

**SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 10 Kwp  
STAND ALONE SPV SOLAR POWER PLANT FOR GM HOUSE AND 10  
Kwp SPV SOLAR POWER PLANT FOR COMMON AREA  
LIGHTING(TOTAL 20 Kwp) , OFFICER'S COLONY HASANPURA SBI  
JAIPUR**

**CORRIGENDUM**

- 1.A PRE BID MEETING WILL BE HELD ON 05.08.2017 AT SITE I.E. AT GUEST HOUSE HASANPURA SBI COLONY, JAIPUR.
- 2.THE DATE OF RECEIVING OF BIDS HAS ALSO BEEN EXTENDED UPTO 11.08.17 AND THE REVISED TENDER HAS BEEN UPLOADED ON THE SITE ACCORDINGLY .

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STAND ALONE SPV SOLAR POWER PLANT FOR GM HOUSE AND 10  
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JAIPUR**

## **TENDER DOCUMENT**

**STATE BANK OF INDIA  
PREMISES & ESTATE DEPARTMENT, A&BU  
TILAK MARG, C SCHEME JAIPUR – 302005**

### **Brief Details of the Tender**

<b>Earnest Money Deposit (EMD)</b>	<b>:</b>	<b>Rs. 15,000/- (Rupees fifteen thousand only) in the form of Demand Draft in favor of State Bank of Bikaner and Jaipur payable at Jaipur (EMD should be submitted in separate sealed envelope super scribing the name)</b>
Validity of Tender	<b>:</b>	<b>90 Days from the date of opening of tender.</b>
Last Date of submission of Sealed Tender	<b>:</b>	<b>11.08.17 up to 2: 00 PM</b>
Dated of Opening of Tender	<b>:</b>	<b>11.08.17 at 4:00 PM</b>
Period of Completion	<b>:</b>	<b>One Month</b>
Defects Liability Period	<b>:</b>	<b>12 (Twelve) Months from the date of Virtual Completion</b>

Agreed Liquidated Damages	:	a) 1.0% of the contract value for each week of delay.  Subject to maximum of 10% of the contract value.
Estimated cost of work	:	Rs. 14 lakhs.( Rupees fourteen lakhs only )
Cost of Tender	:	Rs. 1000/- ( One thousand only)

The Bank is not bound to accept the lowest tender/ offer/ quotation and reserve the right accept or reject any or all the tenders/ quotations without assigning any reasons whatsoever.

**STATE BANK OF INDIA**  
**P&E DEPARTMENT, A& BU, JAIPUR**

Date: 17.07.17

Dear Sir/s,

**INSTALLATION OF 10 Kwp STAND ALONE SPV SOLAR POWER PLANT FOR GM HOUSE AND 10 Kwp SPV SOLAR POWER PLANT FOR COMMON AREA LIGHTING(TOTAL 20 Kwp) , OFFICER'S COLONY HASANPURA SBI JAIPUR**

**NOTICE OF INVITATION TO TENDER**

Sealed tenders on item rate basis are invited from the competent enlisted **CONTRACTORS FOR SPV SOLAR POWER PLANTS- OFF GRID/HYBRID** segment in the appropriate category of solar works for SBI Jaipur circle, RRECL/MNRE and who have worked for installation of solar power plants preferably in banking organizations or similar in magnitude and nature having sound technical and financial capacity for the aforesaid work. The proof of the similar works from the concerned organization must be submitted along-with the tender( **at least one work for 20 kwp or two works for 10 kwp off grid installations**). Tender document may be downloaded from Bank's web-site (<http://www.sbi.co.in>) and can also be obtained from the office of the undersigned. While submitting tender, a crossed Demand Draft

of Rs. 1000/- (One Thousand only) (Non – refundable) is to be enclosed against cost of the tender in the favor of AGM(Premises & Estate ),SBI A&BU Jaipur.

Estimated cost of the Work	:	<b>Rs. 14 lakhs.</b>
Earnest Money	:	<b>Rs. 15,000/-</b> (Rupees <b>fifteen Thousand</b> only) in the form of Demand Draft in favour of State Bank of Bikaner and Jaipur payable at Jaipur
Place where tenders to be submitted	:	<b>The Assistant General Manager, Premises &amp; Estate , State Bank of India, A&amp;BU, Tilak- Marg, C Scheme Jaipur – 302005.</b>
Time and date of submission of Tender	:	<b>Upto 2.00 P.M. on 11.08.17</b>
Time and date of opening of tenders	:	<b>4.00 PM on 11.08.17</b>

**The Assistant General Manager,  
Premises & Estate.**

10 Kwp +10 kwp (20 kwp) सोलर पावर पैक की आपूर्ति व स्थापना हेतु

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**GENERAL RULES AND INSTRUCTIONS FOR THE GUIDANCE OF TENDERERS**

1. Tenders are hereby invited on behalf of State Bank of India, for proposed installation of 10 Kwp stand alone SPV solar power plant at SBI GM house Jaipur and 10 Kwp stand alone SPV solar power plant for SBI common area lighting, Jaipur having sound financial capacity and experience of executing at least two similar nature and similar quantum works in Banking organizations or similar during last three years with a services centre and fully furnished office at Jaipur (kindly furnish sufficient proof regarding same & work experiences without which the tender shall be rejected).
2. Contract documents consist of Pro-forma for Pre-qualification, detailed plans, technical specification, schedule of quantities of the various classes of work to be done, and the set of 'conditions of contract' to be complied with by the person whose tender may be accepted. Tender documents may be downloaded from the Bank's web-site (<http://www.sbi.co.in>) can also be obtained from the office of the

undersigned. While submitting tender, a crossed Demand Draft for Rs. 1000/- (One thousand only) (Non- refundable) is to be enclosed against cost of the tender, payable at JAIPUR during the office hours on working days. Therefore, contractors are advised to visit the site before quoting the rates.

3. Tenders which should always be placed in two envelopes, with the name of the project written on the envelopes will should contain Earnest Money Deposit, Tender-Fee, Pre-qualification forms, conditions of contract and technical specifications. Envelope-2 should contain Price bid. The decision of the committee regarding prequalification of contractors shall be final.
4. The time allowed for carrying out of the work will be 1-month.
5. The contractors should quote in figures as well as in the words the rates and amount tendered by them. The amount for each item should be worked out and the requisite totals given. Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates, figures and words. However, if a discrepancy is found in the rates, which correspond with the amount worked out by the contractor shall be taken as correct. If the contractor does not work out the amount of an item or it does not correspond with the rate written either in figure or in words then the rates quoted by the contractor in words shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally but the amount is not worked out correctly the rates quoted by the contractor will be taken as correct and not the amount.
6. The tender document must be filled in English and all the entries must be made by the hand and written in ink. If any of the documents are missing or un-signed, the tender shall be considered invalid.
7. Issue of tender form will be stopped one day before the date fixed for the opening of tenders.

8. Earnest money amounting to Rs.**15,000/-** (Rupees fifteen Thousand Only) in the form of bank draft drawn in favor of State Bank of India, must accompany with each tender and each tender is to be in a sealed cover super scribed **“TENDER FOR PROPOSED solar works.”**
9. The Contractor, whose tender is accepted, will be required to furnish by way of initial security deposit for the due fulfillment of his contract, such sum as will amount to 2.00% of the estimated cost of work. The S.D. shall be collected as detailed in the general conditions of the contract. The EMD of the contractor, whose tender is accepted, shall be forfeited in full in case he does not remit the Initial Security Deposit within the stipulated period or start the work by the stipulated date mentioned in the award letter.
10. The acceptance of tender will rest with the State Bank of India which does not bind itself to accept the lowest tender, and reserves to itself, the authority to reject any or all of the tenders received without the assignment of a reason. All tenders in whom any of the prescribed, conditions are not fulfilled or are incomplete in any respect are liable to be rejected.

The Bank reserves the right to accept the tender in full or in part and the tenderer shall have no claim for revision of rates or other conditions, if his tender is accepted in parts.
11. Canvassing in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
12. All rates shall be quoted on the proper form of the tender alone.
13. Tender containing any condition leading to unknown / indefinite liability, are liable to be summarily rejected. If at all any rebate(s) is/are to be offered the tenderer shall first quote his rates strictly on the terms and conditions stipulated in tender document and then show separately rebate(s) offered specifying the conditions for such rebate(s). Failure to



follow this procedure will render the tender liable to summarily rejection.

14. All compensation or other sums of money payable by the Contractor to Clients under the terms of this contract may be deducted from the security deposit, or from any sum that may be or may become due to the Contractor on any account whatsoever and in the event of the Security Deposit being reduced by reasons of any such deductions, the Contractor shall within --- days of being asked to do make good in cash or by cheque any sum which have been deducted from his security deposit.
15. On acceptance of the tender, the name of the accredited representatives(s) of the contract or who would be responsible for taking instructions from the Employer/ shall be communicated to the Employer.
16. Special care should be taken to write the rates in figures as well as in words and the amounts in figures only, in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the words "RS." should be written before the figures, e.g. Rs.2.15. and in case of word Rupees should precede and the word 'Paise' should be written at the end, unless the rate is in whole rupees and followed by the words 'only'. it should invariable be up to two decimal places. While quoting the rate is in schedule of quantities the word 'only' should be written closely following the amount and it should not be written in the next line.
17. Sales Tax or any other tax on material or on finished works like work's contract tax, GST, Turn - over etc. in respect of this contract shall be payable by the contractor and the Bank will not entertain any claim whatsoever in this respect .
18. The contractor shall give a list of his relatives working with the Bank along with their designations and addresses.

19. No employee of the bank is allowed to work as a contractor for a period of two years of his retirement from Bank service, without the previous permission of the bank. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who has not obtained the permission of the Bank as aforesaid before submission of the tender or engagement in the contractor's service.
20. The tender for works shall remain open for acceptance for a period of 90 (ninety) days from the date of opening of tenders. If any tenderer withdraws his tender before the said period, then the bank shall be at liberty to forfeit Earnest Money paid along with the tender.
21. The tender for the work shall not witness by a contractor or contractors who himself/themselves have/have tendered or who may and had/have tendered for the same work. Failure to observe this condition would render tenders of the contractors tendering as well as witnessing the tender liable to summary rejection.
22. It will be obligatory on the part of the tenderer to tender and sign the tender documents for all the component parts and that, after the work is awarded, he will have to enter into an agreement for each component with the competent authority in the bank.
23. The tender, apart from being a competent contractor must associate himself with agencies of the appropriate class who are eligible to tender for (i) Electrical (ii) Solar and civil works.
24. The tenderer should visit the site to ascertain the working conditions and local authority regulations / restrictions if any and other information required for the proper execution of the work.
25. The quantities of various items given in the schedule of quantities are approximate. The quantities of work may vary at time of allotment / execution of work. Bank reserves the right to omit / delete any item(s) of work from the schedule at the time of allotment / before. Contractor

will be paid for the actual work done at the site duly verified by the concerned official of the bank.

26. The unit price shall be deemed to be fixed price. In case of extra items, a record of labor charges paid shall be maintained and shall be presented regularly to the Employers for checking. The settlement will be made based on figures arrived at jointly and taking unit price given in the contract assigned to the successful Tenderer. In case of extra items where similar or comparable items are quoted in the tender, extra rates shall be based on tender rates.
27. If the rate quoted by the contractor for any item / items are not workable or abnormally lower than the market rate, the bank may demand Bank guarantee from the contractor for satisfactory completion of these work. The bank guarantee amount will be not less than 50% of the estimated amount of the items for which the rates are not workable or abnormally low. This bank guarantee will be released after completion of these works (unworkable and abnormally low rated items) to the satisfaction of the bank.
28. The tenderer should have a work experience of SITC of off grid /hybrid solar power plant installation of similar nature and magnitude. At least two or more similar nature work orders and completion certificates of 20 KW installations are to be attached with the bid without which the technical bid shall not be accepted.
29. Sealed tenders in prescribed form in two envelopes (Envelope-1 should contain Earnest Money Deposit, in form of DD Drawn in favor of State bank of India, Jaipur, Payable at Jaipur, Tender Fee in form of DD of Rs.1000/- in favor of AGM Premises SBI , A& BU, Jaipur. Payable at Jaipur, Pre-qualification forms, conditions of contract and technical specification. Envelope-2 should contain price bid. are to be addressed and sent to The Assistant General Manager, Premises, State bank of India, Local Head Office, Tilak Marg, Jaipur – 302005.
30. **Estimated Cost: Rs.14,00,000/- -**

## **TECHNICAL DETAILS**

**SITC OF 10 Kwp STAND ALONE SPV SOLAR POWER PLANT FOR GM HOUSE AND 10 Kwp SPV SOLAR POWER PLANT FOR COMMON AREA LIGHTING(TOTAL 20 Kwp) , OFFICER'S COLONY HASANPURA SBI JAIPUR**

### **1. SPV MODULES:**

#### **Type and Quality**

The total Solar PV Array Capacity shall be 10 KWp. Mono/Poly Crystalline type solar modules of desired nominal voltage or peak power rating which meet specifications are considered appropriate for inclusion in this offer. Modules will be supplied by Vendor with a warranty that:

- Fabrication is in compliance with the standards approved by MNRE.
- 250/300 WP or any other capacity modules shall be used.
- Offered module shall have a power output warranty for 25 years.
- Solar cells / modules used have a proven record for the performance in actual field conditions of Rajasthan state. PV Modules have IEC 61215 certification.

The modules used shall have following specifications under STC:

Make	:	.....(Standards approved by MNRE)
Type	:	250W60/300W72
Peak Power Output	:	250/300 Watts
Maximum Current	:	8.78 /8.78 A DC
Maximum Voltage	:	30/34 VDC
Dimension in mm	:	1658 x 997 x 42/ 1973 x 997 x 42
Type of Cell used	:	Mono/Poly Crystalline Silicon

## **2. MECHANICAL COMPONENTS**

### **ARRAY SUPPORT STRUCTURE**

Modules shall be mounted on a non-corrosive support structure suitable for site conditions. The inclination angle of the array support structure shall be in accordance with the latitude of the place of installation. No provision for adjusting inclination angle is required. There shall be mild steel frame structures (Hot dipped, Galvanized) for holding the PV modules to form the PV panels. Each panel frame structure shall be so fabricated as to be grouted using cement concrete foundation.

Each panel frame shall be complete with a weather proof junction box as per the relevant ISI specifications, where the module terminals shall be interconnected and output taken.

The panel frame structure will be mounted on cement concrete blocks of size at least 1.5'x1.5' and be capable of with standing a wind load of 200 km per hour, after grouting and installation.

## **3. POWER CONDITIONER UNIT (PCU)**

The power-conditioning unit will convert dc power produced by SPV array into AC power. The capacity of Centralized PCU shall be aggregate capacity of 10 KVA each for both the plants.

### **ELECTRICAL**

<b>INVERTER-Type Hybrid, with remote sensing and monitoring built in , with indication on mobile phone (3phase in 1 phase out)240 volts or as per specifications</b>	
Max. No. of Series panels(MNRE approved)	6-10 nos. for each plant x2
AC out put voltage	230 volt,1 phase, 50 Hz

Maximum out put capacity	2 Nos. 10 KVA for each plant
Peak out put capacity	Up to 150% of maximum current for 15 seconds
Out put wave shape	Sine wave
THD	< 5 %
Max current ripple	4% peak to peak
No load power consumption	2.5 % of O/p rating
Efficiency at 30 degree centigrade	> 90%
<b>ENVIRONMENTAL</b>	
Cooling	Temperature controlled fan forced cooling
Ambient temperature range	0 deg to 55 deg
Ambient humidity range	5% to 90% condensing

Both PCU should have:-

- a. a remote monitoring ,sensing/fault indications using WIFI,ZIGBEE or GSM/Mobile applications to monitor power generations, outages and other failures, correction from remote device etc.
- b. LED/LCD screen to display all solar parameters including energy generations.
- c. Large heat sink for heat dissipation.
- d. The inverter should be able to deliver power during outages.

### **construction**

Both inverters shall be supplied in IP 20 indoor enclosure.

### **Protections:**

Following protections shall be provided:

- Short Circuit

- Overload
- Input surge voltage

#### **4. Battery Bank:**

A battery bank of, 600 Ah, capacity shall be provided with each power plant. Suitable no. of acid proof storage racks shall be supplied to accommodate the cells.

#### **Specifications:**

- 
- Type : Tubular Lead Acid type
- Capacity : 600 AH at C/10 rate
- Container : Made of hard rubber
- Total no. of cells : 2v each 60 nos. connected in series/parallel for 10 hrs back up
- Self Discharge : less than 4% per month
- Ampere hour eff. : 96%
- Watt hour eff . : 81%
- Max. depth of : 80%
- Discharge
- 
- Cycle life at MDOD : More than 1200 nos.

The panel should have provision of remote sensing/fault indications via sms and correction from remote device etc.

#### **5. ARRAY JUNCTION BOXES**

The junction boxes shall be provided in PV array field for termination of connections from various arrays.

#### **Features:**

- Made of FRP
- Dust and vermin proof
- Suitable MOV's shall be provided for high voltage surge

- Copper bus bars of suitable rating

## **6. CABLES**

Cabling will be carried out as per IE rules.

Cable Marking: All cables/wires shall be marked with good quality ferule for Cable identification.

Cable Ends: All connections shall be made through suitable cable lugs/tags crimped properly and with the use of cable glands.

All cables shall be:-

- Multistrand , annealed high conductivity copper/aluminum conductor
- Overall PVC insulation for UV protection
- Armoured cables for under ground laying
- All cables shall conform to BIS standards

## **7. CIVIL WORK**

Civil work shall include work related with foundation for installation of module mounting structures and other accessories. **However the Bank shall provide clear space for installation of SPV array and the control room (12 feet x 12 feet) for installation of PCU for each plant.** 2 separate plants each of 10KW capacity will be installed at the roof tops of identified locations thereat.

## **8. DANGER BOARDS AND SIGNALS**

Danger boards should be provided as and where necessary.

## **9. LIGHTNING PROTECTION**

The suitable lightning arrestors will be installed in the array area. Lightning protection be provided by the use of metal oxide arrestors and suitable earthing such that induced transients find an alternate route to earth. Protection shall meet the safety rules as per Indian Electricity Act 2003/IE rules.



## **10. NET METERING**

The vendor will install bidirectional meter and arrange net –metering at site keeping close liaison to the JVVNL /RRECL authorities, government bodies etc within a specified period of time not exceeding 3 months from the date of installation.

## **11. EARTHING PROTECTION**

Each array structure of the PV yard be grounded/ earthed properly. In addition the lightning arrester/masts should also be provided inside the array field. Provision be kept for shorting and grounding of the PV array at the time of maintenance work. All metal casing/shielding of the plant be thoroughly grounded in accordance with Indian Electricity Act/IE Rules when required after earthing by calibrated earth tester. PCU and DCDB should also be earthed properly. Earth resistance is not more than 5 ohms. It will be ensured that all the earthing points are bonded together to make them at the same potential.

## **12. SURGE PROTECTION:**

Internal surge protection are consist of three MOV type arrestors connected from +ve and – ve terminals to earth (via Y arrangement) for higher withstand of the continuous PV-DC voltage during earth fault condition. SPD have safe disconnection and short circuit interruption arrangements through integrated DC in-build bypass fuse (parallel) which get tripped during failure mode of MOV, extinguishing DC arc safely in order to protect the installation against fire hazards.

## **13. 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.

The fire extinguishers shall be provided in the control room housing the PCU.

## **14. PROJECT DURATION**

The work of supply & installation shall be completed within 30 days from the date

of sanction of the project and clear order received from beneficiary.

**Qty/Rate**

**The bill of material for 10 KWp Grid connected SPV Power Plant is as under:**

<b>Sr. No.</b>	<b>Description of item</b>	<b>Unit</b>	<b>Quantity</b>	<b>Rate</b>	<b>Amount (Rs)</b>
1.	Solar PV Modules250/300 Wp	Set	10 KWp + 10 KWp (2 Nos for each plant)		
2.	Mounting Structure	Set	02 Set(1 no. for. Each plant)		
3.	Hybrid type Power Conditioning Unit (10 KVA)	Nos.	02No (1 no. for each plant)		
4.	Battery Bank (,600AH, eq to complete back up of 10 kva for 10 hrs)	Set	02 Set(1 set for each plant)		
5.	Array Junction Box	Set	02 set(1 set for each plant )		
6.	Earthing Set	Set	02 set(1 set for each plant)		
7.	Lightning Arrester	Set	02 Set(1 set for each plant)		

8.	Wires and Cables	Set	As per site requirement		
9.	Installation accessories/tools	Set	02 set(1 set for each plant)		
10.	Fire- Fighting Equipment	Set	02 Sets ( 1 set for each plant)		
11.	Bidirectional Meter , sign board	Set	02 Sets ( 1 set for each plant)		

Total

**Terms & Conditions:**

Price commissioning	:	FOR Site, Jaipur including installation-Charges and two year warranty maintenance.
Validity of Offer	:	One month.
Taxes/Duties	:	CST/ VAT at present nil. However, taxes if any, shall be charged extra as per applicability at the time of delivery.
Delivery	:	15 days after clear techno-commercial order.
Payment	:	(1) 50 % after supply of material at site (2) 25% after installation (3) 20% after testing and commissioning. (4) Remaining 5% will be kept as SD till DLP of one year
Warranty	:	Five years from date of supply against manufacturing Defects only.

**Scope of work:**

**(a) SBI, Jaipur :**

- Shall provide shadow free roof top area for installation of SPV Power plant as per requirement,
- Shall arrange safe storage of material at respective site till commissioning of systems,
- Shall provide covered space of Size 12 feet x 12 feet for control room with proper ventilation for each plant

**(b) VENDOR:**

- VENDOR shall provide power (from SPV Power Plant) at one point only. CONTRACTOR scope of work includes site, survey, layout planning, design, development and supply of all components of SPV System, Transportation of SPV Power system up to central location, I & C of SPV Power system, on site training of customer for routine visit maintenance for **Five years**. SITC of power plant and bidirectional meter including all liaison works involved with JVVNL for net metering purpose.

