SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 70KWP SOLAR POWER PLANT WITH GRID CONNECTION UNDER NET METERING POLICY IN STATE BANK STAFF COLLEGE.
## APPENDIX TO CONDITIONS OF CONTRACT

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1.</td>
<td>Name of the project</td>
<td>Supply, Installation, Testing and commissioning of 70KWp grid connected solar power plant under net metering for <strong>AT STATE BANK STAFF COLLEGE, HYDERABAD</strong> <em>(Library Block, Dining hall block, New hostel building, Hostel block-2,3,&amp;4)</em></td>
</tr>
<tr>
<td>2.</td>
<td>Estimated cost</td>
<td>Rs. 55,37,000.00</td>
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<td>3.</td>
<td>Earnest Money Deposit</td>
<td>Rs 56000.00</td>
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<td>4.</td>
<td>Initial Security Deposit</td>
<td>2% of the contract value including EMD</td>
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<tr>
<td>5.</td>
<td>Date of commencement of work</td>
<td>Within seven days from the date of issue of the work order</td>
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<td>6.</td>
<td>Period of completion</td>
<td>60 Days</td>
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<tr>
<td>7.</td>
<td>Payments Terms</td>
<td>50% of total project cost components of solar power plant against delivery at site with necessary documents and 40% after commissioning 5% will be against credit of subsidy on SBSC account and remaining 5% will be held with us as security deposit for 5 years and could be released after submission of performance Bank Guarantee from any scheduled/commercial Bank.</td>
</tr>
<tr>
<td>8.</td>
<td>Total retention money including earnest money and initial security deposit</td>
<td>5% of the contract value</td>
</tr>
<tr>
<td>9.</td>
<td>Defect liability period</td>
<td>60 months from date of completion</td>
</tr>
<tr>
<td>10.</td>
<td>Liquidated Damages</td>
<td>½ % on tendered amount per week subject to maximum of 5% of contract value.</td>
</tr>
<tr>
<td>11.</td>
<td>Period of honoring interim certificate for payment</td>
<td>15 Days from date of submission of bill/ invoice and 45 days for final certificate</td>
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Signature of the Contractor  

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## STATE BANK STAFF COLLEGE, HYDERABAD - 500016

**Ph NO: 23406725**

**NOTICE INVITING TENDER**

### NIT NO: 05/2016-17

- State Bank Staff College(SBSC) invites sealed tenders for the SITC OF 70 KWP grid connected solar roof top PV power plants under net metering policy at State Bank Staff College, Begumpet, Hyderabad
- Details of tenders are as under:

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<tbody>
<tr>
<td>1.</td>
<td>Name of Work</td>
<td>“SITC OF 70 KWP grid connected solar roof top PV Power plants under net metering policy at (Library Block, Dining hall block, New hostel building, Hostel block-2,3,&amp;4) of SBSC, Hyderabad”</td>
</tr>
<tr>
<td>2.</td>
<td>Estimated cost</td>
<td>Rs55,37,000.00</td>
</tr>
<tr>
<td>3.</td>
<td>Time allowed for completion</td>
<td>60 Days from issue of Letter of Acceptance (LOA)</td>
</tr>
<tr>
<td>4.</td>
<td>Earnest Money Deposit</td>
<td>Rs. 56000/- all Drafts/BCs shall be in favor of “Assistant General Manager(Admin), SBSC, Hyderabad”</td>
</tr>
<tr>
<td>5.</td>
<td>Initial Security Deposit</td>
<td>2% of the contract value including EMD</td>
</tr>
<tr>
<td>6.</td>
<td>Retention amount</td>
<td>5% of the contract value including Security deposit before subsidy.</td>
</tr>
<tr>
<td>8.</td>
<td>Date &amp; venue of pre-bid meeting</td>
<td>On 30.08.2016 at 1500Hrs at state Bank staff College. All clarifications will be published in Banks website.</td>
</tr>
<tr>
<td>10.</td>
<td>Last date and time of receipt of tender</td>
<td>On or Before 06.09.2016 by 3.00 PM</td>
</tr>
<tr>
<td>11.</td>
<td>The address at which the tenders are to be submitted</td>
<td>Office of the Assistant General Manager(Admn), Estate Department, SBSC, Hyderabad</td>
</tr>
<tr>
<td>12.</td>
<td>Date and time of opening of tender</td>
<td>06.09.2016 by 3.30PM</td>
</tr>
<tr>
<td>13.</td>
<td>Place of opening tenders</td>
<td>Office of the Assistant General Manager(Admn), Estate Department, SBSC, Hyderabad</td>
</tr>
<tr>
<td>14.</td>
<td>Defects Liability Period</td>
<td>60 months from date of completion of the work</td>
</tr>
<tr>
<td>15.</td>
<td>Validity of offer</td>
<td>90 days</td>
</tr>
<tr>
<td>16.</td>
<td>Liquidated Damages</td>
<td>0.5% of the total contract amount per week beyond the date of completion, subject to maximum of 5% of the contract value</td>
</tr>
<tr>
<td>17.</td>
<td>Payment Terms</td>
<td>50% of total project cost components of solar power plant against delivery at site with necessary documents and 40% after commissioning 5% will be against credit of subsidy on SBSC account and remaining 5% will be held with us as security deposit for 5 years and could be released after submission of performance Bank Guarantee from any scheduled/commercial Bank.</td>
</tr>
<tr>
<td>18.</td>
<td>For clarification and other details</td>
<td>Please contact : Assistant General Manager (Admin)-Electrical Engineer: PAPARAO : 9705363299</td>
</tr>
<tr>
<td>18.</td>
<td>Eligibility of the contractor</td>
<td>Registered SPV Suppliers/ Manufacturers/ System Integrators empanelled with M/s NREDCAP/ M/s TNREDC limited in the Year 2015-16-17 or approved Channel Partners of MNRE upto 100 KWp and above</td>
</tr>
</tbody>
</table>

In case the date of opening of tenders is declared as a holiday, the tenders will be opened on the next working day at the same time.

SBSC has the right to accept/reject any/all tenders without assigning any reasons.
MINIMUM ELIGIBILITY CRITERIA

Registered SPV Suppliers/ Manufacturers/ System Integrators empanelled with M/s NREDCAP/ M/s TNREDCL limited in the Year 2015-16-17 or approved Channel Partners of MNRE upto 100 KWp and above

INTRODUCTION ELIGIBLE TENDERERS

The Tenderer shall provide sufficient documentary evidences to satisfy the following conditions that the Tenderer:

a) Is an indigenous manufacturer of the Solar PV Systems or experienced contractor in the field of Solar PV Power Plant.

b) The Tenderer fulfills the terms and conditions of eligibility as an indigenous manufacturer of Solar PV Systems in accordance with the guidelines of Ministry of New and Renewable Energy, Government of India.

c) Has adequate plant and manufacturing capacity available, to perform the works properly and expeditiously within the time frame specified in the tender document.

d) Has established quality assurance systems and organization designed to achieve high level of equipment reliability in manufacturing of the Solar Systems.

e) Has adequate financial stability and status to meet the financial obligations Pursuant to the scope of work.

(f) Has experience of Supply, Installation, Testing, Installation / commissioning and maintenance/after sale services in the field of Grid Connected Solar PV systems in the last 2 years as per the below criteria, and the details of the same must be submitted in the Proforma given in Technical- Bid section of tender document:

(g) Has adequate field service setup to provide good after sale services including necessary repair and maintenance in Hyderabad or secunderabad. Tender for execution of Supply, Installation and Commissioning of Grid Connected Solar Rooftop PV Power Plants of Capacity 70KWp under Net Metering Policy

h) Has provided good after sale services for the works done by him during past years.

(i) Has Valid Test Certificates of the Solar PV Power Plant as specified and required in the Technical Bid of this tender document.

(j) Fulfills all requirements as per provisions under JNNSM, MNRE, GOI, TNREDCL Limited, NREDCAP

(k) The bidder shall be required to have adequate post installation localized service facilities/ centers in Hyderabad or Secunderabad.

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(l) All the components including Power plant, software’s and other components mentioned above should be quoted as a single item. No partial quotes are accepted. The above stated requirements are compulsory to be fulfilled by the Tenderer and Bank may also ask for any additional information as may be deemed necessary in public interest.
SCOPE OF WORK


b. Wiring upto Distribution Board from the SPV Rooftop system will be in the scope of the successful bidder(s). The maximum cable length of 25m for every Solar power plant installed shall be in the scope of the bidder and supply of excess cable length if required shall be in the scope of Bank. The cable should be copper armoured with suitable current carrying capacity.

c. Mounting Structure within the scope of this tender is for flat RCC roofs

d. Performance testing of the complete system

e. The successful bidder will collect firm work order from the Bank. A copy of Work Order, Invoice, Commissioning report and bill of material has to be submitted to NREDCAP/TNREDC for release of CFA of MNRE/State subsidy and liaison with MNRE, newdelhi for releasing of CFA.

f. The successful bidder shall undertake to supply spares free of cost for the maintenance of the offered items during the warranty period (5 years).

g. A leaflet containing the details of the service centres shall be provided to Bank.

h. If the operation or use of the system proves to be unsatisfactory during the warranty period(5 years), the installer shall replace the faulty ones or carry out necessary repairs as per the warranty terms and conditions

i. The successful bidder shall do necessary coordination with concerned agencies like TSSPDCL,TNREDCL Limited, MNRE and CEIG, as applicable, for procuring necessary approvals on behalf of the Bank. The cost of approvals and bi-directional meter, CT/PT(if required) shall be borne by the successful bidder only.
SERVICE CENTRES
The successful bidder shall have minimum of one service centre in Hyderabad or Secunderabad.
The Installer shall visit the site at least once in a quarter, to attend routine maintenance, during the 5 years warranty period. However, in case of malfunctioning of the system, the tenderer/bidder shall attend for rectification of defects within 3 working days from the date of lodging complaint.

WARRANTY
1) A) The SPV panel shall carry a warranty of minimum 25 years.

   B) The SPV panel must be warranted for their output peak watt capacity which shall not be less than 90% at the end of 10 years and 80% at the end of 25 years.

   C) The PCU/Solar Grid tie Inverter shall carry a warranty of minimum 5 years.

2) The complete SPV rooftop systems installed and commissioned shall be under a warranty against any manufacturing or usage defect for a minimum period of 5 years from the date of Commissioning. The mechanical structures, electrical works including power conditioners/inverters/maximum power point tracker units/ distribution boards/digital meters/ switchgear etc. and overall workmanship of the SPV rooftop systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years.

3) The warranty will be against breakages, malfunctions, non fulfillment of guaranteed performance and breakdowns due to manufacturing defects or defects that may arise due to improper operation of electrical /electronic components of the system but do not include physical damages by the end users.

4) The above warranty shall take effect from the date on which the system is taken over by the Bank after commissioning.

5) The successful bidder shall be liable to make good the loss by replacing the defective product during the warranty period for the entire system free of cost.

6) The warranty will cover all the materials and goods involved in the installation and commissioning of SPV rooftop systems by the successful Bidder.

Signature of the Contractor
PAYMENT TERMS

a) 50% of total project cost components of solar power plant against delivery at site with necessary documents and 40% after commissioning 5% will be against credit of subsidy on SBSC account and remaining 5% will be held with us as security deposit for 5 years and could be released after submission of performance Bank Guarantee from any scheduled/commercial Bank.

b) The eligible Central Financial Assistance (CFA) of MNRE or State Government shall be claimed directly by the client as per MNRE guidelines or the CFA proposals shall be processed through NREDCAP/TNREDC. NREDCAP/TNREDC may release the eligible CFA based on MNRE guidelines and release of funds. Successful bidder has to coordinate with NREDCAP/TNREDC. NREDCAP/TNREDC or MNRE(NEW Delhi) for getting the subsidy with his own cost.
SECTION-1
TECHNICAL SPECIFICATIONS

1.1 INTRODUCTION

In grid-connected Solar Photo-Voltaic (SPV) systems, solar energy is fed into the building loads that are connected to the public electricity grid through a service connection with surplus energy being fed into the grid and shortfall being drawn from the grid. Production of surplus energy may happen when solar energy produced exceeds building load energy demand. This surplus is fed into the grid. During the night, or when during the day energy demand in the building exceeds solar energy production, energy is drawn from the grid. Grid connected solar PV systems have no battery storage and will not work during grid failure. For buildings with grid-connected solar PV systems, the service connection meter needs to be of the bidirectional type, whereby import kWh and export kWh are separately recorded.

1.2 QUALITY AND WORKMANSHIP

Solar PV modules are designed to last 25 years or more. It is therefore essential that all system components and parts, including the mounting structures, cables, junction boxes, distribution boxes and other parts also have a life cycle of at least 25 years. Therefore all works shall be undertaken with the highest levels of quality and workmanship. During inspection Bank Engineer and its representatives will pay special attention to neatness of work execution and conformity with quality and safety norms. Non compliant works will have to be redone at the cost of the Installer.

1.3 DEFINITION

A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables and switches. PV Array is mounted on a suitable structure. Grid tied SPV system is without battery and should be designed with necessary features to supplement the grid power during day time. Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

Solar PV system shall consist of following equipments/components.

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

1.4 SOLAR PHOTOVOLTAIC MODULES:

1.4.1 The PV modules used should be made in India.

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

A) For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701

B) The total solar PV array capacity should not be less than allocated capacity (kWp) and should comprise of solar crystalline modules of minimum 250 Wp and above wattage. Module capacity less than minimum 250 watts should not be accepted.

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

D) PV modules must be tested and approved by one of the IEC authorized test centers.

E) The module frame shall be made of corrosion resistant materials, preferably having anodized aluminum.

F) The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid. Bank shall allow only minor changes at the time of execution.

G) Other general requirement for the PV modules and subsystems shall be the Following:
1) The rated output power of any supplied module shall have tolerance of +/- 3%.

2) The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.

3) The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.

4) IV curves at STC should be provided by bidder

1.4.3 Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each modules (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).

A) Name of the manufacturer of the PV module

B) Name of the manufacturer of Solar Cells.

C) Month & year of the manufacture (separate for solar cells and modules)

D) Country of origin (separately for solar cells and module)

E) I-V curve for the module Wattage, Im, Vm and FF for the module

F) Unique Serial No and Model No of the module

G) Date and year of obtaining IEC PV module qualification certificate.

H) Name of the test lab issuing IEC certificate.

I) Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001
1.4.4 **Warranties:**

   A) Material Warranty:

      1) Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than five (05) years from the date of sale to the Bank

      2) Defects and/or failures due to manufacturing

      3) Defects and/or failures due to quality of materials

      4) Non conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at the Owners sole option

   B) **Performance Warranty:**

      1) The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 year period and not more than 10% after ten years period of the full rated original output.

1.5 **ARRAY STRUCTURE**

   a) Hot dip galvanized MS mounting structures may be used for mounting the modules/panels/arrays. Each structure should have angle of inclination as per the site conditions to take maximum insolation. However to accommodate more capacity the angle inclination may be reduced until the plant meets the specified performance ratio requirements.

   b) The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed (like Delhi-wind speed of 150 kM/ hour). It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard and submit wind loading calculation sheet to Bank. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.
c) The mounting structure steel shall be as per latest IS 2062: 1992 and galvanization of the mounting structure shall be in compliance of latest IS 4759.

d) Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Necessary protection towards rusting need to be provided either by coating or anodization.

e) The fasteners used should be made up of stainless steel. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels.

f) Regarding civil structures the bidder need to take care of the load baring capacity of the roof and need arrange suitable structures based on the quality of roof.

g) The total load of the structure (when installed with PV modules) on the terrace should be less than 60 kg/m2.

h) The minimum clearance of the structure from the roof level should be 300 mm.

1.6 JUNCTION BOXES (J Bs)

A) The junction boxes are to be provided in the PV array for termination of connecting cables. The J. Boxes (J Bs) shall be made of GRP/FRP/Powder Coated Aluminium /cast aluminium alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JBs shall be such that input & output termination can be made through suitable cable glands.

B) Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP65 standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry. Single / double compression cable glands. Provision of earthings. It should be placed at 5 feet height or above for ease of accessibility.

C) Each Junction Box shall have High quality Suitable capacity Metal Oxide Varistors (MOVs) / SPDs, suitable Reverse Blocking Diodes. The Junction Boxes shall have suitable arrangement monitoring and disconnection for each of the groups.

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D) Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification

1.7 DC DISTRIBUTION BOARD:

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

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

1.8 AC DISTRIBUTION PANEL BOARD:

A) AC Distribution Panel Board (DPB) shall control the AC power from PCU/inverter, and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while in grid tied mode.

B) All switches and the circuit breakers, connectors should conform to IEC 60947, part I, II and III/IS60947 part I, II and III.

C) The changeover switches, cabling work should be undertaken by the bidder as part of the project.

D) All the Panel’s shall be metal clad, totally enclosed, rigid, floor mounted, air-insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz.

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

F) All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.

G) Should conform to Indian Electricity Act and rules (till last amendment).

H) All the 415 AC or 230 volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions

Signature of the Contractor
<table>
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<tr>
<th>Variation in supply voltage</th>
<th>+/- 10%</th>
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<tbody>
<tr>
<td>Variation in supply frequency</td>
<td>+/- 3 HZ</td>
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</tbody>
</table>

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

A) The combined wattage of all inverters should not be less than rated capacity of power plant under STC.

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

1.10 **PCU/ Inverter:**

As SPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the “Power Conditioning Unit (PCU)”. In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter, to the power conditioning unit/inverter should also be DG set interactive. If necessary. Inverter output should be compatible with the grid frequency. Typical technical features of the inverter shall be as follows:

- Switching devices : IGBT/MOSFET
- Control : Microprocessor /DSP
- Nominal AC output voltage and frequency : 415V, 3 Phase, 50 Hz (In case single phase inverters are offered, suitable arrangement for balancing the phases must be made.)
- Output frequency : 50 Hz
- Grid Frequency Synchronization range : + 3 Hz or more
- Ambient temperature considered : -20o C to 50o C
- Humidity : 95 % Non-condensing
- Protection of Enclosure : IP-20(Minimum) for indoor.
  IP-65(Minimum) for outdoor.
- Grid Frequency Tolerance range : + 3 or more
- Grid Voltage tolerance : -20% & +15%
- No-load losses : Less than 1% of rated power
- Inverter efficiency(minimum) : >93% (In case of 10kW or above)
- Inverter efficiency (minimum) : > 90% (In case of less than 10 kW)
- THD : < 3%

Signature of the Contractor
➢ PF : > 0.9

A) Three phase PCU/ inverter shall be used with each power plant system (10kW and/or above) but in case of less than 10kW single phase inverter can be used.

B) PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.

C) The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power, inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.

D) Built-in meter and data logger to monitor plant performance through external computer shall be provided.

E) The power conditioning units / inverters should comply with applicable IEC/ equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC 60068-2(1,2,14,30) /Equivalent BIS Std.

F) The charge controller (if any) / MPPT units environmental testing should qualify IEC 60068-2(1, 2, 14, 30)/Equivalent BIS std. The junction boxes/ enclosures should be IP 65(for outdoor)/ IP 54 (indoor) and as per IEC 529 specifications.

G) The PCU/ inverters should be tested from the MNRE approved test centres / NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

1.11 INTEGRATION OF PV POWER WITH GRID:

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

I. Data Acquisition System shall be provided for each of the solar PV plant.

II. Data Logging Provision for plant control and monitoring, time and date stamped system data logs for analysis with the high quality, suitable PC. Metering and Instrumentation for display of systems parameters and status indication to be provided.

III. Solar Irradiance: An integrating Pyranometer / Solar cell based irradiation sensor (along with calibration certificate) provided, with the sensor mounted in the plane of the array. Readout integrated with data logging system.

IV. Temperature: Temperature probes for recording the Solar panel temperature and/or ambient temperature to be provided complete with readouts integrated with the data logging system.

V. The following parameters are accessible via the operating interface display in real time separately for solar power plant.

   a) a. AC Voltage.
   b) AC Output current.
   c) Output Power
   d) Power factor.
   e) DC Input Voltage.
   f) DC Input Current.
   g) Time Active.
   h) Time disabled.
   i) Time Idle.
   j) Power produced
   k) Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage.)

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VI. All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values, previous values for up to a month and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel.

VII. PV array energy production: Digital Energy Meters to log the actual value of AC/DC voltage, Current & Energy generated by the PV system provided. Energy meter along with CT/PT should be of 0.5 accuracy class.

VIII. Computerized DC String/Array monitoring and AC output monitoring shall be provided as part of the inverter and/or string/array combiner box or separately.

IX. String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency shall be monitored.

X. Computerized AC energy monitoring shall be in addition to the digital AC energy meter.

XI. The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.

XII. All instantaneous data shall be shown on the computer screen.

XIII. Software shall be provided for USB download and analysis of DC and AC parametric data for individual plant.

XIV. Provision for Internet monitoring and download of data shall be also incorporated.

XV. Remote Server and Software for centralized Internet monitoring system shall be also provided for download and analysis of cumulative data of all the plants and the data of the solar radiation and temperature monitoring system.
XVI. Ambient / Solar PV module back surface temperature shall be also monitored on continuous basis.

XVII. Simultaneous monitoring of DC and AC electrical voltage, current, power, energy and other data of the plant for correlation with solar and environment data shall be provided.

XVIII. Remote Monitoring and data acquisition through Remote Monitoring System software at the Bank location with latest software/hardware configuration and service connectivity for online / real time data monitoring/control complete to be supplied and operation and maintenance/control to be ensured by the supplier. Provision for interfacing these data on [NAME OF THE ORGANISATION] server and portal in future shall be kept.

1.13 TRANSFORMER “IF REQUIRED” & METERING:
   a) Dry/oil type relevant kVA, 11kV/415V, 50 Hz Step up along with all protections, switchgears, Vacuum circuit breakers, cables etc. along with required civil work. (in this case Not Applicable).
   
   b) The bidirectional electronic energy meters as per the statutory requirements of DISCOMs shall be installed for the measurement of import/Export of energy. (getting statutory requirements and installation of bi-directional meter is installer scope with free of ost)
   
   c) The bidder must take approval/NOC from the Concerned DISCOM for the connectivity, technical feasibility, and synchronization of SPV plant with distribution network and submit the same to NREDCAP/ TNREDC before commissioning of SPV plant.
   
   d) Reverse power relay shall be provided by bidder (if necessary), as per the local DISCOM requirement.

1.14 POWER CONSUMPTION:
   a) Regarding the generated power consumption, priority need to give for internal consumption first and thereafter any excess power can be exported to grid. Finalization of tariff is not under the purview of NREDCAP/TNREDC or MNRE. Decisions of appropriate authority like DISCOM, state regulator may be followed.

Signature of the Contractor
1.15 PROTECTIONS

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

1.15.1 LIGHTNING PROTECTION

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

1.15.2 SURGE PROTECTION

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

1.15.3 EARTHING PROTECTION

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

II. Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential

1.16 GRID ISLANDING:

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

Signature of the Contractor
(due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.

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

1.17 CABLES

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

I. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards
II. Temp. Range: –10oC to +80oC.
III. Voltage rating 660/1000V
IV. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation
V. Flexible
VI. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade PVC compound formulated for outdoor use.
VII. Cable Routing/Marking: All cable/wires are to be routed in a GI cable tray and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified.
VIII. The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25 years.
IX. The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All the cables required for the plant provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons. All cable schedules/layout drawings approved prior to installation.
X. Multi Strand, Annealed high conductivity copper conductor PVC type “A” pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armoured cable for underground laying. All cable trays including covers to be provided. All cables conform to latest edition of IEC/ equivalent BIS Standards as specified below: BoS item / component Standard Description Standard Number Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V ,UV resistant for outdoor installation IS/IEC 69947.
XI. The size of each type of DC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 1%.
XII. The size of each type of AC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2 %.
1.18 CONNECTIVITY

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

<table>
<thead>
<tr>
<th>Plant Capacity</th>
<th>Connectioning Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto 10KW</td>
<td>240V-single phase or 415V –three phase at the option of the consumer.</td>
</tr>
<tr>
<td>Above 10KW and upto 100KW</td>
<td>415V- Three Phase</td>
</tr>
<tr>
<td>Above 100KW</td>
<td>AT HT/EHT level (11KV/33KV/66KV) as per DISCOM rules</td>
</tr>
</tbody>
</table>

I. The maximum permissible capacity for rooftop shall be 1 MW for a single net metering point.

II. Utilities may have voltage levels other than above, DISCOMS may be consulted before finalization of the voltage level and specification be made accordingly.

III. For large PV system (Above 100 kW) for commercial installation having large load, the solar power can be generated at low voltage levels and stepped up to 11 kV level through the step up transformer. The transformers and associated switchgear would require to be provided by the SPV bidders.

1.19 TOOLS & TACKLES AND SPARES:

I. After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the bidder for maintenance purpose. List of tools and tackles to be supplied by the bidder for approval of specifications and make from BANK

II. A list of requisite spares in case of PCU/inverter comprising of a set of control logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc along with spare set of PV modules be indicated, which shall be supplied along with the equipment. A minimum set of spares shall be maintained in the plant itself for the entire period of warranty and Operation & Maintenance which upon its use shall be replenished

1.20 DANGER BOARDS AND SIGNAGES:

Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Three signage shall be provided one each at battery –cum- control room, solar array area and main entry from administrative block. Text of the signage may be finalized in consultation with Bank.
1.21 FIRE EXTINGUISHERS:

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

I. Portable fire extinguishers in the control room for fire caused by electrical short circuits

II. Sand buckets in the control room

III. The installation of Fire Extinguishers should confirm to TAC regulations and BIS standards. The fire extinguishers shall be provided in the control room housing PCUs as well as on the Roof or site where the PV arrays have been installed.

1.22 DRAWINGS & MANUALS:

I. Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.

II. Approved ISI and reputed makes for equipment be used.

III. For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to Bank before progressing with the installation work

1.23 PLANNING AND DESIGNING:

I. The bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labour. The bidder should submit the array layout drawings along with Shadow Analysis Report to Bank for approval.

II. Bank reserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.

III. The bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any. The bidder submit three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.
1.24 DRAWINGS TO BE FURNISHED BY BIDDER AFTER AWARD OF CONTRACT

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

1.25 SOLAR PV SYSTEM ON THE ROOFTOP FOR MEETING THE ANNUAL ENERGY REQUIREMENT

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

1.26 SAFETY MEASURES:

The bidder shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc.

1.27 TEST CERTIFICATES AND REPORTS TO BE FURNISHED

Test Certificates / Reports from IECQ / NABL accredited laboratory for relevant IEC / equivalent BIS standard for quoted components shall be furnished. Type Test Certificates shall be provided for the solar modules and the solar grid inverter to provide evidence of compliance with standards as specified by Ministry of New and Renewable Energy (MNRE). Bank reserves the right to ask for additional test certificates or (random) tests to establish compliance with the specified standards.

1.28 CONFIRMATION TO MNRE TECHNICAL SPECIFICATIONS AND STANDARDS

The Tenderer should ensure that all components and systems used under this Scheme shall strictly adhere to the Technical Specifications and Guidelines issued by MNRE , and as amended from time to time.

Signature of the Contractor
**PART-2**

TECHNICAL BID

TECHNICAL BID FORMAT (ENVELOPE – A)

All pages of the Technical Bid shall be organised section-wise, annexed with proof documents, serially numbered and stitched/or spiral bound intact and submitted) Loose pages shall not be accepted.

1. **GENERAL PARTICULARS OF TENDERER**

<table>
<thead>
<tr>
<th>SL NO</th>
<th>PARTICULARS</th>
<th>TO BE FURNISHED BY THE RENDERER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Name of Tenderer/Firm</td>
<td></td>
</tr>
<tr>
<td>2)</td>
<td>Postal Address</td>
<td></td>
</tr>
<tr>
<td>3)</td>
<td>E-mail address for communication</td>
<td></td>
</tr>
<tr>
<td>4)</td>
<td>Telephone/ Fax No.</td>
<td></td>
</tr>
<tr>
<td>5)</td>
<td>Name, designation, address, contact number and Email of the representative of the tenderer to whom all references shall be made.</td>
<td></td>
</tr>
<tr>
<td>6)</td>
<td>Nature of the firm (Individual/Partnership/Consortium/ Pvt. Ltd /Public Ltd. Co./Public Sector, etc.) Attach attested copy of Registration &amp; Partnership deed/Memorandum of Association V</td>
<td></td>
</tr>
<tr>
<td>7)</td>
<td>Amount and particulars of the Earnest Money Deposited.</td>
<td></td>
</tr>
<tr>
<td>8)</td>
<td>Annual Turnover for last three years i.e 2013 -2016 (Attach balance sheets from CA in this regard)</td>
<td></td>
</tr>
<tr>
<td>9)</td>
<td>Name and address of the Indian/foreign collaboration if any.</td>
<td></td>
</tr>
<tr>
<td>10)</td>
<td>PAN NO (Copy of certificate to be enclosed)</td>
<td></td>
</tr>
<tr>
<td>11)</td>
<td>Service Tax Registration No., VAT/TIN/GRN No. CST No. (copies of certificates to be attached)</td>
<td></td>
</tr>
<tr>
<td>12)</td>
<td>Has the Tenderer/firm ever been debarred by any institution for undertaking any work?</td>
<td></td>
</tr>
</tbody>
</table>
13) Any other information attached by the Tenderer (Details of Annexure / page no. where its enclosed)

14) Does Tenderer have any relative Working in Bank
   If yes state the Name and designation.

2. DETAILS ABOUT THE COMPONENTS TO BE USED

<table>
<thead>
<tr>
<th>S. No</th>
<th>Description</th>
<th>Name of Manufacturer(s)</th>
<th>Manufacturing Plant address</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solar PV Modules</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>GridTied Inverter/PCU</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enclose the Data Sheets of Solar PV Modules and Grid Tied Inverters proposed to be used.

3. DETAILS OF EXPERIENCE

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

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Description</th>
<th>FY 2012-13</th>
<th>FY 2013-14</th>
<th>FY 2014-15</th>
<th>FY 2015-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Grid Connected Solar PV Plants in kWp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Total Aggregate Project Cost in Rs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mandatory Documentary Evidences to be submitted:
A. Work Order Copies
B. MNRE Project Sanction Letter (either through SNA/SECI/Channel Partner)
C. Project Completion Report/Certificate clearly showing the date of commissioning
D. CEIG Clearance Certificates (for Projects > 10 kWp)

Signature of the Contractor
4. DETAILS ABOUT THE BLACKLISTING, IF ANY

Information on litigation history in which Bidder is involved.

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

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

<table>
<thead>
<tr>
<th>Department and concerned officer</th>
<th>Other party (ies)</th>
<th>Case of dispute.</th>
<th>Amount involved.</th>
<th>Remarks showing present status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Signature of the authorised person:

Name of the authorised person:

Designation:

Name and Address of Bidder

Stamp of bidder

Signature of the Contractor
# CHECKLIST TO ACCOMPANY THE TENDER

<table>
<thead>
<tr>
<th>S. No</th>
<th>Description</th>
<th>Submitted in &quot;A&quot;</th>
<th>Page No. (see Note below)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Copy of Contractors valid Registration certificate with NREDCAP/TNREDC/Approved letter of MNRE as Channel Partner</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Demand draft toward requisite Earnest Money Deposit (issued by any Nationalised/Scheduled bank) or exemption document.</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Crossed demand draft towards Cost of tender document</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Copy of PAN card</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Copy of latest Income Tax Clearance returns submitted along with proof of receipt (Latest SARAL form).</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Copies of VAT Registration Certificate.</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Latest VAT/ Sales Tax clearance certificate.</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Availability of local service centres/ technical personnel</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Information on litigation history in which Bidder is involved.</td>
<td>Yes/ No</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Any other documents/certificate as specified in tender conditions</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Experience Certificate</td>
<td>Yes / No</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Declarations as per the formats</td>
<td>Yes / No</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

1. All the statements copies of the certificates, documents etc., enclosed to the Technical bid shall be given page numbers on the right corner of each certificate, which will be indicated in column (4) against each item. The statements furnished shall be in the formats appended to the tender document.

2) The information shall be filled-in by the Tenderer in the check list, as applicable and shall be enclosed to the Technical bid for the purposes of verification as well as evaluation of the Tenderer’s Compliance to the qualification criteria as provided in the Tender document.

The bidder shall on all the statements, documents, certificates by him, owning responsibility for their correctness/authenticity.

**DECLARATION**

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

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

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

**Signature of the Tenderer**

Signature of the Contractor
DECLARATION BY THE TENDERER

I/We

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

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

1. The tenderer is fully aware of all the requirements of the tender document and agrees with all provisions of the tender document and accepts all risks, responsibilities and obligations directly or indirectly connected with the performance of the tender.

2. The Tenderer is fully aware of all the relevant information for proper execution of the proposed work, with respect to the proposed place of works/ site, its local environment, approach road and connectivity etc. and is well acquainted with actual and other prevailing working conditions, availability of required materials and labour etc. at site.

3. The Tenderer is capable of executing and completing the work as required in the tender and is financially solvent and sound to execute the tendered work. The tenderer is sufficiently experienced and competent to perform the contract to the satisfaction of Bank. The Tenderer gives the assurance to execute the tendered work as per specifications, terms and conditions of the tender on award of work.

4. The Tenderer has no collusion with other Tenderers, any employee of Bank or with any other person or firm in the preparation of the tender.

5. The Tenderer has not been influenced by any statement or promises by Bank or any of its employees but only by the tender document.

6. The Tenderer is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.

7. The Tenderer has never been debarred from similar type of work by any Government Undertaking /Department. (An undertaking on Non-Judicial Stamp paper worth of Rs. 100/- in this regard shall be submitted)

8. The Tenderer accepts that the earnest money / security deposit may be absolutely forfeited by Bank if the selected bidder fails to sign the contract or to undertake the work within stipulated time.

Signature of the Contractor
9. This offer shall remain valid for acceptance for 3 (Three) months from the proposed date of opening of Tender.

10. All the information and the statements submitted with the tender are true and correct to the best of my knowledge and belief.

Signature of Tenderer
PART-III
FINANCIAL BID
FINANCIAL BID (ENVELOPE-B)

The cost of SPV power plants shall include their respective components as per their respective technical specification, including cables, MCBs, switches, fuses, earthing and lightning arrestors etc., as per the site requirement and shall be a lump-sum turnkey price:

<table>
<thead>
<tr>
<th>Project Category</th>
<th>Turn-key Price of Grid Connected Rooftop Solar PV Power Plant as NRE/ NREDCAP/ TNREDC/ TRANSCO/ DISCOM Specifications under Net Metering Scheme (Rs./Wp)</th>
<th>Total Amount in Rupees without deducting CFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>70KWp</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Quoted amount in words:

Note:
1. Total cost quoted above is without deducting CFA from MNRE. Subsidy amount will be retaining with client. The scope includes liaising/coordination with all concerned departments to release subsidy to Bank.

2. The quoted price is inclusive of all taxes, duties, freight with insurance up to site, for installation within the State of Telangana.

3. The price quoted shall be in both figures and words, rounded to one decimal point. Price quoted after first decimal point, if any, shall not be considered.

4. In case of discrepancy in the Price quoted between Words and Figures, the lower of the two shall be considered.

5. PV modules must be tested and approved by one of the IEC authorized test centers which is acceptable to the Bank and the testing has to be done in the presence of Bank’s Engineer. If the material received in one lot successful bidder has to test 4 PV modules or if received in number of lots bidder has to test one at each lot and total testing of the modules should be minimum four

6. the scope of work includes supply & installation of earthing & lightning arrestors on each building and supply of Bi-Directional meter with free of cost. Getting the approvals from the various departments to get the subsidy and installation of Bi-Directional meter with his cost.

Signature of the Contractor
7. bidder has to interlock all the PV modules structures with 50X50X4 mm MS angle to avoid damages due to wind flow
8. Amount payable to the successful bidder is based on the installed capacity.
9. Provision with surge protection for LAN port to access & view the parameters which is displayed in the inverter in internet.

Signature of the authorized person:
Name of the authorized person:
Designation:
To
The Assistant General Manager(Administration)
State Bank Staff College, Begumpet,
Hyderabad-500016

Dear Sir,


Tender Reference: NIT: 05/ 2016-17

1. We have examined the Tender for Supply, Installation and Commissioning of Grid connected Solar Rooftop Power plants as specified in the Tender. We undertake to meet the requirements and services as required and as set out in the Tender document.

2. We attach our Technical Bid and Financial Bid in separate sealed covers as required by the Tender both of which together constitute our proposal, in full conformity with the said Tender.

3. We have read the provisions of Tender and confirm that these are acceptable to us. We further declare that additional conditions, variations, deviations, if any, found in our response shall not be given effect to.

4. We undertake, if our Bid is accepted, to adhere to the requirements as specified in the Tender or such modified plan as may subsequently be agreed.

5. We agree to unconditionally accept all the terms and conditions set out in the Tender document and also agree to abide by this Bid response for a period as mentioned in the Tender from the date fixed for bid opening and it shall remain binding upon us with full force and virtue, until within this period a formal contract is prepared and executed, this Bid response, together with your written acceptance thereof in your notification of Tender, shall constitute a binding contract between us and Bank.

6. We affirm that the information contained in the Technical Bid or any part thereof, including its schedules, and other documents, etc., delivered or to be delivered to Bank is true, accurate, and complete. This proposal includes all information necessary to ensure that the statements therein do not in whole or in part mislead Bank as to any material fact.

7. We also agree that you reserve the right in absolute sense to reject all or any of the products/ service specified in the bid response without assigning any reason whatsoever.

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

9. We agree to use only indigenous PV modules in this project.

10. We also declare that our Company/Organization is not blacklisted by any of the State or Central Government and organisations of the State or Central Government.

11. We undertake to use the BOS components other than PV Modules and Solar grid tie Inverters as per the standards stipulated.

Signature of the authorised person:
Name of the authorised person:
Designation:
Name and Address of Bidder
Stamp of bidder

CERTIFICATE AS TO AUTHORISED SIGNATORIES

I, certify that I am (Name) …………………………… (Designation) …………………, and that (Name)…………………………………… who signed the above Bid has been duly authorized to sign the same on behalf of our Organisation.

Date:
Signature:
Seal:

Signature of the Contractor
ARTICLES OF AGREEMENT
(on Rs.100/- non-judicial stamp paper)

ARTICLES OF AGREEMENT made the 16 day of February 2016 between Assistant General Manager (Admn) State Bank Staff College, 6-3-1188, High cliff, Begumpet Road, Hyderabad -50016 of (hereinafter called the “Employer”) of the one part and ________________________________, (hereinafter called “The Contractor”) of the other part, where as the Employer is desirous of getting the work of “_________________________________________________________” executed and has caused drawings, conditions of contract, specifications and schedule of quantities etc., describing the works prepared by SBSC, Hyderabad.

AND WHEREAS  the SAID DRAWINGS numbered as per list attached inclusive of and the conditions of contract, specifications and schedule of quantities etc., have been signed by or on behalf of the parties hereto.

AND WHEREAS THE CONTRACTOR has agreed to execute upon and subject to the conditions set forth in the Schedule hereto (hereinafter referred to as “Said Conditions”) the works shown upon the said drawings and described in the same specifications and included in the said schedule of quantities for such sum as may be ascertained to be payable in terms of the Bills of Quantities, and which sum is estimated to be Rs. ____________ (Rupees____________________________________) (hereinafter referred to as “Said Contract Amount”).

NOW IT IS HEREBY AGREED AS FOLLOWS:

1. In consideration of the said sum to be paid at the times and in the manner set forth in the said conditions, the contractor shall upon and subject to the said conditions, execute and complete the work shown in the said drawings and described in the said specifications.

2. The Employer shall pay the contractor the said sum or such sums as shall become payable hereunder at the times and in the manner specified in the said conditions.

3. The term “Employer” in the said conditions shall mean the said M/s State Bank of India , or in the event of their ceasing to be the Employer for the purpose of this contract, such other person as shall be nominated for that purpose by the Employer, not being a person to whom the contractor shall object for reasons considered to be sufficient by the Arbitrator mentioned in the said conditions provided always that no persons subsequently appointed to be the Employer under this contract shall be entitled to disregard or over-rule any previous decision or approval or direction given or expressed by the Employer.

4. Tender documents containing work order Notice to the Contractor, Conditions of Contract, Appendix thereto, Special Conditions of Contract, Specifications and Schedule of Quantities with the rates entered therein, shall be read and studied as forming part of this agreement and the parties hereto shall respectively abide by and submit themselves to the conditions and stipulations and perform the agreement on their part respectively in such conditions contained.

5. The contract is neither a fixed lumpsum contract or a piece work contract, but is a contract to carry out work in respect of the entire works to be paid for according to actual measured quantities, including variations from BOQ at the rates contained in the Schedule of rates and Probable bill of quantities or as provided in the said conditions.

6. The Employer through the Architect, reserves to himself the right of altering the drawings and natures of the work, of adding/substitution to or omitting any items of work or having portions of the same carried out through alternate agencies without prejudice to this contract.

Signature of the Contractor
7. Time shall be considered as the essence of this agreement and the contractor hereby agrees to commence the work soon after the site is handed over to him or date of issue of work order to execute the work, as provided for in the said conditions and complete the entire work in **2 months** subject to nevertheless to the provisions for extension of time.

8. This agreement and contract shall be deemed to have been made in Hyderabad and any questions or dispute rising out of or in any way connected with this Agreement and Contract shall be deemed to have arisen in Hyderabad and only the courts in Hyderabad shall have jurisdiction to determine the same. The limitation period will be 90 days from the date of dispute having arisen.

9. The contract may also be put to an end at any time by the Bank upon giving seven days notice to the Installer. The Installer agrees for Supply, Installation, Commissioning of 70KWp SPV Rooftop with 60 months warranty as per clause  and as per the Terms & Conditions given below.

a) **Installation & Completion Schedule**
   The entire work involving Supply, Installation and Commissioning of SPV Rooftop shall be completed within 45 days from the date of issue of work order by the purchaser

b) **Service:**
   Empanelled Installer shall have minimum of one service centre in Hyderabad or Secunderabad.
   The Installer shall visit the site at least once in a quarter, to attend routine maintenance, during the 5 years warranty period. However, in case of malfunctioning of the system, the tenderer/bidder shall attend for rectification of defects within 3 working days from the date of lodging complaint.

c) **Installation and Commissioning location:**
   The Grid Connected Solar Rooftop Power Plants shall be installed and commissioned at State Bank Staff College under Net Metering Scheme.

d) The validity of tender and the price accepted will be for 3 months.

e) The following documents shall be deemed to form and be read and constructed as part of this Contract.
   i. Technical Specifications
   ii. Tender Terms and Conditions
   iii. Detailed final offer of the Successful Bidder

AS WITNESS our hand this ___________ day of ___________ 2016
Signed by the said in the presence of:
WITNESS : SIGNATURE
NAME : 
ADDRESS : EMPLOYER
WITNESS : SIGNATURE
NAME : ADDRESS :