



REQUEST FOR QUOTATION (RFQ)

DATE: October 21, 2018

REFERENCE: RFQ/01/18 Procurement, installation, testing and commissioning of solar power to power proposed electric borehole pump for rural water supply Bukembe, Kenya region

Dear Sir / Madam:

We kindly request you to submit your quotation for ***RFQ/01/18 Procurement, installation, testing and commissioning of solar power to power a proposed electric borehole pump for rural water supply Bukembe, Kenya region***, as detailed in Attachment 1 of this RFQ. When preparing your quotation, please use the form attached in Attachment 2.

Please note, this is quote and not an order. Quotes will be evaluated before purchase is made.

Quotations are due on or before 5:00 PM local (Bukembe) time, on November 16, 2018 by email to jharrington@ewb-usa-chicago.org

Your Proposal must be expressed in English language and valid for a period of 180 days from due date.

Quotations submitted by email must be limited to a maximum of **15.0 MB**, signed and in the .pdf format, virus-free and no more than one (1) email transmission. They must be free from any form of virus or corrupted contents, or the quotations shall be rejected. It shall remain your responsibility to ensure that your quotation will reach the address above on or before the deadline.

Site Location

Bukembe Village PO Box 1103, Kenya

0°36'23.07"N 34°39'3.93"E

The pump and water tank are located adjacent to a Teacher's Dormitory building off of A104 road.

Schedule

Contractor shall provide schedule for proposed services including material delivery, construction, testing, commissioning, and training of onsite personnel. Implementation of the specified work is anticipated for February or March of 2019.

Storage Requirements

Contractor shall specify requirements for onsite storage of equipment and materials to execute work in reasonable manner. It is assumed that only one mobilization will be required. Materials shall be delivered to site and maintained undamaged throughout the project.

Payment Terms

Initial payment to be issued for long lead materials upon initiation of procurement process and receipt of invoice from Contractor. These materials shall be retained by Wema Children's Centre should the Contractor fail to perform the other contracted services described herein.



Remaining material costs and 50% of construction labour costs to be paid after delivery of the equipment to the project site. Remaining 50% of labour costs, and fees for technical supervision, testing, commissioning, and training services to be paid upon completion of Work and signature of related contract documents.

Deviation from Contractor's proposed schedule may result in reduction of payment and/or termination of contract, to be negotiated during purchase confirmation.

Change Orders for additional payment shall only be made if the scope is amended by Wema Children's Centre. Unit Rates for materials and labour provided in Contractor's Quotation will be applied accordingly.

Contractor will be compensated in Kenyan Shillings. Quotation shall be exclusive of VAT and other applicable indirect taxes.

After-Sales Services

Warranties on parts and labor shall be provided by Contractor. Technical support shall also be provided upon system installation including consultation on functionality of the products, responses to inquiries, and training for Wema Children's Centre staff regarding operation, maintenance and troubleshooting.

Permits & Fees

Contractor shall demonstrate familiarity with local regulations by stating any anticipated permits or fees associated with the solar installation, including but not limited to interconnection applications, utility coordination services, or building permits.

Requested Documents

Contractor shall provide the following with quotation:

- Project Schedule (sequence of tasks and time required for each)
- Bill of Materials
- Summary of system installation and operation, including requirements for storage, construction sequencing, safety, system maintenance, and permits/fees (provide corresponding citations)
- Specifications or technical data sheets for all proposed components, materials, and structure(s)
- Discussion of alternative mounting locations (See Attachment 1)
- Unit Rates and warranties for material and labor (See Attachment 2)
- Copy of valid license to carry out required services

RFQ Correspondence

All responses to this RFQ and any inquiries shall be sent in writing to jharrington@ewb-usa-chicago.org. Inquiries should be submitted by November 2, 2018 to ensure timely response. Only written inquiries will be accepted.

Quotations are due on or before 5:00 PM local (Bukembe) time, on November 16, 2018 by email to jharrington@ewb-usa-chicago.org.

Services/goods offered shall be reviewed based on completeness and compliance of the quotation with the minimum specifications described above and any other attachments providing details. Any offer that does not meet the requirements shall be rejected.



ATTACHMENT 1: Specifications of the Goods Required

RFQ/01/18 Procurement, installation, testing and commissioning of solar power to power proposed electric borehole pump for rural water supply Bukembe, Kenya region

Background:

An existing grid-tied 2hp (1.5kW) borehole pump was recently installed at the site as part of an ongoing facility improvement project. Water from a nearby well is pumped to a mounted water tank which then services the local water distribution system. The scope outlined in this RFQ is to power the proposed future upgrade of the pump to a 4kW model. The pump and water tank are located adjacent to a Teacher's Dormitory building off of A104 road.

Site Visit:

The Contractor is advised to visit the site prior to submitting a tender to ascertain the nature of the site, nature of adjoining property, optimal location for solar installation, and any other observations necessary for smooth project delivery. No claims arising from Contractor's failure to comply with this recommendation shall be considered.

Objectives:

The main objective of this Request for Quotation (RFQ) is procurement, installation, testing and commissioning of solar power to power existing and proposed electric borehole pump for rural water supply in Bukembe, Kenya in order to improve water supply facilities and provide reliable water supply for rural Wema Children's Centre facilities. Training of onsite personnel is to be performed as part of the Work to promote sustainable operation of the system after construction.

Scope of Work and Expected Output:

This Request for Quotation (RFQ) is for a complete set of equipment and labor for a solar installation to power a proposed water pump in Bukembe, Kenya. This will be a stand-alone system with a disconnect switch from existing grid connection. The power generated by the solar modules is used for operating the pump set for lifting water from a deep well for drinking water purposes. Refer to the following:

Figure 1: System Schematic

Figure 2: Proposed Mounting Locations

Attachment 2: Supplier's Itemized Quotation

Attachment 3: Specification Sheets for Proposed Borehole Pump

Upon system installation, testing and commissioning is to be performed to demonstrate successful implementation and operation of the system. Training of Wema staff including electrical and structural upkeep, safety considerations, and standard maintenance procedures is required as part of this scope to allow for successful long-term operation of the system.

Alternative Mounting Locations:

Given the nature of this project, alternative installation procedures are being considered. Contractor shall provide a discussion and high-level technical assessment of the following:

1. Installation of a ground-mounted system beyond the roadway.
2. Installation of a roof mounted system on the Teacher's Dormitory adjacent to the water tank.

Contractor's discussion shall include a brief comparison of civil works, wiring, structural and safety considerations. A general assessment of impact to project schedule and cost shall also be provided.

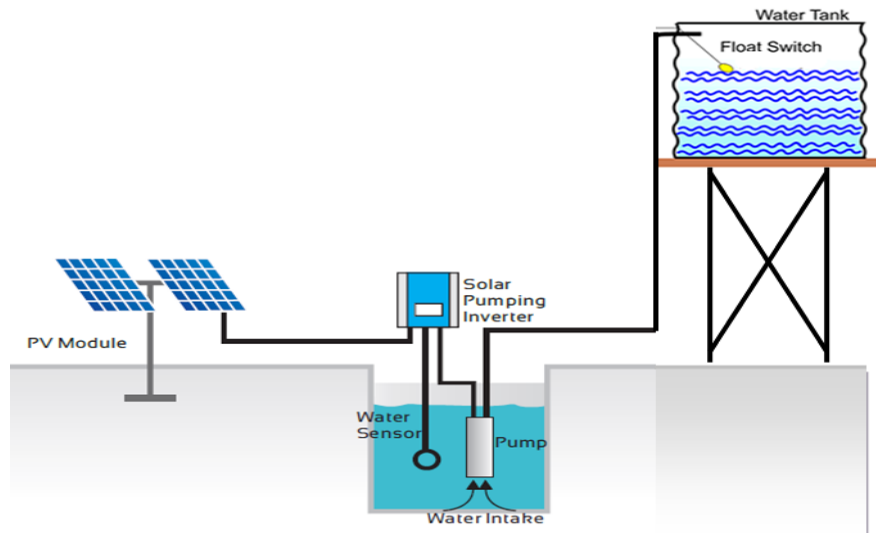


Figure 1. Solar System for Rural Water Supply

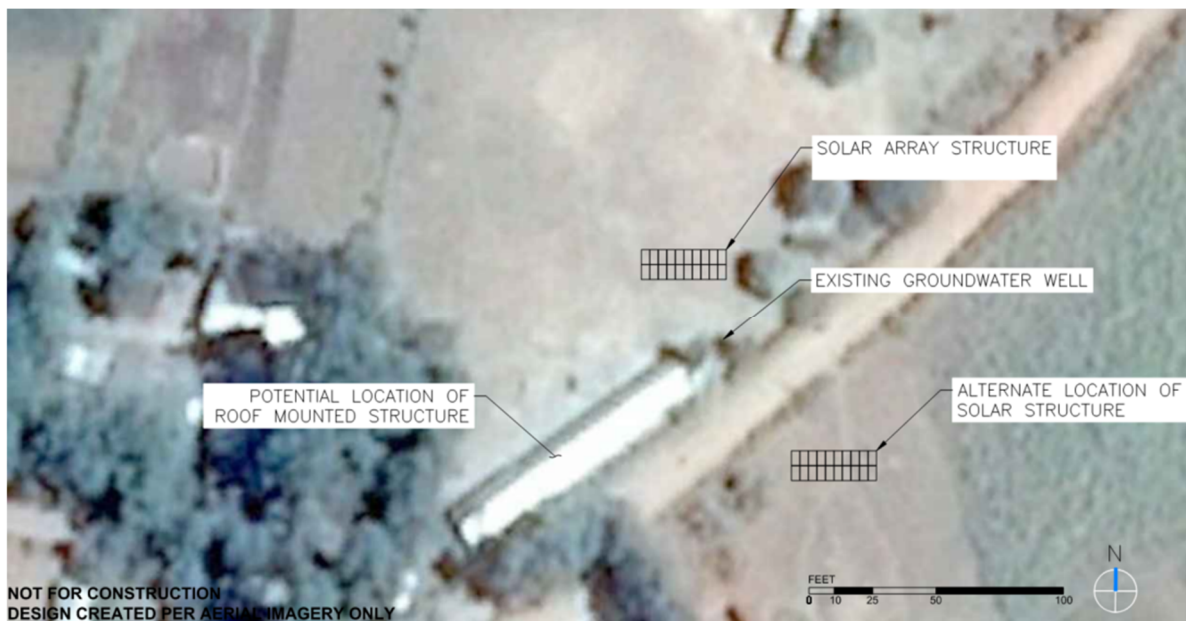


Figure 2. Project Work Site.

The supplier shall provide all solar system components required for independent operation of the pump.

The solar system and technical specification shall be furnished as below:

1. The PV array to be installed in appropriate optimal location with the maximum solar energy received. The arrangement will face true south at a shallow tilt angle (5-10 degrees) to maximize production of the array. Final tilt angle will be determined by Wema and relayed to contractor prior to construction. The array should be free of shading between 9 a.m. to 4 p.m. All the components shall be specified for the conditions of installation such as voltage, current, temperature, wind, etc.
2. The installation shall include all supporting structures and fixtures. A discussion of an alternative option to mount on the roof of the adjacent Teacher's dormitory building shall be provided by the Contractor.



3. Full detailed design of the system including shop drawings for proposed mounting structure and its detailed specifications.
4. All electrical components shall comply with, or exceed, the technical specifications of the International Electrotechnical Commission IEC or Underwriter's Laboratories (UL). Where available, all electrical components and equipment will be listed to safety standards established by UL or equivalent.
5. Outdoor and underground conduit and conductors, if necessary, must be wet rated, watertight, and resistant to temperature extremes and corrosion.
6. Grounding system shall be installed in accordance to IEC Standards.
7. Contractor shall conduct preconstruction survey and site conditions assessment including orientation, site safety approach, and hazard identification including fall protection, personal protective equipment, and maintenance.
8. Contractor shall conduct system testing & commissioning during installation, after completion, and before operation (client has the right to get assistance from third party commissioning agent).
 - a. Conduct operation, maintenance & troubleshooting training for the Wema Children's Centre staff.
 - b. Technical installation, operations and maintenance manual to be provided for use by the PV system operators and service technicians.
9. Technical codes shall apply on the PV system supplied and installed at the Site:
 - a. ASME PTC 50 (solar PV performance)
 - b. ANSI Z21.83 (solar PV performance and safety)
 - c. NFPA 853 (solar PVs near buildings)
 - d. NFPA 70 (electrical components)
 - e. IEEE 1547 (Interconnections)
 - f. National Electrical Safety Code – ANSI C2 – 2017
 - g. IEEE 1262 standards
10. All structural components, (including array structures) must attain a minimum 30-year design life.
 - a. Prevention/resistance to corrosion at the connections between dissimilar materials.
 - b. Mounting structure of the PV array to bear Wind velocity (withstanding capacity 150 km/hour).
11. Solar PV modules shall be guaranteed (performance guarantee) for a minimum of twenty-five (25) years with a maximum allowable degradation in peak power output of 20 percent over this period. This shall cover system components and parts (e.g., mounting structures, cables, junction boxes, distribution boxes, etc.)
12. PV Modules type: crystalline silicon, meeting following criteria:
 - a. Certified by TUV Rheinland or other qualified third party to ISO, BS, and UV standards
 - b. Efficiency $\geq 17\%$
 - c. Degradation should not exceed Panel output (Wp) capacity to be $\geq 90\%$ of design nominal power after 10 years
 - d. $\geq 80\%$ of design nominal power after 25 years
13. Inverter efficiency $\geq 95\%$, Protection degree IP 65 for outdoor mounting, IP 54 for indoor mounting, display LCD for data display. LCD / LED for status display.
14. Junction boxes and solar panel terminal boxes shall be of the thermo plastic type with IP 65 protection for outdoor use and IP 54 protection for indoor use.
15. Good design and workmanship practices are expected (i.e., neatness in installation of modules, framing, conduit, etc.)
16. Price offer shall include transportation/accommodation and all other costs related to the field visits.
17. Contractor may make any siting, equipment, or system configuration suggestions that allow for the most efficient system to power the 4kW pump.



ATTACHMENT 2: FORM FOR SUBMITTING SUPPLIER'S QUOTATION

(This Form must be submitted only using the Supplier's Official Letterhead/Stationery)

We, the undersigned, hereby offer to supply the items listed below in conformity with the specification and requirements as per RFQ/01/18 Procurement, Installation, Testing and Commissioning of solar power to power proposed electric borehole pump for rural water supply in Bukembe, Kenya region

TABLE 1: Offer to Supply Goods Compliant with Technical Specifications and Requirements

Item No.	Description/ Specification of Goods	Unit of measure	Quantity	Material Lead Time (Days)	Unit Price (Currency_____)	Total Price per Item (Currency)
1	Solar Pumping Inverter with capacity – 4kW pump (3phase, 50hz, 415V) with automatic protection against short-circuit and the water level sensor in the water tower	set	1,0			
2	Solar Panels <i>(photovoltaic modular stations each with poly-silicon solar panel Grade A)</i>	set	1,0			
2.1	<i>Supporting bracket and combining framework for the installation of solar PV modules, and earth connection of the photovoltaic station</i>	set	1,0			
3	Wiring and BOS <i>All wires and connections including grounding</i>	set	1,0			
3.1	<i>Combiner Box (cabinet) to installation the controller to control the current power in the solar PV modules and power lines (Includes fuses & Disconnect switches)</i>	set	1,0			



Item No.	Description/ Specification of Goods	Unit of measure	Quantity	Material Lead Time (Days)	Unit Price (Currency_____)	Total Price per Item (Currency)
4	Electrical Works <i>Installation of electrical systems & testing – Estimate of man-hours to be provided by Contractor</i>	Man-Hour				
5	Civil Works <i>Installation of Mounting Structure – Estimate of man-hours to be provided by Contractor</i>	Man-Hour				
6	Permits & Fees <i>Anticipated regulatory financial obligations – itemize and provide corresponding citations</i>	Each				
7	Training <i>Instruction of onsite personnel for system operation and maintenance (Assume 8 hours)</i>	Man-Hour	8			
8	Additional Items As Required for full system installation					



CHILDREN'S CENTRE

Item No.	Description/ Specification of Goods	Unit of measure	Quantity	Material Lead Time (Days)	Unit Price (Currency_____)	Total Price per Item (Currency)
Total Prices of Goods						
Add: Cost of Transportation						
Add: Cost of Insurance						
Add: Other Charges (pls. specify)						
Total Final and All-Inclusive Price Quotation						



TABLE 2: Offer to Comply with Other Conditions and Related Requirements

Other Information pertaining to our Quotation are as follows :	Your Responses		
	<i>Yes, we will comply</i>	<i>No, we cannot comply</i>	<i>If you cannot comply, pls. indicate counter proposal</i>
Delivery Terms			
Exact Address/es of Delivery Location/s			
Project Schedule (Delivery, Construction, Testing, Commissioning, and Training)			
Shipping and Storage Requirements			
Payment Terms and Preferred Currency of Quotation			
Value Added Tax on Price Quotation			
Warranty and After-Sales Requirements			
Consulting services on any issues installing and working with the solar system:			
a) Consultation on the functionality of the products			
b) Minimum warranties on both parts and labour			
c) Technical installation supervision during installation of the equipment			
Validity of Quotation			
Copy of Valid license to perform work			
List of accomplished similar works for last (3) years, with the indication of the customers contact details			
Validity of Quotation for 180 days after RFQ due date			



CHILDREN'S CENTRE

ATTACHMENT 3: PROPOSED GROUNDWATER BOREHOLE PUMP

Position	Count	Description
	1	SP 8A-21  Product photo could vary from the actual product Product No.: 11701K21 Multi-stage submersible pump for raw water supply, groundwater lowering and pressure boosting. The pump is suitable for pumping clean, thin, non-aggressive liquids without solid particles or fibers. The pump is made entirely of Stainless steel DIN W.-Nr. EN 1.4301 and suitable for horizontal and vertical installation. The pump is fitted with a built-in non-return valve. The motor is a 3-phase motor of the canned type with a sand shield, liquid-lubricated bearings and pressure-equalizing diaphragm. Liquid: Pumped liquid: Water Maximum liquid temperature: 40 °C Max liquid temperature at 0.15 m/sec: 40 °C Liquid temperature during operation: 20 °C Density: 998.2 kg/m³ Technical: Rated flow: 8 m³/h Rated head: 90 m Shaft seal for motor: HM/CER Approvals on nameplate: CE,EAC Curve tolerance: ISO9906:2012 3B Motor version: T40 Materials: Pump: Stainless steel EN 1.4301 AISI 304 Impeller: Stainless steel EN 1.4301 AISI 304 Motor: Stainless steel DIN W.-Nr. 1.4301 AISI 304 Installation: Pump outlet: RP2 Motor diameter: 4 inch

Position	Count	Description
		Electrical data: Motor type: MS4000 Rated power - P2: 4 kW Power (P2) required by pump: 4 kW Main frequency: 50 Hz Rated voltage: 3 x 380-400-415 V Rated current: 9.75-9.60-9.80 A Starting current: 460-500-530 % Cos phi - power factor: 0.85-0.80-0.77 Rated speed: 2850-2865-2875 rpm Start. method: direct-on-line Enclosure class (IEC 34-5): IP68 Insulation class (IEC 85): F Built-in temperature transmitter: No Others: Minimum efficiency index, MEI $\geq$: 0.14 ErP status: Sold outside EcoDesign zone Net weight: 34.7 kg Gross weight: 39.5 kg Shipping volume: 57.1 m³