

## INVITATION FOR QUOTATIONS

To \_\_\_\_\_

Date: 16/06/2018

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Dear Sir,

**Sub: INVITATION FOR QUOTATION FOR “the supply, design, construction and installation of the Solar PV System with battery (maximum 7.2 kWp & 3000 Ah) for RO based Community Water purifier on Turnkey basis**

1. You are invited to submit your most competitive quotation for the following product:

Brief Description of the Product/services	Specifications & Scope	Quantity	Completion Period	Project area
Solar PV for RO based community water purifier system.	Total connected load : RO unit : <b>3000 Watts</b> & Water Chiller unit : <b>2500 W</b> ; Duration of operation in full load : <b>4 to 6 hours per day</b> ; Average hours of sunshine per day : <b>5.25 hours</b> ; Autonomy for back-up <b>2 days</b> ; The system should have :- 1.Solar Module (72 Cells) 2.Solar battery (C10 rated) 3.Solar Module Mounting Structure 4.Solar Power Conditioning Unit (Solar Inverter) with MPPT Technology & IGBT 5.Battery Rack 6.Lightning Protection System 7.System Protection unit 8.Cables & Consumables for solar system 9.Remote monitoring (optional)	3	15 days from date of issue of PO/W O	Urulikanchan, Pune
After-sales services Required	Technical Support; Warranty on Parts and Labor for minimum period of 5 years ; Annual Maintenance Contract for a period of 5 years ; Provision of Service Unit when pulled out for maintenance/ Repair (optional)	–	15 days from date of issue of PO/W O	Urulikanchan, Pune

**2.0 Regarding Project:** BAIF has installed Reverse Osmosis (RO) technology based water purification units operated by cooperatives in various locations in Urulikanchan as a part of

Swachh-Pani project. In order to give autonomy from the grid power supply and tackle the issue of voltage variance which hinders the operation of the water purifier unit, BAIF is exploring the opportunity to solar power the units.

### **3.0 Quotation**

- a) The contract shall be for the full quantity as described above. Corrections, if any, shall be made by crossing out, initialing, dating and re writing.
- b) All duties, taxes and other levies payable on the raw materials and components shall be included in the total price.
- c) The rates quoted by the party shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
- d) Delivery and transportation at party's cost.
- e) The prices shall be quoted in Indian Rupees only.
- f) When preparing your quotation, please be guided by the form attached hereto as Annex 1

### **4.0 Each party shall submit only one quotation.**

**4.1** No advance payment is possible; parties are requested to read the payment terms carefully.

**70% after material delivery.**

**25% after installation and commissioning.**

**5 % as security deposit, to be released after 3 months of satisfactory working of system.**

(The Conditions for Release of Payment on work completion will be only after a) Passing Inspection by BAIF, b) Complete Installation c) Completion of training on operation and maintenance for personnel involved. d) Civil works including repair of building if dismantled during installation)

**4.2 All submissions must be in sealed envelopes, mentioning party's name and contact on envelope.**

**4.3 All quotations must have proper mention of technical and warranty terms, payment terms (as given earlier), validity of quotations, delivery schedule and place, GST and PAN number.**

### **5.0 Validity of Quotation**

Quotation shall remain valid for a period not less than 15 days after the deadline date specified for submission.

### **6.0 Evaluation of Quotations**

The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which

- (a) Are properly signed; and
- (b) Conform to the terms and conditions, and specifications.
- (c) Should meet the minimum criteria as mentioned in 6.2

**6.1** BAIF may choose to conduct physical inspection of the bidder's warehouse / previous project sites. Also BAIF may inquire the reference check with other clients on the quality of performance on ongoing or previous contracts completed.

Additionally, BAIF may conduct testing and sampling of the goods to ensure compliance with the technical requirements. Also will evaluate the verification of accuracy, correctness

and authenticity of the information provided by the bidder on the legal, technical and financial documents submitted;

The Quotations would be evaluated for all the items together.

6.2 Minimum Requirement:

- a) Past experiences in the region or elsewhere in similar projects/assignments;
- b) Compliance to standards;
- c) Submission of proposal for annual maintenance;
- d) Detail drawings with specifications
- e) Minimum 5 years of warranty for the system.
- f) Comprehensiveness of after-sales services
- g) Technical responsiveness/Full compliance to requirements and competitive/lowest price

6.3 **The supplier has to inspect the location/site for installation prior to submission of the bid;**

6.4 **Cost of bid processing:** The bidder shall pay a processing fee of **INR 500/-** (non-refundable), in favor of “BAIF Development Research Foundation” via cheque.

7. **Award of contract**

The Purchaser will award the contract to the party whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price. The quotations should include GST No/PAN No.

7.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotation and to cancel the process and reject all quotations at any time prior to the award of contract.

7.2 The party whose quotation is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.

7.3 **For similar works taken up in future, BAIF may enter into a Rate Contract (RC) with the successful tenderer. The unit rate of major components, terms and conditions of the RC will be valid for a period of one year from the date of issue of current PO.**

8. Party shall mention payment terms in the quotation.

9. Normal commercial warranty/ guarantee shall be applicable to the supplied goods. Should meet the warranty details specified in the Quotation.

10. You are requested to provide your offer **on or before 25<sup>th</sup> March, 2018** in the name of **BAIF DEVELOPMENT RESEARCH FOUNDATION in sealed envelopes** only.

11. We look forward to receiving your quotations and thank you for your interest in this project.

Yours sincerely,

Authorized Signatory  
BAIF Development Research Foundation

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## **Annex 1: Technical Requirement and Detailed Specifications**

### **I. Instruction to Bidders**

1. The supplier has to carry out **Design, Supply, Installation, Testing and Commissioning** of the Solar *PV system*.
2. The supplier shall submit bid for all of the following activities: *Solar PV System (Maximum of 7.2 kWp) With battery backup (3000 Ah)*
3. The client (BAIF) shall evaluate all the options and activities mentioned above and reserves the right to award the contract for the most feasible , cost effective (not necessarily be the lowest bidder) and Technically superior option and activities.
4. The bid should be inclusive of any civil and electrical works that may be required for the functioning of the system;
5. The supplier shall provide all technical literature, design calculations and drawing considered necessary for the installation, operation and maintenance of the equipment and its related accessories/fittings. These shall include:-
  - a. Design calculation and drawings showing overall dimensions and all other details including sectional view of the equipment.
  - b. BOQ of all the materials;
  - c. Manual of instructions for the operation, maintenance and repair of equipment and accessories;
  - d. Any other relevant technical data necessary for the efficient operation and maintenance of the system etc;
6. The supplier shall engage purchaser's personnel during installation of the system and provide on the job training on the installation, operation and maintenance of the system;
7. All the elements of the system which fail due to manufacturing defect within the period of guarantee shall be replaced by the tenderer, free of cost;
8. The specification and component provided in the technical specification are minimum requirements and therefore supplier may propose any other additional component if not covered here, which are essential for the proper functioning of the system;
9. The supplier needs to conform to the technical specifications. However, the supplier may propose/recommend for item(s) having higher efficiency without major cost implications;
- 10. The supplier has to inspect the location for installation prior to submission of the bid;**
11. All equipment shall be provided with labels or name plates, giving a description of the equipment, together with information regarding the solar PV modules, solar power conditioning unit, inverters, charge controller, control systems, cables, grid tie inverter, and all accessories and balance of system, etc under which the item of plant in question has been designed to operate. Such nameplates or labels are to be of non-corrodible, non-hygroscopic materials with lettering of a contrasting colour.

## II Technical Specification

### 1) Maximum 7.2 kWp Solar PV System for 1000 lph RO plant and water chiller unit.

The Solar PV project shall be executed on a turnkey basis, which includes design, construction, installation, testing and commission. All the materials and equipment supplied under this tender shall conform to the latest editions of the International Electrotechnical Commission (IEC) Specifications or any other relevant standards. If equipment is not covered by IEC then other national standards are accepted if it confers equal or superior quality and performance than IEC or other international standards.

#### 1. a Local Conditions for Design Consideration

While designing the system, the local conditions have to be considered and specified in the design.

Basic Design Parameter	Basic Design Value
Ambient Air Temperature (Min & Max)	To be specified by bidder
Average Annual Isokeraunic Level	To be specified by bidder
Average Annual Rainfall	800 - 1000mm
Relative Humidity	20 – 100%
Solar Insolation	4.5 kWh/m <sup>2</sup> /day
Maximum load	To be specified by bidder after load analysis
Wind speed	40 m/s
Load Efficiency	To be specified by bidder
Dust Factor	To be specified by bidder
Also specify all the assumptions in the design and calculations	

### 2.) Scope of Work

The scope of services provided by the Contractor/Vendor shall include all tasks required to survey, design, engineering, procuring, constructing, commissioning, training for operation and maintenance, and perform necessary maintenance of the solar PV system.

The bidders are required to furnish the following:

- a) Design calculation sheet (soft and hard copy)
- b) Drawings specifying package envelope along with supplier/manufacturer's data sheets.
- c) Bill of Materials (BoM)
- d) Calculate and indicate the kWh per day/cost of the offered PV System
- e) Technical specifications.
- f) Schedule of manufacturing and delivery.
- g) Consistency and convenience of gathering data.
- h) Clarifications and exclusions.
- i) Recommended spare parts list.

### 3.) Documents to be submitted

- a) *Product Data*: Provide manufacturer's documents on products, containing, data sheets, test certificates and installation instructions, and operation manuals after completion)
- b) *Drawings & Layout*: Physical and electrical layout and drawings including details (where applicable) for construction, installation and operation and maintenance (cad drawing file

preferably )

- c) *Design Data:* System Design and Structural design calculations with signature of professional engineers (hard & soft copy including excel sheets)
- d) *Manufacturer test certificates:* Certify products exceeding specified specifications.
- e) *Manufacturer's warranties:* The supplier/manufacturer's warranty will have to be provided
- f) *Relevant documents to meet the minimum requirement (as in clause 6.2 in IfQ)*

#### 4 Installation

- a) Civil Works and Site Preparation: implementation and/or technical guidance by vendor or by vendor appointed local/regional representative.
- b) Required electrical works for integration of the PV System and Grid.
- c) PV array mounting and cabling with weather proof connectors.
- d) Battery mounting in a ventilated compartment and/or container. Optional air condition in hot climates and with temperature sensitive battery type. Cabling from inverter to new AC switchboard with two outlets (critical and non-critical loads).
- e) Lightning protection.
- f) Pre-assembling and wiring: mounting of inverters, controllers and the likes done as much as possible in a factory/lab environment.

#### 5 System Configuration

The brief description of the System configuration is as follows:

SL No.	Brief Description	Configuration
1	PV modules for a total capacity of max 7.2 kWp as per specifications	Poly(Multi)crystalline cells 300Wp, 24V/ Equivalent
2	SPV module mounting structure for accommodating max 7.2 kWp capacity SPV modules	MS 80 micron, Hot Dip Galvanized / 300 Wp, 6M
3	Power Conditioning Unit (PCU)	10 kVA (7.5 kW), 96 VDC, 230 VAC as per Specifications
4	Array Junction Boxes	As required
5	Deep Cycle Low Maintenance Batteries (Tubular Lead Acid / C10 rated)	150 Ah, 12 V
6	DC Distribution Units and AC Distribution Box	As per requirement
7	Battery Rack	150Ah X 10 Nos. (2 stacks of 5 batteries) /Equivalent
8	System Cables requirement as per design	Copper as per IS standard and design calculations based on site condition
9	Lighting arrester complete set as per Specification	As per relevant standard

10	Earthing complete set as per specification	Copper/Hot Dip Galvanized
11	Spares, tools and plant for 5 years operation	As per relevant standards
12	Training to engineers and site staff for operation and maintenance, and trouble shooting skills	
13	5 years performance warranty	As per relevant standard
14	Engineering design calculations, layout drawings, electrical drawings, installation and O&M manuals	As per relevant standard
15	Switchgear and protection , Fuses, Transfer switches	As per relevant standard

## 6 Identification and Traceability

The following information of solar PV module and accessories must be provided:

- Name of the manufacturer of PV Module
- Name of the Manufacturer of Solar cells
- Month and year of the manufacture (separately for solar cells and module) Country of origin (separately for solar cells and module)
- I-V curve for the module
- Peak Wattage,  $I_m$ ,  $V_m$  and FF for the module
- Unique Serial No and Model No of the module
- Date and year of obtaining IEC PV module qualification certificate Name of the test lab issuing IEC certificate
- Other relevant information on traceability of solar cells and module as per ISO 9000 series.

The validity of the existing Certificates/Reports /procedure shall be for five years.

- PV modules must qualify (enclose test reports/ certificate from IEC/NABL accredited laboratory) as per relevant IEC standard. Additionally the performance of PV modules at STC conditions must be tested and approved by one of the IEC / NABL Accredited Testing Laboratories including Solar Energy Centre. For small capacity PV modules up to 50Wp capacity STC performance as above will be sufficient. However, qualification certificate from IEC/NABL accredited laboratory as per relevant standard for any of the higher wattage regular module should be accompanied with the STC report/ certificate.

### 6.a Warranty

- PV modules used in solar power plants/ systems must be warranted for a life of minimum 20 years.



### 6.b Specification

SI No	Particular	Specification
<b>Solar PV Module</b>		
1	Power	7.2 kWp
2	Type of cell/Module Technology	Poly (multi) crystalline silicon
3	Lamination type	Vacuum laminated Glass to Tedler / Equivalent
4	Module Rating*	24 V, 150/250/300 Wp OR 12 V, 100/120 Wp
5	Number of modules	As per your design calculations verified by the BAIF
6	Efficiency	> 13%
7	Product Standard	IEC 61215 /IS14286; IEC 61730; IEC 60904; CE ; Certified; MNRE GOI Approved (Origin in India)

\*Note : Module rating is tentative, it depends on the design and the materials that you choose.

### 7 . Balance of Systems (BOS) items/ components

The BOS items / components of the SPV power plants/ systems deployed under the project must conform to the latest edition of IEC/ Equivalent BIS Standards/ MNRE specifications / as specified below:

Applicable BIS/Equivalent IEC Standard or MNRE Specifications			
SI No	BOS Item/System	Standard Description	Standard Number
1	Charge Controller/MPPT Units	Environmental Testing	IEC or Equivalent BIS Std.
2	Power Conditioning Units/Inverters including MPPT and Protections	Efficiency Measurements; Environmental Testing	IEC or Equivalent BIS Std.
3	Inverter	Efficiency Measurements; Environmental Testing	EMC/IEC Equivalent
4	Cables	General test and Measuring Method PVC insulated cables for working voltage up to and including 1100 V and UV resistant for outdoor installation	IEC / IS Standard
5	Switches/Circuit Breakers/Connectors	General Requirements; Connectors Safety AC/DC	IEC /IS standard
6	Junction Boxes/Enclosures for Inverters/Charge Controllers/Luminaries	General Requirements	IP 54 (for outdoor)/IP 21 (for indoor) as per IEC 529

### **7.a** *Certificates*

Test certificates / reports for the BOS items/ components can be from any of the IS Accredited/NABL/ IEC Accredited Testing Laboratories or MNRE approved test center

### **7.b** *Warranty*

The mechanical structures, electrical works including power conditioners/inverters/ charge controllers/ maximum power point tracker units/distribution boards/digital meters/ switchgear etc. and overall workmanship of the SPV power plants/ systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years.

### **III Quotation Format**

**Along with the quotation in template of the bidder specifying the individual item quantity, cost and other charges involved, kindly submit the summary of the price quotation in the format given in Annex 2.**

## Annex 2 : Format for Quotation

Summary (for 3 plants)

<i>To be printed on Letterhead)</i>			
Date :			
To			
BAIF Development Research Foundation			
Pune.			
<b>Quotation for _____</b>			
Sr. No.	Description of goods	Specifications & Scope	Quoted Price
		<b>Total</b>	
		<b>Taxes/GST @ ... (if any)</b>	
		<b>AMC (inclusive of tax)</b>	
		<b>Other Charges, if any (please specify)</b>	
		<b>Transportation (if applicable)</b>	
		<b>Grand Total</b>	
<b><u>Terms and Conditions:</u></b>			
1. Warranty			
2. Terms of payment : 70% after material delivery, 25% after installation and 5% security deposit.			
3. Delivery within : 7 days . Work Completion : within 15 days			
4. Delivery at :Urulikanchan, Pune			
5. Validity of quotation : 15 days			
<b>6. GST No</b>			
Signature with Stamp of Firm			
Name of Authorized signatory			

Quotation break-up for major items per plant.

SL No.	Component	Quantity /Remark	Brand / Make/Specifics	Unit cost	Net Cost
1	Solar PV modules – 300 Wp	24 Nos			
2	Power Conditioning Unit (PCU) - 10 kVA (7.5 kW), 96/120 VDC, 230 VAC	1			
3	Batteries (Tubular Lead Acid / C10 rated) - 150 Ah, 12 V	20 Nos			
4	Annual Maintenance Contract	5 years			
5	Other aligned components	As required – specify details			
6	GST	Specify details			
7	Other charges (Transportation, installation charges etc)	Specify details			
8	Total system cost	Inclusive of all			

Terms of payment:

**70% of total cost after material delivery.**

**25% of total after installation and commissioning.**

**5 % of total shall be kept as security deposit, to be released after 3 months of satisfactory working of the system.**