security) at the time of concluding Agreement.

4. Such bid Security Bank Guarantees will be returned to the bidder(subject to
compliance of Tender conditions) on submission of EMD amount @2.5 % of ECV or
TCV whichever is higher through Bank Guarantee/Online Payment.

5. The Bid Security of unsuccessful bidder shall be returned to the same Bank
Account on finalization of trends or end date of tenders validity whichever is
earlier. In case of BG the bidders are required to submit the instrument to the
tendering authority before the price bid opening as per tender condition.

6. Bank Guarantee obtained from Nationalised / Scheduled Commercial Banks shall
only be accepted. It shall be valid for the duration of contract period plus
successful installation and performance report generated automatically through
Remote monitoring System which should be duly certified by TSIIC Officials i.e
12 Months. In case any valid extension of contract period is granted, the validity of
BD shall also be extended for the corresponding period.

7. The Earnest Money deposited will not carry any interest and it will be dealt with as
provided in the conditions stipulated in the tender.

8. The Bank Guarantee for additional security shall be valid till 28 days beyond
completion period of the work.

TSIIC Account No. 304011029457, TSIIC Ltd, Kotak Mahindhra Bank, Abids,
Hyderabad).

B. Forfeiting of EMD:

The EMD paid or submitted by the Bidder shall be forfeited if:

1. The Bidder withdraws his tender before finalization of the work order.

2. The Bidder does not accept work order.

3. The Bidder violates any of the terms and conditions of the tender.

4. The Bidder fails to deposit requisite the Security deposit.

5. The Bidder fails/refuses to execute the order as herein, the Bidder shall be deemed
to have abandoned the contract & such an act shall amount to and be construed
as the Bidders calculated and wilful breach of contract, the cost and consequence
of which shall be to the sole account of the Bidder and in such an event the TSIIC
shall have full right to claim damages thereof in addition to the forfeiture of EMD.

6. False information and documents.

C. Security Deposit: (EMD)

1. Bidder shall furnish security deposit at 2.5% of the total contract value within 15
working days from the date of issue of the work order by way of Online payment/
Bank Guarantee of nationalized bank / Scheduled Bank in favour of TELANGANA STATE INDUSTRIAL INFRASTRUCTURE CORPORATION LTD, Hyderabad.

2. Failure to comply with the terms of the security deposit shall result in cancellation of work order without any further reference to the Bidder and the EMD shall be forfeited.

3. The security deposit shall be liable to be forfeited wholly or partly at the sole discretion of the TSIIC, if the Bidder either fails to execute the work of above projects or fails to fulfil the contractual obligations or fails to settle in full his dues to the TSIIC.

4. In case of premature termination of the contract, the security deposit will be forfeited, and the TSIIC will be at liberty to recover the losses suffered by it & if the additional cost is to be paid, the same shall be recovered from the Bidder.

5. The TSIIC is empowered to recover from the security deposit for any sum due and/or any other sum that may be fixed by the TSIIC as being the amount of loss or losses or damages suffered by it due to delay in performance and/or non-performance and/or partial performance of any of the conditions of the contract and/or non-performance of guarantee obligations.

6. The security deposit shall be released to the Bidder only after the contract is completed to the satisfaction of the TSIIC.

2.14 Format, Signing, Sealing and Marking of Bid

- The bidders shall submit the requisite information/documents in the prescribed format.
- Strict adherence to the formats wherever specified, is required. Non-adherence to formats and/or submission of incomplete information may be a ground for declaring the Bid as non-responsive.
- The bids should be submitted in English language only.
- The document should be neatly typed and printed on A4 page. All the necessary enclosures should be attached to the BID document as per the requirement of BID to support the qualification of the bidder.

2.15 Deadline for Submission of Bid
The bidder shall bear all the costs associated with the preparation and submission of the bid. TSIIC will in no case be responsible or liable for those costs, under any conditions. The Bidder shall not be entitled to claim any costs, charges and expenses of and incidental to or incurred by him through or in connection with his submission of bid.

**BIDs must be received on or before the date specified in Notice Inviting BID.**

2.16 Late Bids

Any bid received after the dead line shall be outrightly rejected.

2.17 Opening of Technical Bid

Envelope-I, Technical Bid shall be opened on the time and date as mentioned in Notice Inviting BID.

2.18 Evaluation of Bid Document

The evaluation process shall comprise of two steps:

Step I – Evaluation of Technical Bid

Step II - Evaluation of Financial Bid

**Evaluation of Technical Bid**

The Technical Bid submitted by Bidders shall be scrutinized to establish responsiveness to the general, technical and financial requirements specified in this section.

The bids shall be considered as unsuccessful technical bids in case of any of the following situations:

a) The Bids that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, power of attorney, applicable undertakings, format for disclosure, tender fee etc.;

b) Bid not signed by authorized signatory and /or stamped in the manner indicated in this Bid Document;

c) BIDs having material inconsistencies in the information /documents submitted by the Bidder, affecting the Eligibility Criteria;
d) Required information not submitted in the formats specified in this BID document;

e) Bid not received by the Bid Deadline

f) Bid having Conflict of Interest

h) Bidder delaying in the submission of additional information or clarifications sought by TSIIC.

i) Bidder makes any misrepresentation.

The evaluation of Bidder’s Technical Eligibility will be carried out based on the information furnished by the Bidder as per the prescribed Formats and related documentary evidence in support of meeting the Eligibility Criteria – General, Technical and Financial as specified above. Non-availability of information and related documentary evidence for the satisfaction of eligibility criteria may cause the Bid to be non-responsive. TSIIC reserves the right to call the shortfall from bidder.

**Evaluation of Financial Bid**

All the technically qualified bidders will be selected for the opening of the financial Bid. Financial Bid (Envelope II) of the Qualified Bidders shall be opened and the date will be intimated on the bidding portal.

The bidder has to quote the Financial Bid in the prescribed format. Financial Bids of Qualified Bidders shall be ranked from the lowest (L1) to the highest, and the L1 bidder shall be declared as the Successful Bidder.

**2.19 Award of Contract**

The bidder, who has been notified as Successful Bidder, shall be given 15 days time from the date of issue of Letter of Intent for submission of following details:

- a) Detailed Bill of Materials, project technical specifications, engineering drawings of the solar power plant certified by MNRE empanelled Chartered Engineer.
- b) Project execution plan giving details of activity and date of completion. (till the date of project commissioning)
- c) Plans and time required to get clearances for setting up of the project.
d) Security Deposit(balance EMD) of 1.5% of the Contract Value in the form of DD or BG to be submitted by the successful bidder within 15 days after the placement of work order.

2.20 Signing of Contract Agreement

a) On submission of the above documents, the bidder will be called for signing of the contract agreement. The bid document shall be the integral part of contract agreement and all the terms and conditions under the contract agreement shall be binding on the bidder irrespective of the fact that all of them may or may not be appeared in the contract agreement.

b) The detailed project technical specifications, engineering drawings of the solar power plant comprising of generation plants and distribution network, project execution plan submitted by the bidder after the issue of work order shall be a part of contract agreement and it is binding on the bidder to execute the entire work as per the specifications agreed upon.

c) The Rs. 100/- &Rs.20/- costs of NJS/ franking and similar charges at actuals (if any) imposed by law in connection with entry into the contract agreement shall be borne by the bidder.

2.21 Disclaimer

Kindly Note:

1. This document is not transferable.

2. Though adequate care has been taken for preparation of this document, the Bidder shall satisfy himself that the document is complete in all respects. Intimation of any discrepancy shall be given to this office immediately. If no intimation is received from any bidder within ten days from the date of issue of the bid document, it shall be considered that bid document is complete in all respects and has been received by the bidder.

3. **Chief Engineer, TSIIC** reserves all rights to accept, cancel the BIDs or reject any or all bidders or change the conditions mentioned in bid documents at any stage or take any decision regarding implementation of the projects.
4. While the BID document has been prepared in good faith, neither TSIIC nor their employees or advisors make any representation, warranty, express or implied or accept any responsibility or liability, whatsoever, in respect of any statements or omissions herein, or the accuracy, completeness or reliability of the information, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability and completeness of this BID document, even if any loss or damage is caused by any act or omission on their part.

### 2.22 Check list

Check list of documents to be submitted along with the BID is as mentioned below:

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Particulars</th>
<th>Complied</th>
<th>Page No / Flag</th>
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<tbody>
<tr>
<td>1</td>
<td>Filled in BID document duly signed and stamped at the bottom of each page.</td>
<td></td>
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<td>2</td>
<td>Power of Attorney</td>
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<td>3</td>
<td>Processing Fee DD</td>
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<td>4</td>
<td>EMD Online payment/BG for Rs.6.75Lakhs</td>
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<td>5</td>
<td>TSREDCO Registration Certificate</td>
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<td>6</td>
<td>Grade A Electrical License issued by Govt of Telangana</td>
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<td>7</td>
<td>TSSPDCL/TSNPDCL Registration certificate under Electrical.</td>
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<td>8</td>
<td>Certificate of registration issued by Government organizations.</td>
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<td>9</td>
<td>Bidder Information Sheet</td>
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<td>10</td>
<td>Firm’s Profile at a Glance</td>
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<td>11</td>
<td>Copy of the PAN card of the bidder’s firm</td>
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<td>12</td>
<td>Copy of the GST Certificate of the bidder’s firm</td>
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<td>13</td>
<td>Copies of Income Tax returns of 3 previous</td>
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<td>No.</td>
<td>Requirement</td>
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<td>14</td>
<td>Chartered accountant certified turn over for FY 2016-17 to 2018-19.</td>
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<td>15</td>
<td>Site Visit Report as per Annexure 8</td>
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<tr>
<td>16</td>
<td>Supporting document in support of technical qualification as per bid document (Experience certificates/Purchase orders / work completion certificates etc.)</td>
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<td>17</td>
<td>Net Worth Certificate</td>
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<td>18</td>
<td>Nationalized / Scheduled Bank Solvency Certificate of at least 3 Crores</td>
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<td>22</td>
<td>BIS/IEC approved Manufacturing certificates on bidder name</td>
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<tr>
<td>23</td>
<td>MNRE approved Lab Test Report solar module and inverter</td>
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Section-3
General Conditions of Contract

3.1 Definitions

In the “Bid/Tender/Contract Document” as herein defined where the context so admits, the following words and expression will have the following meaning:

a) “Affiliate” shall mean a company that either directly or indirectly

   I. controls or

   II. is controlled by or

   III. is under common control with

   a Bidding Company (in the case of a single company) and “control” means ownership by one company of at least twenty-six percent (26%) of the voting rights of the other company.

b) “Bid” shall mean the Technical Bid and the Financial Bid submitted by the Bidder along with all documents/credentials/attachments annexure etc., in response to this BID document, in accordance with the terms and conditions hereof.

c) “Bid Deadline” shall mean the last date and time for submission of Bid in response to this Tender Document as specified in Bid information Sheet;

d) “CEA” shall mean Central Electricity Authority.

e) “CMC” comprehensive maintenance contract shall mean the five years of annual comprehensive maintenance inclusive of all spares, parts, consumables, services etc.

f) “Commissioning” means Successful operation of the solar power plant including the net meter and inspection/certification by the electrical inspectorate.

g) “Company” shall mean a body incorporated in India under the Companies Act, 1956;

h) Capacity Utilization Factor” (CUF) means the ratio of the annual output of the plant in kWh to the units that the plant can produce with the installed plant capacity put in operational for 365 days x 24 hours. CUF = plant output in kWh / (installed plant capacity in kW * 365X24);
i) “Eligibility Criteria” shall mean the Eligibility Criteria as set forth in Section 6 of this bid document;

j) "kWp" shall mean kilo-Watt Peak;

k) "kWh" shall mean kilo-Watt-hour;

l) “Project” means grid-connected solar power project under net metering regulation of TSERC.

m) “Project Cost” shall mean the total price of the grid-connected solar power project including the maintenance of 5 years as discussed in the Bid document.

n) “Project capacity” means Capacity of power generating plants/stations in kW offered by the Bidder.

o) “Project life” means the life of the solar power plant which is considered as 25 years.

p) “Project Company” shall mean Company incorporated by the bidder as per Indian Laws for installation, commissioning and maintenance of the solar power plant;

q) “RMS” Remote Monitoring System/SCADA system/ Inverter based web monitoring system for remotely monitoring the real time plant functioning, monthly generation and performance etc.

r) “Financial Bid” shall mean Envelope II of the Bid, containing the Bidder’s Quote for Design, Engineering, Supply, Installation, Testing, Commissioning and Comprehensive Maintenance Contract (CMC) with for a period of 5 Years for an aggregate capacity of 1.5 MW Net Metering Rooftop Solar PV Grid Interactive Systems as per the format given in the bid document;

s) “Qualified Bidder” shall mean the Bidder(s) who, after evaluation of their technical bid stand qualified for opening and evaluation of their Financial Bid;

f) “Successful Bidder(s) / Project Developers(s)” shall mean the Bidder(s) selected by TSIIC for implementation of the proposed solar power plant as per the terms of this bid documents, and to whom LOA will be issued;
3.2 Local Conditions

The intending Bidders shall be deemed to have visited the Site details given in Section-1 and get familiarized with local conditions before submitting the Bid. Non-familiarity with the Site conditions will not be considered a reason either for not carrying out the Works in line with the scope of work and proposed Technical Specifications or for any delay in performance.

3.3 Contract Agreement

The contract shall come into full force and effect on the date stated in the contract agreement.

3.4 Responsibilities of Developer/Bidder

Protection of the environment, rules and regulations: The developer/bidder shall take all reasonable steps to protect the environment, rules and regulations applicable while installation and maintenance of solar power plant. TSIIC shall not be responsible for any violation of Law and environmental damage done by the developer/bidder.

Arranging electricity, water and gas etc.: The developer/bidder shall arrange power, water and other services he may require at the site at his own cost during installation and commissioning of the solar plant.

Site Data: The developer/bidder shall be responsible for verifying and interpreting all data provided by the concern beneficiary / TSIIC.

Safety Procedures: The developer/bidder shall comply with all applicable safety regulations during project execution and maintenance of the grid connected solar power project.

Data Recording: The developer/bidder shall keep proper records of daily power generation data of all power generation plants as well as the monthly power consumption data of all consumers.

Operating practices, standards, standard of performance: The developer/bidder shall follow the applicable practices/procedures /standards/SOP norms etc as applicable to the host utility in Telangana.
3.5 Design

General Design Obligations

The developer/bidder shall ensure proper design of grid-connected solar power plant so as to optimize the power generation from the solar power plant. The developer needs to undertake the shadow analysis of the nearby objects so as to avoid such area for solar installation. The developer shall take utmost care in installation and commissioning and follow industries best practices.

Technical Standards and Regulations

The developer/bidder shall ensure the quality of equipment to be used in setting up the grid-connected solar power plants. The design, execution and the completed works shall comply with the relevant technical standards, design and operating limits, environmental laws, operation and safety standards, laws applicable etc.

Training

The developer/bidder shall carry out the training for one / two employees of the consumer who will be involved in the day to day operation of the plant.

Operation and Maintenance (O&M) Manuals

Prior to the commencement of the Tests on Completion, the developer/bidder shall prepare O&M manuals giving sufficient detail which can be used by O&M staff. Further, the O&M manuals supplied by the equipment suppliers shall be properly included in the O&M manuals to make it complete more useful for the O&M staff.

3.6 Labour laws

The developer/bidder shall comply with all the relevant provisions of Labour Laws.

3.7 Right to withdraw the BID and to reject any BID.

Chief Engineer, TSIIC reserves all rights to accept, cancel the tender at any time without assigning any reasons thereof. Chief Engineer, TSIIC reserves all rights to reject any or all bidders or change the conditions mentioned in tender documents at any stage or take any decision regarding implementation of this tender without assigning any reasons whatsoever.
TSIIC reserve the right to interpret the Bid submitted by the Bidder in accordance with the provisions of the Bid and make its own judgment regarding the interpretation of the same. In this regard the TSIIC shall have no liability towards any Bidder and no Bidder shall have any recourse to the TSIIC with respect to the selection process. TSIIC decision in this regard shall be final and binding on the Bidders.

3.8 Risk and Responsibility

3.8.1 Indemnities

The developer/bidder shall indemnify and hold harmless the TSIIC and its personnel, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

i) Bodily injury, sickness, disease or death, of any person whatsoever arising out of or in the course of or by reason of the design, execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, willful act or breach of the Contract by the TSIIC, or any of their respective agents, and Damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss:

a) Arises out of or in the course of or by reason of the design, execution and completion of the Works and the remedying of any defects.

b) Is not attributable to any negligence, willful act or breach of Contract by the TSIIC or its personnel, their respective agents, or anyone directly or indirectly employed by any of them.

3.8.2 Developers Care of the Works

The developer shall be fully responsible for the care of the works and equipment from the commencement of installation work to commissioning of the solar power plant and maintenance of the plant over the next 5 years CMC period.
3.9 Insurance

The Bidder shall be responsible and take an appropriate 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 etc. The bidder shall also take appropriate insurance during O&M period.

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 the execution of the Contract i.e. from the start of the project commissioning to completion of 5 years of CMC period. 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 the bidder.

The bidder shall take up the matter with the insurance company on its own for finalization of claims. All actions in connection with making and settling of claims, if any, will be carried out by the bidder at its own. TSIIC shall not be liable for any payments for financial loss or non-recovery of payment from the insurance company.

The bidder shall be responsible to make good the damage or loss by way of repairs and/ or replacement of equipment free of cost, irrespective of the fact whether the claim is accepted by the insurance company or not, without waiting for settlement of claims.

3.10 Labour Welfare Cess:

3.10.1. As per the Building and Other Construction workers (regulation of Employment and conditions of service) Act, 1996 (Main Act) and Building and other Construction workers welfare Cess Act, 1996 (Cess Act) and the Cess rules, 1998 Cess is to be collected from the Employers undertaking Construction activity to implement welfare measures to the construction workers.
3.10.2 All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay Cess at the rate 1% of the cost of construction or as may be modified by the Government from time to time.

3.10.3 The Cess shall be recovered from each bill @ 1% from the Contractors. The Cess so recovered from the work bills has to be remitted by way of Cross Demand Draft in favour of Telangana State Building and Other construction workers welfare board.

3.11 Force Majeure

3.11.1 Definition of Force Majeure:

The Force Majeure "FM" means an exceptional event (s) / circumstance (s), here-in-after called the "Eventualities", which are:

i) Beyond a Party's control,

ii) Which such Party could not reasonably have provided against before entering into the Contract

iii) Which, having arisen, a party could not reasonably have avoided or overcome, which is not substantially attributable to the other party.

iv) FM may include, but not limited to, eventualities of the kind listed below, so long as conditions (i) and (ii) are satisfied

a) War, hostilities, invasion, the act of foreign enemies,

b) Rebellion, terrorism, revolution, insurrection, military, usurped power, or civil war, riot, commotion, disorder, strike or lockout by persons other than the developer's/bidder's Personnel/Employees of the contractor and Subcontractors.

c) Munitions of war, explosive materials, ionising radiation or contamination by radio-activity, except as may be attributable to the contractor's use of such munitions, explosives, radiation or radio-activity.

d) Natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.
Note: The bidder will be fully responsible for any supply chain disruption due to geopolitical issues in and around the World. If the bidder would be procuring the modules and/or other equipment from other countries for the project, any supply or replacement disruptions/delay due to geopolitical issues will not be considered under the FM.

3.11.2 Notice of Force Majeure:

- If a bidder is prevented from performing its obligation(s) under the Contract by FM, then it shall give notice to TSIIC of the event/circumstances constituting the FM and specify the obligations, the performance of which is or will be prevented.
- The bidder shall, having given notice, be excused from performance of such obligations for so long as such FM prevents it from performing them.

3.11.3 Consequences of FM

- If the bidder is prevented from performing any of his obligations under the Contract by FM of which notice has been given, and suffers delay and/or incurs a cost by reason of such FM, the bidder shall be entitled to an extension of time for any such delay, if completion is or will be delayed.

3.12 Claims, Disputes and Arbitration

3.12.1 Disputes

Dispute (s), if any, shall be settled by mutual agreement through Amicable Settlement (Sub-Clause 3.11.2 (Amicable Settlement)) and in case of failure, through Arbitration Under Sub-Clause 3.11.3 (Arbitration.)

3.12.2 Amicable Settlement

Both parties (the developer/bidder and the TSIIC) shall attempt to settle the dispute amicably before the commencement of the arbitration. However, unless both Parties agree otherwise, arbitration may be commenced on or after the forty-fifth day after the day on which notice of dissatisfaction was given, even if no attempt at amicable settlement has been made.
3.12.3 Arbitration

Unless settled amicably, any dispute shall be finally settled by arbitrator(s) who shall be appointed from amongst the suitably qualified person(s) to be agreed by both the parties for arbitrations.

The arbitration clause No. 73 as provided in the P.S. to APSS shall not apply to this contract. The Civil Courts of Hyderabad / Secunderabad only shall have jurisdiction to entertain the disputes arising out of this Contract by way of Civil suits.

Section-4

Special Conditions of Contract

4.1 Completion of Work

The solar project should be commissioned on or before 120 days from the date of award of contract.

4.2 Assignment, Subletting of Contract and Purchased Items

The bidder is free to sublet any part of the contract of supply, erection and commissioning of the solar power plant. However, bidder will have to undertake maintenance of the solar plant at its own. In case of maintenance of power generating equipment where specific skill sets required for maintenance which is generally available with the equipment suppliers, in that case, such works can only be sub-contracted.

4.3 Submission Bank Guarantee

The bidder/developer shall furnish Security Deposit in the form of bank guarantee of any Nationalized bank of value equivalent to 2.5% of the agreement value/contract value towards successful completion of the scope of work for Design, Engineering, Supply, Installation, Testing, Commissioning with 5 Year CMC for an aggregate capacity of 1.5MW Grid Interactive Solar PV project at e-city, Raviryalal(V), Maheshwaram(M), RR Dist. The developer/bidder shall submit the BG within 15 days of issue of LoI. The BG shall be valid for the period of at least 12months.
The Performance security shall be submitted in the form of a Bank Guarantee duly executed on non-judicial stamp paper of requisite value.

4.4 Submission Bank Guarantee for Guaranteed Generation

The bidder/developer shall furnish a bank guarantee of any Nationalized / schedule Bank valid for a period of 5 years of value equivalent to 7.5% of the agreement value/contract value towards guaranteed generation. The bank guarantee shall be valid for the period of 5 years of CMC period. Bidder shall submit this BG before release of the last 10% payment. The necessary bank guarantee submitted by the bidder will be considered to take care of the active guaranteed generation of the project which will be expected as per the prevailing electricity tariff for the establishment. If generation in these years found to be less, then the penalty will be levied as per the prevailing TSSPDCL electricity tariff for the consumer.

4.5 Manuals

The developer/bidder shall furnish 3(Three) sets of bound copies of erection, commissioning, operation & maintenance manuals giving detailed instructions, procedures, precautions for all the equipment used in the solar power plant.

4.6 Safety

All equipment and installations in the solar power plant shall be safe to the personnel working for O&M of the project and the personals and animals passing nearby such installations. Solar power project shall comply with the operations and safety provisions enlisted under the relevant safety rules and regulations / statutory requirement issued by the State Government and the Central Government as well as to: i. Indian Electricity Rules ii. Indian Electricity Act

4.7 Water for Bidders Use

The bidder shall make his own arrangement to meet the water requirement during erection, installation, commissioning of the solar power plant. The Telangana State Industrial Infrastructure Corporation may provide the source. The Bidder need to make his own arrangement for storage and pumping of water required at the site.
4.8 Work-schedule/re-scheduling & Progress of Work

The developer shall submit a detailed PERT chart of activities within 15 (Fifteen) days after the date of receipt of LOI. The developer /bidder shall submit the progress report on a monthly basis to the TSIIC during the project execution period. Also, during the bidders contracted project maintenance (CMC) period of 5 years the developer/bidder shall submit assist the plant operator to develop a quarterly report of daily energy generation from the power generating plants.

4.9 Guarantee and Warrantee

The Bidder shall ensure that the equipment and goods used in the installation and commissioning of the solar plant have sufficient guarantees and warranties. It will be the responsibility of the project developer/bidder to get the faulty instruments replaced or repaired without affecting the availability of power supply to the consumers of the solar power project. Further, any expenses to be incurred on availing such guarantees/warrantees/repairs will have to be borne by the developer/bidder till the completion of the CMC period.

4.10 Price Variation, Taxes, Duties & Levies etc.

The bidder shall take care of the variations in prices/taxes/duties/levies of the materials, labours, supplies etc and quote the price appropriately. The quote shall include all the taxes and duties. TSIIC shall not entertain any addition in project cost.

4.11 Contract Drawings and Technical Specifications

Within 30 (Thirty) days from the signing of the contract the bidder shall submit the following documents:

1) Drawings of power plants and power distribution line

2) Technical specifications of the power plant and distribution network

3) Bill of the material of the solar power project

4) Single line diagram of all power generation plants and distribution network approved by appropriate authority.

5) Front view and General Arrangement diagrams for panel(s).
6) Control and schematic drawings for control/protection, Lightning protection, drawings showing coverage of all equipment, structures, etc.

Before commissioning of the solar project, the bidder/project developer shall submit following the documents:

1) The technical documents and specifications of the equipment submitted by the suppliers of power generation plant, catalogues for each type of equipment, relays, meters etc., installation and commissioning manuals for each equipment, relay etc.,
2) Operation manual of power plant
3) O & M manuals indicating trouble shooting procedure for all equipment
4) Type Test Certificates for all the major equipment
5) Details of Test results, for the test conducted at works for all equipment
6) Details of Test results, for tests conducted at site for all equipment
7) Overall General Arrangement (GA) of all the panels/equipment
8) Spare part list, numbers and ordering procedure for all recommended spares
9) Static and dynamic loading of each equipment

4.12 Inspection & Testing

The bidder/developer shall procure the standard quality materials complying with the relevant IS standards. The inspection and testing of the materials purchased will be the responsibility of bidder/developer. The bidder/developer shall have to submit the test certificates and inspection reports of the equipment.

Pre dispatch inspection: Successful bidder shall inform TSIIC for pre-dispatch inspection at their manufacturing facility or storage place by the prior intimation of 15 days. After getting clearance from TSIIC supplier may dispatch the material and site.

Commissioning inspection: TSIIC shall witness the commissioning and trial run tests of the installed power generating sets and the distribution network.
After commissioning of the plant before the release of payment the bidder shall be conducted third party inspection by the MNRE Empanelled Chartered Engineer (Solar).

4.13 Terms of Payment

a. 70% of site-wise project cost will be released after supply & successful installation of the solar plant duly certified by the developer, TSIIC Officials along with submission of Insurance policy documents for CMC period and along with RMS installation report which should be duly certified by Developer/Bidder, TSIIC Officials&authorized MNRE – Chartered Engineer.

b. 20% of the site-wise project cost shall be released on receipt of a one-month successful performance report generated automatically through Remote monitoring System which should be duly certified by Developer, TSIIC Officials.

c. 10% of the site-wise project cost shall be released on submission of commissioning report of the project & submission of next two-month successful performance report generated automatically through Remote monitoring System which should be duly certified by TSIIC Officials. And, submission of Performance Bank Guarantee (PBG) of 7.5% of the total project cost from any Nationalized / schedule Bank valid for a period of 5 years. This PBG can be in 5 equal parts respectively valid for 1,2,3,4 and 5 years from the date of commissioning and the expired PBG should be released every year (all five PBG should be submitted at the time of the release of final 10% payment). In case if “you” do not provide service during the warranty period, PBG should be forfeited, and “you” shall be blacklisted.

The developer shall furnish a bank guarantee of any Nationalized / schedule Bank valid for a period of 05 years of value equivalent to 7.5% of the total project cost towards guaranteed generation. The bank guarantee shall be valid for the period of 5 years of CMC period. The developer shall submit this BG before the release of the last 10% payment.

Deduction:-

The TDS at the source will be deducted as per the Govt. rule and regulations.
TSIIC will issue necessary certificates of TDS deduction

For claiming the payment, the project developer will have to submit the following documents:

1) Submission of Performance Bank Guarantee in the format given in the bid document.

2) Monthly progress report during the project installation and commissioning. (for the first instalment)

3) Submission of commissioning report. (for the first instalment)

4) Submission of one month’s performance report (for the second instalment)

5) Submission of next two month’s performance report (for the third instalment)

4.14 Power to Vary or Omit Work

The bidder/developer is required to submit technical specifications, drawings and bill of material of individual power plant component of the proposed solar power project within one month from the signing of the contract. The bidder/developer has the powers to deviate in the technical specifications until the time of submission of the bids. Thereafter, no alterations, amendments, omissions, additions, suspensions or variations of the work shall be made by the developer. However, some exceptions may be granted in the change in specifications due to the site requirements or due the material availability be allowed. The developer will have to get such amendments in the specifications approved from the TSIIC.

The omission of some of the execution work, than that specified by the developer during submission of specifications and bill of materials shall not be allowed. TSIIC shall assess the cost of work omitted and can reduce the price on prorate basis.

4.15 Death and Bankruptcy

If the developer/bidder dies or commit any act of Bankruptcy, or being a corporation commence to be wound up except for reconstruction purposes or carry on its business under a Receiver, the executors, successors, or other representative in the law of the estate of the developer or any such Receiver, liquidator, or any
person in whom the contract may become vested, shall forthwith give notice thereof in writing to the TSIIC.

During such process the developer/receiver/liquidator shall take all reasonable steps to continue operations of the project.

4.16 Liability for Accidents and Damage

The developer shall be responsible for the loss, damage of the solar power plant till the commissioning and handing over of the plant. The developer shall be responsible for any such loss, damage and depreciation occurring during procurement, erection, commissioning and operation of the solar power plants.

The developer shall indemnify and keep the TSIIC harmless against all actions, suits, claims, costs, or expenses arising in connection with injuries other than such as may be attributable to the developer or his employees.

4.17 Penalty / Liquidity Damages

If the systems are not installed and commissioned within the stipulated period as mentioned in the work order the Bidder shall be required to pay the penalty of 0.5% (half percent) per week, maximum up to 10% of the total cost of the systems and the amount shall be recovered either from the amount due to the Bidder or from Performance Bank Guarantee.

If Successful bidder is not able to complete the project in due time, the same shall be get done through other contractor and the Successful bidder has to bear all the cost incurred against the balance work left by him for the completion of the project.

Any shortfall in the generation below the guaranteed generation of 15 lakhs kWh / 1MW shall be recover from the developer at the prevailing TSSPDCL tariff for that consumer subject to maximum 10% of the project cost up to the CMC period of 5 years. Monitoring of the generation guarantee compliance shall be done at the end of each year till the completion of the CMC period.

4.18 Replacement of Defective Plant or Materials

If during the progress of the work the TSIIC notifies in writing to the Developer/Bidder about the unsound or imperfect work or has supplied any plant of inferior in quality
than that specified, the developer/bidder, on receiving details of such defects or deficiency shall, at his own expense, within such time as may be reasonably necessary for making it good, proceed to alter, reconstruct or remove such work, or supply fresh materials up to the standard of the specification. In case the developer fails to do so, the TSIIC may, assess the difference in cost of standard and substandard work and consider the same for reduction of bid price on prorata basis. If the bidder would be procuring the modules and/or other equipment from the other countries for the project, in case of any supply or replacement disruption/delay due to geopolitical issues, the bidder shall, at his own expenses, ensure the replacement of the material and equipment with the required technical specification given in the bid document.

4.19 Test on Commissioning

The developer/Bidder shall undertake all necessary tests at the time of commissioning of the project to ensure the satisfactory and safe operation of the project. The developer shall inform well in advance to the TSIIC regarding the commissioning tests to be carried out along with its schedule. The officials of TSIIC or their authorized representative may witness the commissioning tests. The commissioning certificate of the electrical inspectorate, TSSPDCL/TSRANSCO is required to be submitted to TSIIC.

Plant Power Performance Ratio Testing

The successful bidder shall be required to meet minimum guaranteed generation with Performance Ratio (PR) at the time of commissioning. PR should be shown a minimum of 75% at the time of inspection for initial commissioning acceptance.

Plant Energy Performance Ratio Testing

The overall energy performance ratio of the system shall exceed 75%. (Sum total of the system energy losses shall not exceed 25%). Capacity Utilization Factor (CUF) as per the GHI levels of the location during the O&M period shall be maintained above minimum CUF of 15% for CMC period of 5 years. Correction shall be applied based on grid non availability of more than 3%. In case of exceeding the grid non-availability of 3% on annual basis, the bidder shall timely inform the beneficiary.
department / TSIIC about the issues. In case of plant shut down / shut down on incomer if the solar plant remains close, such electricity loss shall be considered for loss in a generation.

4.20 Operation and Maintenance

The developer/bidder shall maintain the solar power project for 5 years in an efficient and safe manner. The developer shall undertake maintenance of the project at its own cost. Following minimum O&M activities shall be executed within the CMC period.

- Cleaning of solar PV modules with soft water, wet and dry mops at 15 days cycle
- DC String / Array and AC Inverter monitoring: Continuous and computerized.
- AC Energy monitoring: Continuous and computerized.
- Visual Inspection of the plant: Monthly
- Functional Checks of Protection Components and Switchgear: Quarterly.
  - Inverter, transformer, data acquisition, energy meters and power evacuation checks: Half Yearly.
- Support structure and terrace water-proofing checks: Yearly.
- O & M log sheet shall be provided and maintained.
- The repair/replacement work shall be completed within 48 hours from the time of reporting the fault.
- A half-yearly performance report of the plant inclusive of energy generation data shall be provided as per approved format.
- All recorded data for the first 5 years shall be preserved in both manual and computer format and submitted at the time of handing over.

On completion of the first year of project operation, the plant will be handed over to the beneficiary department. TSIIC shall monitor and release the yearly O&M payment to the developer up to the completion of the CMC period of 5 years. It will be the responsibility of the beneficiary department to execute AMC with the developer for the period from 6th year to 10 years with the agreed payment terms. TSIIC will have the right to terminate the O&M contract at any point of time in case the O&M services of the developer are not satisfactory.
4.21 Land / Roof for the Project

The required land/roof area for setting up the solar project will be provided by the beneficiary department free of cost.

4.22 Clearance of Site on Completion

On completion of installation and commissioning works, the developer/bidder shall clear away and remove from the site all the remaining construction equipment, surplus materials, rubbish and temporary works of every kind, and leave the whole of the site and works of every kind clean and in a workmanlike condition.

4.23 Training of the Personnel

The developer shall train the operator to undertake the work of operation of the solar power plant. Wherever required developer shall assist the plant operator under the expertise of its equipment suppliers so that the persons employed for the operation of the project will have up to date knowledge of the systems.

4.24 Miscellaneous

Storage of consumables, spares & parts, equipments, tools etc., shall be maintained at the site by the bidder at its own cost.

4.25 Judicial Jurisdiction

All disputes arising out of and touching or relating to the subject matter of the Agreement / Contract shall be subject to the jurisdiction of local courts of (Hyderabad) and the High Court of Telangana (Hyderabad).
Section-5

General Technical Specifications

5.1 Type and Quality of Material and Workmanship

The design, engineering, manufacture, supply, installation, testing and performance of the equipment shall be in accordance with the latest appropriate IEC/Indian Standards. The specifications of the components should meet the minimum technical specifications mentioned.

The bidder shall ensure successful maintenance on the solar power plant over a period of 5 years post commissioning of the entire plant. Further, the electricity supplied from the solar power plant shall be within the allowed voltage and frequency range/within the permitted power quality standards.

5.2 Standards

Standard(s) referred to shall mean the current Edition/Revision together with Amendments issued. A list of some of the Standards is given below:

Technical specifications, standards for solar PV system

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<td>Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules</td>
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<td>IEC 61701</td>
<td>Photovoltaic (PV) module performance testing and energy rating –: Irradiance and temperature performance measurements, and power rating</td>
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**Solar PV Inverters:**

1) solar PV inverter shall meet all CEA, statutory and regulatory guidelines applicable till the date of commissioning.

2) Inverters to be equipped with type I+II SPD of minimum 10 KA per Pole.

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<table>
<thead>
<tr>
<th>IEC 60255-27</th>
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<td>General test and measuring method for PVC (Polyvinyl chloride) insulated cables (for working voltages up to and including 1100 V, and UV resistant for outdoor installation)</td>
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<td>BS EN 50618</td>
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<td>IEC 62561 Series (Chemical earthing)</td>
<td>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). Earthing</td>
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shall be complied with IS 3043-1987.

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<th>Junction Boxes</th>
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<td>IEC 60529</td>
<td>Junction boxes and solar panel terminal boxes shall be of the FRP/PC type with IP 65 protection for outdoor use, and IP 54 protection for indoor use</td>
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### 5.2.1 Solar Photovoltaic Modules

a. The Solar PV should be of Mono-Crystalline Silicon of Tier 1 / BIS approved make (own make) with minimum capacity of 325Wp and above wattage. Module capacity less than minimum should not be supplied. The module type must be qualified as per IEC 61215 latest edition. SPV module conversion efficiency should be equal to or greater than 16% under STC. Modules must qualify to IEC 61730 Part I and II for safety qualification testing. Certificate for module qualification from IEC or equivalent to be submitted as part of the bid offer.

b. The PV module shall perform satisfactorily in humidity up to 508% with temperature between 0deg C to + 55deg C. Since the modules would be used in a high voltage circuit, the high voltage insulation test shall be carried out on each module and a test certificate to that effect must be provided.

c. The predicted electrical degradation at the end of the period of 12 years shall not be more than seven (7) per cent of the full rated original output & with not more than 20% degradation in performance/ output over 25 years.

d. Manufacturers/suppliers should confirm that they are supplying PV module which withstands harsh environmental conditions.
e. Other general requirements for the PV modules and subsystems shall be the following:

1. The peak power rating of the Solar PV array under standard Temperature Conditions (STC) shall be equal to the peak power rating of the plant.
2. The PV array shall consist of framed multi-crystalline.
3. Individual PV modules rating should be of a minimum of 325Wp at STC. 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 more than 3(three) percent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
4. Except where specified, the front module surface shall consist of impact-resistant, low iron and high-transmission toughened glass.
5. The module frame, if any, shall be made of corrosion-resistant material that shall be electrolytically compatible with the structural material used for mounting the modules.
6. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for the provision of the by-pass diode.
7. The box shall have hinged, weatherproof lid with captive screws and cable gland entry points or may be of sealed type and IP65 rated.
8. The PV Array shall be designed to match the inverter input specifications.
9. The PV module must have 10 years free replacement guarantee against material defect or craftsmanship.
10. Name of the manufacturer of PV module: name and manufacturer of the solar cell; month and year of manufacture; I-V curve, wattage, Im, Vm, FF for the module; unique serial no & model no; date & year of obtaining IEC PV module qualification certificate are required to be furnished.
11. Warranties:
   Material Warranty;
   • 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 commissioning.

- Defects and/or failures due to manufacturing
- Defects and/or failures due to quality of material.
- 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.

12. 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 7% after twelve years period of the full rated original output.

5.2.2. Module Mounting structure and General Arrangement

a. Suitable method and arrangement of structures to be selected so as to optimize installed capacity. The bidder is responsible to rectify damages if any during the installation of PV panels.

b. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, and nuts and bolts. All support structure material should be of hot dip galvanizing or of Aluminum frame structures with adequate strength and in accordance with relevant BIS/international standards.

c. Structures shall be supplied complete with all members to be compatible with allowing easy installation at the site.

d. The structure should be capable of withstanding a wind load of 150 km/hr after installation.

e. The structures shall be designed for simple mechanical and electrical installation. There shall be no welding requirement or complex machinery at the installation site.
f. The estimated cost is for standard structure height so bidder has to quote as per considering slandered structure height as per prevailing method for ground-mounted structure.

h. The height of the MMS shall be maintained in such a way that PV modules will be at height 1.5 meter from the flood line.

i. The supplier/developer shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings. Such details shall include, but not limited to, the following:

   i) Determination of true south at the site;
   ii) Array tilt angle to the horizontal;
   iii) Details with drawings for fixing the modules;
   iv) Structure installation details and drawings;
   v) Electrical grounding (Earthing);
   vi) Inter-panel/ Inter-row distances with allowed tolerances;
   vii) Safety precautions to be taken.

5.2.3 DC Distribution Box

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

   ii) DC DPBs shall have a sheet from the enclosure of dust & vermin proof conform to IP 65 protection. The bus bars are made of tinned copper of the desired size. Suitable capacity MCBs/MCCB/ DC dis connector with the redundancy of minimum 25% shall be provided. Temperature rise inside the box shall not be more than 10 deg. All the equipment shall not derate upto 70 deg. shall be provided for controlling the DC power output to the PCU along with necessary surge arrestors.

5.2.4 AC Distribution Panel Board

AC Distribution Panel Board (ACDB) shall control the AC power from the inverter, shall be supported by tapping approval from the inverter manufacturer. The supply shall be provided with a changeover switch, and should have necessary surge
arrestors. Interconnection from ACDB to mains at LT Bus bar to be carried out and complete equipment along with metering to be installed in the ACDB. Requirement/specifications of ACDB may be changed as per site conditions. An ACDB to be provided at the cable terminating point emanating from inverter for interconnection control of dedicated electrical loads. All switches at the, circuit breakers, connectors should confirm to IEC 0947, part I, II and III.

5.2.5 Inverter

a) The Inverter continuous power rating shall be above 90% of the total Array Capacity or as per OEM recommendation without violating the guarantee terms.

b) Inverter technical data sheet:
   - The inverter shall continuously control the utility interface within the stipulated range:

     On three Phases side:
     - Output voltage 415(+12.5-20%) VAC
     - Frequency 50Hz (+3 Hz, -3 Hz)
     - Maximum current ripple 3% PP
     - Reactive Power 0.95 inductive to 0.95 capacitive

c) Disconnection, Islanding and automatic reconnection after the grid failure is restored inverter shall have the facility to reconnect the inverter automatically to the grid following the restoration of the grid, subsequent to a grid failure condition. The system should have integrated system control and software for plant control and remote communication with web monitoring to monitor individual strings/MPPT/Inverter.

d) Grid-tide String Inverter Detailed Specifications: Inverter is used to convert DC power produced by SPV modules, in to AC power and adjust the voltage & frequency levels to suit the local grid conditions. The inverter shall interconnect and feed power in synchronization with DG set in the absence of utility supply.

Common Technical Specification:
   - Control Type: Voltage source, microprocessor assisted, output regulation
- Output voltage: 3 phase, 415 V ac (+12.5 %, -20 % V ac)
- Frequency: 50 Hz (-6 Hz, +5 Hz)
- Total Harmonic Distortion: less than 3%
- Inverter efficiency: 98.2 % and above at full load.
- Operation temperature Range: 0 to 55 deg C
- Humidity: 95% Non-condensing
- Other important Features/Protections required in the inverter
  - Automatic morning wake-up and nightly shutdown
  - Mains (Grid) over-under voltage and frequency protection
  - Fool proof protection against islanding.
  - Array ground fault detection.
  - LCD and piezoelectric keypad operator interface Menu driven
  - Automatic fault conditions reset for all parameters like voltage, frequency and/or black out.
  - MOV type surge arresters type I+II with a minimum 10 KA/Pole on AC and DC terminals for over-voltage protection from lightning-induced surges.

e) inverter should be rated to operate at 0 to 55 deg. Centigrade unless provision for air conditioning is included in inverter

f) The inverter should comply with applicable IEC/equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC61683/IS 61683 and IES 60068-2(1,2,14,30)/Equivalent BIS std.

g) The charge controller (if any)/MPPT units environmental testing should qualify IEC 60068-2(1,2,14,30)/Environmental BIS std. The junction boxes/enclosures should be IP65(for out door)/Ip54(indoor) and as per IEC 529 specifications.

h) The inverter 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.

i) The inverters shall be capable of operating in parallel with the grid utility service and shall be capable of interrupting line-to-line fault currents and line-to-ground fault currents.
j) All parameters should be accessible through an industry standard communication link. The inverter shall be self-commutated and shall utilize a circuit topology and components suitable for meeting the specifications listed above at high conversion efficiency and with high reliability. The Inverter shall give the preference to feed the Loads from Solar Energy being produced and shall draw the additional power from mains to meet the load requirements in the case load is more than solar energy being produced.

Conversely, it should feed the solar power to the Grid if the load is less than the solar energy generated. The inverter shall also have the ability for automatic starting, transfer, and no-break transfer to an optional generator for extended grid failure periods.

k) Since the inverter is to be used in the solar photo voltaic energy system, it should have high operational efficiency.

l) In an inverter, there shall be direct current isolation provided at the output by means of a suitable isolating transformer.

m) The inverter output shall be 415 VAC, 50 Hz 3 phase. The inverter shall be capable of operating in parallel with the grid utility service and shall be capable of interrupting line-to-line fault currents and line-to-ground fault currents.

n) The inverter shall be able to withstand an unbalanced output load to the extent of 30%

o) The inverter shall include appropriate self-protective and self-diagnostic features to protect itself and the PV array from damage in the event of inverter component failure or from parameters beyond the inverter’s safe operating range due to internal or external causes. The self-protective features shall not allow signals from the inverter front panel to cause the inverter to be operated in a manner which may be unsafe or damaging. Faults due to malfunctioning within the inverter, including commutation failure, shall be cleared by the inverter protective devices and not by the existing site utility grid service circuit breaker.
p) The inverter shall go to shut down/standby mode, with its contacts open, under the following conditions before attempting an automatic restart after an appropriate time delay; in sufficient solar power output.

- **Insufficient Solar Power Input** - When the power available from the PV array is insufficient to supply the losses of the inverter, the inverter shall go to a standby/shutdown mode. The inverter control shall prevent excessive cycling during rightly shut down or extended periods of insufficient solar radiation.

- **Utility-Grid Over or Under Voltage** - The inverter shall restart after an over or under voltage shutdown when the utility grid voltage has returned to within limits for a minimum of two minutes.

- **Utility-Grid Over or Under Frequency** - The inverter shall restart after an over or under frequency shutdown when the utility grid voltage has returned to the within limits for minimum of two minutes.

- The inverter generated harmonics measures at the point of connection to the utility services when operating at the rated power shall not exceed a total harmonic current distortion of 3 percent, a single frequency current distortion of 3 percent and single-frequency voltage distortion of 1 percent, when the first through the fiftieth integer harmonics of 50 Hz are considered.

- The high voltage and power circuits of the inverter shall be separated from the low voltage and control circuits. The internal copper wiring of the inverter shall have flame-resistant insulation. The use of PVC is not acceptable. All conductors shall be made of standard copper.

- The inverter shall withstand a high voltage test of 2000 V rms, between either the input or the output terminals and the cabinet (chassis).

- Full protection against accidental open circuit and reverse polarity at the input shall be provided.

- The inverter shall not produce Electromagnetic Interference (EMI) which may cause malfunctioning of electronic and electrical instruments including communication equipment, which are located within the facility in which the inverter is housed.

- The inverter shall have an appropriate display on the front panel to display the
instantaneous AC power output and the DC voltage, current and power input. Each of these measurement displays shall have an accuracy of 1 percent of full scale or better. The display shall be visible from outside the inverter enclosure. Operational status of the inverter, alarms, trouble indicators and ac and the dc disconnect switch positions shall also be communicated by appropriate messages or indicator lights on the front cover of the inverter enclosure.

m) Integration of PV Power with Grid:

The output power from SPV would be fed to the inverters which convert DC produced by SPV array to AC and feed 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 Mains comes into service PV system shall again be synchronized with Mains 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 connection needs to be provided.

5.2.6 Data Acquisition System / Plant Monitoring

This unit should perform the following:

- Individual Array monitoring
- Measurement and/or recording of energy parameters.
- Simple data logger or energy meter to record the energy data on a predetermined interval basis.
- Measurement & continuous acquisition of ambient air temperature, solar radiation, PV module temperature, individual string current, inverter output voltage and current, the output frequency
- Operating state monitoring and failure indication- Representation of monitored data’s in graphics mode or in tabulation mode.
- Controlling & monitoring the entire power system through remote a local terminal.
- Necessary hardware & software shall have to be supplied by the successful bidder. Both the software and hardware required for interfacing the plant
including modems, Printers, UPS. Cellular devices are to be supplied and installed by the successful bidder.

- Remote control/ Instrumentation: The microprocessor control unit should have the provision for installation of RS 232/485 communication link, should have control and monitoring capability (by personal computer) be desired. All parameters, status and indicators and targets accessible through the local operator interface may be accessed remotely through these ports. Optional analog outputs (0-5VDC) for AC powers, DC current, DC Voltage can be supplied to interface with external data acquisition systems. Optional contacts inputs from an external SCAD/RTU or other remote control device can be provided within the inverter enclosure for remotely disabling or resetting the unit.

5.2.7 Lightning Protection

- Complete PV plant array area, all the inverter stations and the control rooms shall be protected from lightning. The protection system will be based on early streamer emission lightning conductor air terminals. The air terminals shall provide an umbrella protection against direct lightning strike covering a radial distance shall be at level IV (minimum 107m) or as per sites requirement. The air terminal shall be capable of handling multiple strikes of lightning current and should be maintenance free after installation. Lightning arrester provided within PV plant area shall be located such that there is no shading effect on PV modules during effective sunshine hours typically from 9am to 4pm.

- Earthing stations for the lighting discharges shall be provided with clamps, fasteners, conductors and test links of phosphorus bronze and located at 200mm above ground level in an easily accessible position for testing.

- The Code of practice shall be as per latest IEC standard for protection of building and allied structures and NFC 17-102 2011 edition for Early Streamer Emission lightning protection. 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.
5.2.8 Surge Protection

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

5.2.9 Earthing Protection

PV array, DC equipment, Inverter, AC equipments and distribution wiring shall be earthed as per IS:3043-1987. Each array structure of the PV yard should be grounded properly at a minimum 2 locations. In addition the lighting arrester/masts should also be provided inside the array field. Provisions should be kept be provided inside the array field. Provision should be kept for shorting and grounding of the PV array at the time of maintenance work. All metal casing/shielding of the plant should be thoroughly grounded in accordance with the Indian electricity Act./IE Rules.

5.2.10 Grid Islanding

Disconnection of the PV generator in the event of loss of the main grid supply is to be achieved by in built protection within the power conditioner. This may be achieved through the rate of change of current, phase angle, unbalanced voltage or reactive load variants. Operation outside the limits of power quality as described in the technical data sheet should cause the power conditioner to disconnect the grid. In case of the above, the tripping time should be less than 0.5 seconds. Response time in case of grid failure due to switch off or failure based shut down should be well within 5 seconds. In case of use of two or more Inverters of total capacity, suitable equipment for synchronizing the AC output of both the Inverters to the ACDB/Grid should be provided.

Automatic reconnection after the grid failure is restored: Inverter shall have the facility to reconnect the inverter automatically to the grid following the restoration of the grid, subsequent to a grid failure condition. The system should have integrated system control and software for plant control and remote communication with web monitoring to monitor individual strings and complete power plant from Inverter.

5.2.11 Cables
a) Cabling in the yard and control room: Cabling in the yard shall be carried out as per IE Rules.

b) Wires: Only FRLS copper wires of appropriate size and of reputed make shall have to be used.

c) Cables Ends: All connections are to be made through suitable cable/lug/terminals; crimped properly & with use of Cable Glands.

d) Cable Marking: All cables/wires are to be marked in a proper manner by good quality ferule or by other means so that the cable can be easily identified. Any change in cabling schedule/sizes if desired by the bidder/supplier be got approved after citing appropriate reasons. All cable schedules/layout drawings have to be got approved from the purchaser prior to installation. All cable tests and measurement methods should confirm to IEC 60189.

e) Multi Strand, Annealed high conductivity copper conductor

   - PVC type ‘A’ pressure extruded insulation
   - Overall PVC insulation for UV protection and confirm to IEC 69947
   - Armored cable for underground laying
   - All cables shall conform to BIS standards (IS 694) and (IS 1554)
   - The size of each type of cable selected shall be based on minimum voltage drop, however, the maximum drop shall be limited to 2%
   - Selected cable should carry a current density of a minimum 1.2Amp/Sq.mm.
   - All electrical cables/wires inside the building to be fixed in Rigid Steel Conduit for wiring inside the building. Proper laying of cables have to be ensured in appropriate cable trays, pipes / trenches as per site requirement.
   - For laying / termination of cables, the latest BIS / IEC codes / standards be followed.

5.2.12 Electrical Safety, Earthing protection:

   Electrical safety:
• Internal Faults: In built protection for internal faults including excess temperature, commutation failure, overload and cooling fan failure (if fitted) is obligatory.

• Over Voltage protection: Over Voltage Protection against atmospheric lightning discharge to the PV array is required. Protection is to be provided against voltage fluctuation and internal faults in the power conditioner, operational errors and switching transients.

• Earth fault supervision: An integrated earth fault device shall have to be provided to detect eventual earth fault on DC side and shall sent message to the supervisory system.

• Cabling practice: Cable connections must be made using PVC Cu cables, as per BIS standards. All cable connections must be made using suitable terminations for effective contract. The PVC Cu cables must be run in Gl trays with covers for protection.

• The Inverters shall include an easily accessible emergency OFF button located at an appropriate position on the unit.

• The inverters shall include ground lugs for equipment and PV array grounding.

• All exposed surfaces of ferrous parts shall be thoroughly cleaned, primed, and painted or otherwise suitable protected to survive a nominal 30 years design life of the unit.

• The inverter enclosure shall be weatherproof and capable of surviving climate changes and should keep the inverter intact under all conditions in the room it will be housed. The Inverter shall be located indoor and should be either wall/pad mounted. Moisture condensation and entry of rodents and insects shall be prevents in the PCU enclosure.

• Components and circuit boards mounted inside the enclosures shall be clearly identify with appropriate permanent designations, which shall also serve to identify the items on the supplied drawings.

• All doors, covers, panels and cable exits shall be gasket or otherwise designed to limit the entry of dust and moisture. All doors shall be equipped with locks. All openings shall be provided with grills or screens with opening no longer that 0.95 cm. (about 3x8inch)
In the design and installation of inverter the site temperature (5-55deg C),
incident sunlight and the effect of ambient temperature on component life
shall be considered carefully.

Similar consideration shall be given to the heat sinking and thermal for
blocking diodes and similar components.

5.2.13 Connectivity:

The maximum capacity for inter connection with the grid at a specific voltage level
shall be as specified in the Distribution Code/Supply Code of the state and
amended from time to time.

5.2.14 Miscellaneous

- Proposed tentative BOM indicating major components shall be submitted
- Two copies of engineering, electrical drawings including detailed SLD are to be supplied.
- All items against which no make has been mentioned must confirm to ISI standards
- For complete electro-mechanical works, Bidders shall supply complete
design, details, and drawings for approval by PMC before progressing with
installation work.

5.2.15 SCADA and Remote Monitoring System

- The Bidder shall ensure that the Facility at all times:
  a. Have SCADA installation/ any other continuous communication facility for
     transferring the data of Solar Energy generated from the Facility"s switchyard /
     MSEDCL Substation to the State Grid"s Sub-Station / Control room;
  b. Have installed Special Energy Meter (SEM) with telecommunication facility
     with availability-based tariff (ABT) feature as per relevant CEA specifications/
     regulations as may be applicable.

5.3 Drawings/Documents/Manuals

- 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 the basic design of the power plant and power evacuation, synchronization along protection equipment.

- Approved ISI and reputed makes for equipment be used.
- For complete electro-mechanical works, Bidders shall supply complete design, details, and drawings for approval to TSIIC before progressing with the installation work.

5.4 Spare Parts, Tools and Site Consumables

5.4.3 Spare Parts

All the spare parts supplied shall be of the same material / workmanship and interchangeable with the corresponding parts of the executed work, protected against corrosion and marked Approved with identification labels. Spare parts supplied shall not be given to the subcontractors for use during erection and commissioning for replacing the defective or damaged original components of his supplies of works.

The developer/bidder shall maintain adequate types of bolts, screws, nuts, fuse wires, cables, conductors, consumables, etc.

5.4.4 Fire Extinguishers

- The fire-fighting system for the proposed power plant for fire protection shall be consisting of:
  - Portable fire extinguishers in the control room for fire caused by electrical short circuits
  - Sand buckets in the control room
  - The installation of Fire Extinguishers should conform to TAC regulations and BIS standards. The fire extinguishers shall be provided in the control room housing PCUs as well as on the site where the PV arrays have been installed.

5.5 Manufacturing Requirements

5.5.3 Materials
Materials used, shall be new and of first-class quality free from rust, defects and imperfections. Inspection records of all materials shall be compiled before actual use. The bidder shall maintain the inspection records of materials of major components. Materials of limited shelf life shall not be used after their expiry date.

5.6 Electrical Works

5.6.1 General

- All components shall be of the approved design.
- Works shall be pre-assembled to the extent possible in the contractor’s workshop complete with all devices, and wired up to common terminal blocks.
- Short-circuit calculations shall be evaluated, giving full evidence that every electrical component can withstand the maximum stresses under fault conditions, for fault levels and durations under the worst conditions. All Works shall be suitable for the prevailing climatic conditions.

5.6.2 Clearances

Clearances shall be provided as per the Indian Electricity Rules and Standards for ready access for O & M whilst the remaining sections of Equipment are alive.

5.6.3 Terminal Boxes and Earthing

The terminal leads, terminals, terminal boxes and associated equipment shall be suitable for terminating the respective type of cables and meeting the technical standards and specifications. Terminal boxes should be properly earthed.

5.6.4 Control Panel Wiring

- All wiring connections shall be readily accessible and removable for test etc. Wiring between terminals of the various devices shall be the point to point.
- Multi-conductor cables shall be connected to the terminal blocks in such a manner as to minimise crossovers. Approved claw washers of crimp type connector shall be used to terminate all small wiring. Each conductor shall be
individually identified at both ends through a system providing ready and permanent identification, utilising approved slip-on ferrules.

- Markers may be typed individually or made up from sets of numbers and letters firmly held in place. Open markers will not be accepted. These must withstand atropical environment and high humidity and only fungus proof materials will be accepted. Ferrules of adhesive type are not acceptable.

5.6.5 Cubical and Control Panel

- Cubicles/control panel enclosures shall be of sheet steel (minimum thickness: 2.5 mm), rigid, self-supporting construction and supplied with channel bases.
- Fitted with close-fitting, gasketted, hinged, lift-off doors capable of being opened through 180 deg. The doors shall have an integral lock and master key.
- Cubicles/panels shall be vermin proof. Removable gland plates shall be supplied and located to provide adequate working clearance for cable terminations. Cables and wiring shall enter from bottom or top as Approved. Instruments, control knobs and indicating lamps shall be flush mounted. Relays and other devices sensitive to vibration shall not be installed on doors or hinged panels, and no equipment shall be installed on rear access doors.

5.6.6 Earthing

- Provision shall be made for earthing all equipment. All structural metal work and metal chassis shall be connected to the earth.
- Earthing conductors shall be at least equal in cross-sectional area to the supply conductors and capable of carrying the fault current.
- Earthing shall be carried out confirming the relevant IS and electrical Inspectorate requirements.
- Proper concrete chamber and chamber cover shall be provided for each earthing and the value of earth resistance should be displayed.
- Separate earthing shall be provided for system earthing and LA earthing
- AC / DC earthing shall be provided separately or can be interconnected as per the inverter manufacturers specifications/suggestions
• All the MMS, Battery bank, inverter, AJB etc. shall be have fixed earthing with an earthing strip
• SCADA, CCTV, and any other communication systems, LA shall be provided special earthing.
• Chemical earthing shall be as per IEC 62561 Series (Part 1,2)
• Number of earthing shall be as per the installed capacity of the solar PV system

5.6.7 Labels and Plates

• Labels of approved material, size, lettering and arrangements shall be provided for all instruments, relays, control switches, push buttons, indication lights, breakers, etc. No levels are required if the function is indicated on the device.
• Instruction plates in the Contract and selected local language, the sequence diagrams or instructions for maintenance shall be fitted on the inside of the front door of the electrical switchboards.
• Information display containing the project capacity, no of beneficiaries, name of the developer, Name of TSIIC and funder should be displayed at a prominent location.

5.6.8 Warning Labels

• Warning labels shall be made of synthetic resin with letters engraved in the Contract and selected local language as Approved.
• For indoor circuit breakers, starters, etc., a transparent plastic material with suitably contrasting colors and engraved lettering would be acceptable.

5.6.9 Labels for Cables

• Each cable shall have approved non-corrosive labels detailing the identification number of the cable, voltage, and conductor size permanently attached to each end.

5.6.10 Single Line Diagrams
• The control room shall be furnished with a copy of the final as-built single-line diagram detailing all electrical data and denominations, separate for each individual switchgear/distribution board/MCC.

5.6.11 Key System for Electric Boards/Control Panels

• The LOTO systems have to be provided for the ACDB.

5.7 Instrumentation and Control Equipment

General

• The Works shall be pre-assembled to the extent possible in the contractor's workshop.
• All instrumentation and control functions shall be shown on the piping and instrumentation diagrams. Symbols to be used shall be as per ISO Standards and Identification system (tag numbers) as per the Approved Works identification system.
• Shielded cables shall be used for the control and supervisory equipment.

Sizes of Indicators, Recorders, Etc.

• Meters, instruments and recorders shall be of standard size. The front glasses shall be anti-glare type.

Tests

• Single components and pre-erected assemblies shall undergo functional and routine tests in the contractor's workshop. Ready mounted control and the supervisory system shall undergo functional tests on Site. Calibration tests shall be made on all important pressure gauges and other instruments.

Measuring Systems

• Measuring ranges of indicators, transducers, etc. shall be selected in such a way that the rated value of the measured magnitude covers approx. 75% of the range. All local instruments shall, as far as practicable, be mounted vibration-free. Wherever required, damping elements shall be used.
• Weather monitoring system and equipment’s required to undertake PR testing shall be provided and the data of the same should be made available on the web-based platform. The PR and other parameters should be made available on real-time basis.

5.8 Erection and Commissioning

Operational Tests

• As far as practicable, the operational tests shall be carried out on all Works, simulating operating conditions.
• Parts to be delivered by sub-contractors shall be tested either at the premises of the sub-contractor or by the developer, as approved. Site Inspection and Tests
• During an erection, commissioning and trial run, the developer/bidder shall perform all inspections and tests in the presence of the representatives of TSIIC
• Unless otherwise specified, all costs for testing at site and of the works and charges associated with it shall be borne by the developer/bidder. The developer/bidder shall delegate his experts to perform the tests at the site.

Commissioning Tests

• Commissioning tests shall be carried out with standard procedures and practices on all generating units and other equipment to verify their rating characteristics. Field acceptance test reports shall be prepared by the developer/bidder and submitted to TSIIC for approval.

5.9 Operation and Maintenance (O&M):

• Cleaning of solar PV modules with soft water, wet and dry mops: Weekly
• DC string/Array and AC Inverter monitoring: Continuous and computerized.
• AC Energy monitoring: Continuous and computerized.
• Visual Inspection of the plant: Regularly
• Functional Checks of protection components and switchgear: Regularly
• Spring Clean PV array and Installation area: Regularly
• Inverter, transformer, data acquisition, energy meters and power evacuation checks: Regularly.
The support structural and terrace water proofing checks: Regularly
O&M log sheet shall be provided and maintained.
The repair/replacement work shall be completed within 48 hours from the
time of reporting fault.
A monthly performance report of the plant inclusive of energy generation
data shall be provided as per approved format.
All recorded data for the first 5 years shall be preserved in the both manual
and computer format and submitted at hand over.

5.10 Comprehensive Maintenance Contract (CMC):
The complete solar PV power plants must be guaranteed against any
manufacturing/design/installation defects for a minimum period of 5 years.
PV modules used in Solar PV Power Plant must be guaranteed for their
output peak watt capacity, which should not be less than 90% at the end
of 12 years and 80% at the end of 25 years.

5.11 Warranties and Guarantees:
Solar Modules: Workmanship/product replacement for 10 years.
Solar Modules: 90% power output for 10 year & 80% power output for 25
years.
Inverter: workmanship/product replacement for 5 years, service for 25 years
Power Evacuation and Metering Equipment: Workmanship/product
replacement for 10 years, service for 25 years
BoS: Parts and Workmanship for 10 years, service for 25 years
Power Plant Installation: Workmanship for 10 years, service for 25 years
PV Array Installation: structural for 25 years
Power plant power performance ratio-min 75%
Power plant energy performance ratio-min 75%

*****
Annexure -1: Format for Submission of Technical BID

To: The Chief Engineer,
Telangana State Industrial Infrastructure Corp. Ltd.
Parishrama Bhavan, Basheerbag,
Hyderabad, Telangana State.

Dear Sir,

Sub: Submission of technical bid for “Design, Engineering, Supply, Installation, Testing, Commissioning with 5 Year CMC for Aggregate 1.5 MW Grid Interactive Solar PV project at e-cty, Raviryala(V), Maheshwaram(M), Ranga Reddy Dist in Telangana State

Ref: RFP No. /CE/TSIIIC/2020-21 Dated: 07.2020

We, (M/s. ---name of bidder) are submitting the technical bid for undertaking the above captioned work. We have examined the tender document and understood the scope of work very well. We are hereby submitting following information:

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>Name of the Bidder</td>
</tr>
<tr>
<td>2</td>
<td>Address with Pin code</td>
</tr>
<tr>
<td></td>
<td>Correspondence Address</td>
</tr>
<tr>
<td>3</td>
<td>Phone Number</td>
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<tr>
<td>4</td>
<td>Fax Number</td>
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<tr>
<td>5</td>
<td>Email</td>
</tr>
<tr>
<td>6</td>
<td>Status- Company/Society/NGO/Association/others (enclose necessary documents)</td>
</tr>
<tr>
<td>7</td>
<td>TSREDCO Registration (enclose necessary documents)</td>
</tr>
<tr>
<td>8</td>
<td>Permanent Account No.(PAN) (enclose necessary documents)</td>
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<tr>
<td>9</td>
<td>GST No. (enclose necessary documents)</td>
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</tr>
<tr>
<td>10</td>
<td>Name of Contact Person</td>
</tr>
</tbody>
</table>
| 11 | Telephone No(s).  
  Email |
| 12 | Bank Details for Electronic Payment  
  Name of the Bank:  
  Address of Branch:  
  Account No.:  
  IFS Code:  
  Type of Account: |
| 13 | 9 digit MICR code printed at the bottom,  
  next to cheque no. |
| 14 | IFSC (for RTGS)/NEFT Code of the Bank |
| 15 | Proposed capacity  
  1.5 MW Grid Interactive Solar PV  
  Project at e-city, Raviryal(V),  
  Maheshwaram(M), RR Dist,  
  Telangana. |
| 16 | Brief information of past activities carried  
  out showing expertise in undertaking such  
  similar assignments |
| 17 | Total turnover in  
  FY 2018-19  
  FY 2017-18  
  FY 2016-17  
  (enclose necessary documents) |
| 18 | Detailed Technical Description of the  
  proposed Solar PV Ground Mounted Grid  
  Connected System with relevant drawings  
  (Plant layout, SLD) and Typical  
  specification Sheet for ...... MW SPV Plant including IEC  
  certificate of solar module. |
We hereby declare that
1) the above information is true and correct
2) Our Tender shall be valid for a period of 90 days from the date of opening of the technical bid in accordance with the Tendering Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
3) All the documents submitted in the tender should be original and true, and we are aware that in case, duplicate and fraudulent documents are submitted by us; Managing Director, TSIIC reserves all rights to reject the bid and take appropriate action against us.
4) If our Tender is accepted, we commit to furnish a bank guarantee of Rs --- within allotted time.
5) We offer to execute the work in conformity with the Bid documents

Date:....................  (Signature)......................................................

Place:..................

(Name)...........................................................………….
(Designation)............................................................
(Common Seal)........................................................................
Annexure- 2: Format for submission of Financial Bid

To: The Chief Engineer,
Telangana State Industrial Infrastructure Corp. Ltd,
Parishrama Bhavan, Basheerbag,
Hyderabad, Telangana State.

Dear Sir,

Sub: Submission of technical bid for “Design, Engineering, Supply, Installation, Testing, Commissioning with 5 Year CMC for Aggregate 1.5 MW Grid Interactive Solar PV project at e-cty, Raviryal(V), Maheshwaram(M), Ranga Reddy Dist in Telangana State

Ref: RFP No /CE/TSIIC/2020-21 Dated: 07.2020

We, the undersigned [insert name of the ‘Bidder’] …………………………having read, examined and understood in detail the BID Document for Implementation of the above-mentioned project and hereby submit our price bid for executing the solar power project.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Description of Items</th>
<th>Total Price excluding GST (Rs)</th>
<th>Total Value of GST (Rs)</th>
<th>Total Price including GST (Rs)</th>
<th>Total Price including GST (in words)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Design, Engineering, Supply, Installation, Testing, Commissioning 1.5MW Grid Interactive Solar PV project with 5 Year CMC Under Net metering Scheme at ________ (1500 kW )</td>
<td>3</td>
<td>4</td>
<td>5=3+4</td>
<td></td>
</tr>
</tbody>
</table>

Note:
1. The above-mentioned price will be released as per the terms given in the Tender Document.

2. Conditional proposal shall be summarily rejected.

3. In the event of any discrepancy between the values entered in figures and in words, the values entered in words shall be considered.

4. This offer shall remain valid for a period of entire completion and successfully commissioning of work.

5. Maximum allowed tender percentage is 5% excess over ECV.

6. Tenders with an excess of above 5% of the estimated contract value shall be summarily rejected.

Yours faithfully,

(Signature)……………………………………………………………..

(Name)………………………………………………………………

Organization Name .............................

Address and Seal.................................
Annexure- 3: Power of Attorney

(To be on non-judicial stamp paper of appropriate value in accordance with Stamp Act relevant to place of execution)

Know all men by these presents, We ..............................................................
(name and address of the registered office of the Developer) 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 “Design, Engineering, Supply, Installation, Testing, Commissioning with 5 Year CMC for Aggregate 1.5MW Grid Interactive Solar PV project at e-city, Raviryala(V), Maheshwaram(M), Ranga Reddy Dist in Telangana State Under Net Metering Scheme in the State of Telangana.” in response to the BID issued by TSIIC (RFP No CE/TSIIC/2020-21 Dated: 07.2020), 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 TSIIC may require us to submit. The aforesaid Attorney is further authorized for making representations to the TSIIC, Hyderabad and providing information / responses to TSIIC, Hyderabad representing us in all matters before TSIIC, Hyderabad and generally dealing with TSIIC, Hyderabad in all matters till the completion of the bidding process as per the terms of the above mentioned Tender Document.

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 BID document.

Signed by the within named

(Insert the name of the Developer)
through the hand of
Mr. ... (Name of the authorized person) 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. Name & Signature .........................

2. Name & Signature .........................

Annexure-4: Deviation Schedule
To

The **Chief Engineer**,  
Telangana State Industrial Infrastructure Corp. Ltd,  
Parishrama Bhavan, Basheerbag,  
Hyderabad, Telangana State.

Dear Sir,

We declare that the following are the only deviations and variations from and exception to the specifications contained in bid document No. CE/TSIIC/2020-21 Dated. 07.2020 for Design, Engineering, Supply, Installation, Testing, Commissioning with 5 Year CMC for Aggregate 1.5MW Grid Interactive Solar PV project at e-cty, Raviryala(V), Maheshwaram(M), Ranga Reddy Dist in Telangana State under Net Metering Scheme.

The schedule has been filled, except these deviations subject to approval and acceptance by TSIIC. The entire work shall be performed as per your specifications and documents. Further we agree that additional conditions if any found elsewhere in our offer other than those stated below, shall not be given effect to.

<table>
<thead>
<tr>
<th>Clause No.</th>
<th>Reason</th>
<th>Page</th>
<th>Statement of variation and deviation</th>
</tr>
</thead>
</table>

Signature and seal of the bidder
Note: Use additional sheets of the format, if required.

Annexure 5: Proforma of Bank Guarantee Towards Performance Guarantee

(To be on non-judicial stamp paper of appropriate value in accordance with Stamp Act relevant to place of execution)

To

The Chief Engineer,
Telangana State Industrial Infrastructure Corp. Ltd,
Parishrama Bhavan, Basheerbag,
Hyderabad, Telangana State.

Ref: Contract no. ……………………………………………………………………………………
dated ........
For………………………………………………………M/s…………………………………….of...
………………(hereinafter called “the developer”) have been awarded the contract for……………..……………………………….. by Telangana State Industrial Infrastructure Corp. Ltd, (TSIIC), Hyderabad. The conditions of the contract aforesaid provide inter alia that the developer shall pay the TSIIC a sum of Rs. ............. (Rupees................only) as performance guarantee in their form and manner and subject to the terms therein mentioned. The form of payment of performance guarantee includes a guarantee executed on behalf of and at the request of the developer, by our nationalized bank undertaking full responsibility to indemnify TSIIC in case of default.

The said developer has approached us and at their request and in consideration of the promises we……………….[Name of Bank] having our office at……………….[Address of Bank]having agreed to and hereby give such guarantee as is hereinafter mentioned in your favour.

1.
We…………………………………………………………of………………………………………
………………(hereinafter called “the bank”) do hereby unconditionally and irrevocably
guarantee to you the due payment of the said sum of Rs....................... (Rupees ..................................only) by the developer to you in terms of the said conditions of contract and their due performance of the obligations in this behalf and undertake and agreed with you that if default shall be made by the developer in performing any of the terms and conditions of the contract or in payment of any money payable to you i.e. TSIIC shall be the sole judge and its decision communicated to us in this regard shall be final and conclusively binding on us, it shall not be opened to ask you reasons/details in this regard and we shall have no right to question the same or make reference to the developer in any manner whatsoever and we shall on mere .............................. first demand pay to you without demur and / or protest and without notice or reference to the developer bydemand draft payable at Hyderabad a sum of Rs. .........................such portion thereof not exceeding the said sum as you may from time to time require/demand and you can look to us as the principal debtor. 2. You will have the full liberty without reference to us and without affecting this guarantee, postpone for any time or from time to time the exercise of any of the powers and rights conferred on you under the said contract with the said developer and to enforce or to forbear from enforcing any powers or rights or by reason of time being given to the said developer which under law relating to the sureties would but for the provision have the effect of releasing us. Any such time/indulgence/forbearance and/or any act or omission or commission on your part will not vitiate our guarantee.

3. Your right to recover the said sum of Rs. ......................(Rs..........................only) from us in the manner aforesaid will not be affected or suspended by reason of the fact that any dispute(s) are pending before any officer, tribunal or court or arbitrator(s)/umpire.

4. The guarantee herein contained shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the said developer but shall in all respects and for all purpose be binding and operative until full payment is received by you as if this is a continuing guarantee to secure your ultimate dues in the premises.
5. We have power to issue this guarantee in your favour under memorandum and articles of association and the undersigned has full power to do under the power of attorney dated ............... granted to him by the Bank.

6. We will have no right of subrogation against the developer unless all your dues as aforesaid are paid in full. We do hereby waive our rights of surety ship, which are inconsistent with all or any provisions hereof.

7. You will be at liberty to alter the terms and conditions of the said contract and/or to take any other security/guarantee/promissory notes from the developer of others which will not affect/vitiate/discharge our guarantee.

8. The guarantee will bind our successors and assigns and will remain operative irrespective of any change in this constitution of our bank and/or the developer.

9. Our liability under this guarantee is restricted to Rs. ...................... and this guarantee shall remain in force till ..................and unless a claim to enforce the guarantee is filed with us within six months from the date of expiry hereof all your rights under the said guarantee shall be forfeited and we shall be relieved and discharged from all liabilities there under.

Yours faithfully,

....................Bank

by its constituted attorney

Signature of a person duly authorised
to sign on behalf of the bank
Annexure-6: Draft Contract Agreement

This agreement, made this________ day of_______ 2020, between Telangana Industrial Infrastructure Corporation Ltd, (TSIIC) having its office at, __________________________, Hyderabad, Telangana. (hereinafter referred to as “TSIIC”) of the one Part and __________________________ (name and address of selected developer) (hereinafter referred to as “Developer”) of the other Part.

Whereas, TSIIC has published the (Tender No…………..date…………) for selection of developer for “Design, Engineering, Supply, Installation, Testing, Commissioning with 5 Year CMC for Aggregate 1.5 MW Grid Interactive Solar PV project at …………………….. under Net Metering Scheme

AND

Whereas, the developer has participated in the above referred bidding process and submitted its bid and subsequently TSIIC selected the developer for the development of said project under the terms and conditions as contained in this contract document.

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the ‘Contract Documents’ hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.

2. Contract Documents: The contract shall be performed strictly as per the terms and conditions stipulated herein and also following documents shall be deemed to form and be read and construed as part of this Agreement

a. Tender issued by TSIIC (including any further clarifications/ amendments issued by TSIIC in this regard)

b. Bid submitted by the Developer
3. For administrative purposes ......................[Name/Designation of responsible staff of TSIIC] has been assigned to administer the project and to provide the Developer with all relevant information needed to carry out the assignment.

4. This agreement, its meaning and interpretation and the relations between the parties shall be governed by the Laws of Union of India.

5. Developer shall commission the solar power project of 1.5MW on or before 120 days from date of award of contract. Additional time of 3 months shall be granted for getting the net metering agreement signed with TSSPDCL. List of project locations and MW capacity is enclosed. Time schedule shall be strictly adhered to and the Developer shall plan and perform the work in accordance to the time schedule as agreed by TSIIC.

6. This agreement will become effective upon signing of this agreement by both parties. The developer will complete the work of Design, Engineering, Supply, Installation, Testing, Commissioning with 5 Year CMC for Aggregate 1.5 MW Grid Interactive Solar PV project at e-cty, Raviyala(V), Maheshwaram(M), Ranga Reddy Dist in Telangana State. It is binding on the developer to maintain the solar project as specified in Bid document for a period of 5 years from the date of commissioning. The price shall be disbursed to the developer as per the methodology specified in clause 8 of this agreement. In case the developer failed to maintain the project up to the agreed period of 5 years, TSIIC shall recover the amount on pro-rata basis from the developer by adopting appropriate measures. The TSIIC decision in this regard will be final and binding on the developer.

7. The developer has to Design, Engineer, Supply, Install, Test, Commission & Maintain the Grid Interactive Solar PV project for 5 years as per the technical specifications proposed in the bid document or with the proposed deviations duly accepted by TSIIC for setting up of this project. The developer shall execute the work as per the technical specifications, drawings and bill of material submitted by him on receipt of the LoI. Developer shall maintain the plant for 5 years from the date of commissioning. During the maintenance period developer shall undertake cleaning of solar modules with minimum 15 days cleaning cycle or less as per the soiling condition at site. Developer shall submit quarterly generation report and
maintenance activities undertaken by him as a quarterly reporting within 10th day of start of new quarter.

8. The developer shall request TSIIC through written form for releasing the appropriate price value for each stage of payment. The written request should accompany all the necessary documents as given in the terms and conditions for the release of payment in the ‘contract documents’. After scrutinizing the performance of the project, TSIIC will release the payment, as per payment terms & conditions as mentioned in Tender document.

9. The Developer will be responsible for appropriate insurance coverage. In this regard, the Developer shall maintain worker’s compensation, employment liability insurance for their staff. The Developer shall also maintain comprehensive general liability insurance, including contractual liability coverage adequate to cover the indemnity of obligation against all damages, costs, and charges and expenses for injury to any person or damage to any property arising out of, or in connection with, the services which result from the fault of the Developer or its staff. The Developer shall provide the TSIIC with certification thereof upon request.

10. The Developer shall indemnify and hold harmless the TSIIC against any and all claims, demands, and/or judgments of any nature brought against the TSIIC arising out of the activities by the Developer and it's staff under this Contract. The obligation under this paragraph shall survive the termination of this Contract.

11. The developer shall provide periodic review report of the project, as given in the ‘contract agreement’, on mutually agreed format to TSIIC. Also as when requested by TSIIC, the developer shall provide the project related information.

12. The Developer shall ensure access to and all other assistance for the inspection of the sites and works by TSIIC and/or its nominee(s)/Officers/ authorized 3rd party any time before and/or after the work is started during its execution and after the works are completed for the entire duration of the project.

13. Any dispute arising out of the Contract, which cannot be amicably settled between the parties, shall be referred to adjudication/arbitration in accordance with Arbitration & Conciliation Act 1996.
14. This Agreement may only be amended or supplemented by a written agreement between the Parties.

15. All agreements, correspondence and communications between the Parties relating to this Agreement and all other documentation to be prepared and supplied under the Agreement shall be written in English, and the Agreement shall be construed and interpreted in accordance with English language. If any of the agreement, correspondence, communication or document is prepared in any language other than English, the English translation of such agreements, correspondences, communications or documents shall prevail in matters of interpretation.

16. Any notice to be served on the either party shall for the purpose of these presents be deemed to be sufficiently served, if it is left at Registered Office as mentioned in the preamble of the Agreement, and such notice shall also be deemed to be properly and duly served if it is sent by registered post to such address as aforesaid, and such service shall be deemed to have been made at the time at which the Registered letter would in the ordinary course be delivered even though returned unserved on account of refusal of the party to accept such notice or any other reason whatsoever.

In witness whereof the Parties thereto have caused this Agreement to be executed by their duly authorized representatives on the date day and year contained on the first page.

Signed by the within named

1. ……………………………………………………………
(Signature and Name of the authorized person duly of the Developer)
on behalf of ………………………………………..(Insert the name of the Developer)

Dated this ………………………………… day of …………………

2. ……………………………………………………………
(Signature and Name of authorized representative of TSIIC) on behalf of Telangana Industrial Infrastructure Corporation Ltd, Government of Telangana, Hyderabad
Dated this ........................................... day of ......................

Common seal of ............................. has been affixed pursuant to Board of Director’s Resolution dated.............

WITNESS

1. ................................................................. (Signature)
   Name............................................................
   Designation ..............................................

2. ................................................................. (Signature)
   Name............................................................
   Designation ..............................................
Annexure-7: Site Visit Report Letter
(To be submitted on letterhead of bidder)

To

The Chief Engineer,

Telangana State Industrial Infrastructure Corp. Ltd,
Parishrama Bhavan, Basheerbag,
Hyderabad, Telangana State.

Dear Sir,


Ref: RFP No. /CE/TSIIC/2020-21 Dated: 07.2020&

This has reference to above referred tender for Design, Engineering, Supply, Installation, Testing, Commissioning with 5 Year CMC for Aggregate 1.5 MW Grid Interactive Solar PV project at e-cty, Raviryalala(V), Maheshwaram(M), Ranga Reddy Dist Under Net Metering Scheme in the State of Telangana.

I / We hereby declare that we have visited site and enclosing the survey form duly signed by the representative of the consumer.

I / We made ourselves acquainted with site conditions, approach to site, requirement of land, soil conditions, availability of water, requirement of tender conditions etc.

I / We verified all details required to execute the projects. I / We have no problems in undertaking the projects and complete them in the given time period as per required specification & terms and conditions of the tender.

Thanking you,

Yours faithfully,

(Signature of Bidder)

Name of Bidder ---------------

Designation ------------------
**Survey Form**

<table>
<thead>
<tr>
<th>Name of the Dept.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location &amp; Address</td>
</tr>
<tr>
<td>Latitude</td>
</tr>
<tr>
<td>Longitude</td>
</tr>
<tr>
<td>TSSPDCL Consumer No</td>
</tr>
<tr>
<td>Contract Demand</td>
</tr>
</tbody>
</table>
| Voltage level of connection | 1ph, 230 V / 3 Ph, 440 V/11 kV/ 33 kV /66 kV  
| Proposed Capacity of Solar Plant |  
| Nature of Shadow free area | Roof top / Ground mounted  
| Area available for solar installation in Sq. mtr |  
| Proposed area suitable for installation of solar plant | Yes/No  
| The proposed area falls under flood line | Yes/No  
| Is there requirement to increase structure height to avoid submergence of structure | Yes/No  
| Is there requirement to provide drainage system for flood water | Yes/No  

Declaration: I / we have visited the proposed site for installation of solar plant. The site is found to be suitable for installation of solar plant of --- kW capacity.

Surveyed by:

Name and Sign of Bidder Organization:

Witnessed by Representative of Consumer

Name and Sign

Signature and Seal of Tenderer

CHIEF ENGINEER
Annexure 8: BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

(to be furnished along with tender)

To:

Telangana State Industrial Infrastructure Corporation Limited,
5-9-58/B, 6th Floor."Parishrama Bhavanam",
Fateh Maidan Road, P.O.Bag No. 5,
Basheerbagh, Hyderabad - 5000 04.

WHEREAS, [insert name of Tenderer] (hereinafter called the “Tenderer”) has submitted his tender dated [insert date] in response to Tender Notice No. ________________for the [insert name of work] (hereinafter called the “Tender”).

KNOWN ALL MEN by these presents that We [insert name of Bank] having our registered office at [insert address] (hereinafter called the “Bank”) are bound unto Telangana State Industrial Infrastructure Corporation (hereinafter called the “TSIIC”) in the sum of [insert amount] for which payment well and truly to be made to the said TSIIC the Bank binds himself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 2018.

THE CONDITIONS of this obligation are:

The bid Security E.M.D. shall be forfeited

(a) If after opening the tender the tenderer withdraws or modifies the tender during the validity period of tender specified in the form of tender.

(b) If the tenderer having been notified of the acceptance of his bid by the department during the period of validity of bid

i. Fails or refuses to execute the agreement in accordance with the instructions to tenderers.

ii. Fails or refuses to furnish the balance EMD and Additional Performance Security in accordance with the instructions to the tenderers.

We undertake to pay the TSIIC up to the above amount upon receipt of his first written demand, without the TSIIC having to substantiate his demand, provided that in his demand the TSIIC will note that the amount claimed by him is due to him owing to the occurrence of one or both of the two (2) conditions, specifying the occurred condition or conditions.
The Guarantee will remain in force up to and including the date [insert date six months after the deadline for submission of Bids] as such deadline is stated in the Instruction to Bidders or as it may be extended by the TSIIC, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

Signature of Authorised Representative of the Bank _________________________

Name and Designation _________________________

Seal of the Bank _________________________

Signature of Witness________________________

Name of the Witness________________________

Address of the Witness______________________

Annexure 9: BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

(to be furnished at the time of concluding agreement)

To:
Telangana State Industrial Infrastructure Corporation Limited, 5-9-58/B, 6th Floor."Parishrama Bhavanam", Fateh Maidan Road, P.O.Bag No. 5, Basheerbagh, Hyderabad - 5000 04.

WHEREAS _________________________ [name and address of Contractor] (hereinafter called “the Contractor”) has undertaken, in pursuance of Work Order No. _____ dated ____________ to execute the work __________ _______ _______ _______ _______ _______ _______ _______."

AND WHEREAS it has been stipulated in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

Signature and Seal of Tenderer

CHIEF ENGINEER
NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of Rs.__________________ (Rupees __________________________ only), such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of Rs.__________________ as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until _______________ (i.e.) 28 days from the date of expiry of the Defects Liability Period.

Signature and seal of the guarantor ________________________

Name of Bank ____________________________________________

Address ________________________________________________

Date ____________________________________________________


1 An amount shall be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract and denominated in Indian Rupees.