Request For Quotaion (RFQ)

(RFQNo.: RERL/009/2019)

of

Supply and Installation of Lightning Protection System in Dhading Solar PV Project in Benighat Rorang Rural Municipality, Dhading

Alternative Energy Promotion Center
Renewable Energy for Rural Livelihood
Financing Agency: Renewable Energy for Rural Livelihood (RERL)

Date: July 29, 2019

Information to theSupplier

S.	Subject	Details
1	The name of the Client	Renewable Energy for Rural Livelihood (RERL), Alternative Energy Promotion Center (AEPC) Khumaltar Height, Lalitpur Nepal
2	Method of selection	Cost-Based Selection (QCBS)
3	Name of the Task	Request for Quotation (RFQ) of Supply and Installation of Lightning Protection System in Dhading Solar PV Project in Benighat Rorang Rural Municipality, Dhading district, Nepal
4	The clauses on fraud and corruption in the contract	As per government and donor's rules and regulation
5	Clarifications may be requested	2 days before the submission date i.e. August 4, 2019
6	Contact for Clarification	Email: rerl@aepc.gov.np
7	Language of RFQ	English
8	The validity of the RFQ	**120** days after the submission date, i.e. until: December 4, 2019
9	Copies of required RFQ	One (1) Original
10	The RFQ submission address	Renewable Energy for Rural Livelihood (RERL), Alternative Energy Promotion Center (AEPC), Khumaltar Height, Lalitpur, Nepal, 3rd Floor in the AEPC building
11	Information on the outer envelope	Request for Quotation (RFQ) of Supply and Installation of Lightning Protection System in Dhading Solar PV Project in Benighat Rorang Rural Municipality, Dhading
12	RFQ Issued Date	July 29, 2019
13	Deadline to Submit RFQ	August 6, 2019
14	Award	Immediate after evaluation of the submitted proposal
15	Quotation Clarification	N/A
16	The assignment is expected to commence	August 10, 2019
17	Other Information	Complete BoQ with Technical Specification and supporting documents shall be highlighted and submitted
18	Other Provision	As per prevalent Laws of Nepal

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of
Supply and Installation of Lightning Protection System in Dhading Solar PV Project in Benighat Rorang Rural Municipality, Dhading

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1. Introduction

Three solar mini-grids of cumulative capacity of 4 kWp(solar photovoltaic system with storage), one integrated solar drinking and irrigation system and one solar micro industrial hub for productive end uses were installed, tested and commissioned in Benighat Rorang-2, Dhading, Nepal in November 2016 with the technical assistance of RERL. The project of total capacity 10.6 kWp was installed to provide electricity supply to the marginalized Chepang community for lighting their shelters, mobile charging, modern teaching, learning facility, drinking water and irrigation system and opportunity to operate micro-2 enterprises. A total of 46 households were benefitted from the project.

However, Solar PV system and transmission system installed at Rorang-2, Benighat, have been facing failures, and supply is being often disrupted due to lightning strikes on, and in the vicinity of the installation. A field assessment was carried out in order to investigate the status of the system and probable causes of the failures and hence to provide best solutions for the rehabilitation of undisrupted supply of the power. Based on the field assessment of each PV power station and system, a report was prepared which recommends a solutions for each location.

As per the recommendation, lightning protection system will be installed in all 5 sites to ensure the protection against direct lightning strikes. Vertical air terminals will be installed separately for power house and solar panel structure in mini-grids whereas individual air terminals will be installed for solar lift irrigation system and solar micro industrial hub system separately. The earth resistance in power house area of mini grids, saw and grinding mill and water lifting system were measured as follows:

i. Chotesh Solar Mini Grid: 226 ohm
ii. Thundrung Solar Mini Grid: 225 ohm
iii. Bangburti Solar Mini Grid: 88 ohm
iv. Solar Saw and Grinding Mill: 138 ohm
v. Solar Water Lifting System: 39 ohm

Since the earth resistance were much higher than required, revamping of earthing system was also recommended. In addition to this, an equipotential bonding will be created using bus bar by connecting earth termination (terminals from earth electrode) with AC/DC SPDs.

2. Objectives

Supply and Installation of Lightning Protection System in Dhading Solar PV Project in Benighat Rorang Rural Municipality, Dhading district as specified in the Bill of Quantities (BOQ).

3. Scope of Work

The task intends to call interested suppliers for supplying and installing Lightning Protection System in Dhading Solar Project in Benighat Rorang Rural Municipality,Dhading district.

The scope of this RfQ includes the completion of following, but shall not be limited, activities:

1. The supplier shall quote to supply and installation of the system as mentioned in this BoQ
2. The supplier shall coordinate with AEPC/RERL for clear understanding of scope of work and site conditions
3. The supplier shall perform installation as per the direction provided by AEPC/RERL representative and the drawings provided in Annex 1.
4. The supplier shall bring the earth resistance of earth electrodes at all 5 sites to at most of 5 ohm throughout the year.
5. The supplier must provide training on operation and maintenance of the lightning protection system to the local representatives.
6. The supplier shall provide detail specification of the system as proposed in this BoQ
7. The supplier shall meet all the requirement as mentioned in this BoQ
8. The supplier should strictly fulfill all the requirements mentioned in IEC 62305 –III and IV.
9. The supplier must highlight the description as in the Specification in the Technical Specification and other documents during submission of the RFQ.
10. The complete system included in this RFQ must be warranted against any manufacturing/design/installation defects for a minimum of period of Three (3) years.

4. Technical Specification

S.N.	Description of Material/ component	Specifications offered with compliance	Reference Document* (Specify Document)
I	**AIR TERMINATION SYSTEM**		
1	8mm Aluminum Solid Round Conductor meeting the requirements of IEC 62305 and IEC 62561-2		
2	Suitable Stainless Steel cross connector for 8 mm round Aluminum conductor meeting the requirement of IEC - 62305.		
3	2 m Aluminum Vertical Air terminal of diameter 8 mm with Complete Support of Wall Clamp meeting the requirement of IEC 62305, and tested for Electrical, Mechanical and Chemical as per IEC 62561.		
4	Conductor holder for fixing 8 mm Aluminum conductor on the frame of the solar panel meeting the requirement of IEC - 62305		
II	**DOWN CONDUCTOR SYSTEM**		
1	Conductor holder for fixing 8 mm Aluminum down conductor on the wall meeting requirements of IEC - 62305		
2	Test Joint with enclosure suitable connector for 8 mm round Al. conductor & 10 mm round copper coated conductor meeting requirement of IEC - 62305.		

3	10 mm copper bonded Round steel solid Conductor for earthing meeting requirements of IEC 62305 and IEC 62561-2		
4	Conductor holder for fixing wall down conductor after test joint for holding 10 mm copper bonded Round steel solid Conductor meeting requirement of IEC - 62305		
III	**EARTHING SYSTEM**		
1	Maintenance Free Copper coated Earth rod of 3 m length having a diameter of 25 mm with a copper coating thickness of 250 microns, tested for Dimension, Marking, Tensile Strength, and Salt mist, coating thickness, Electrical resistivity test before and after corrosion test as per IEC 62561-2. Earth enhancing (maintenance free) mineral compound tested for leaching and TCLP as per IEC 62561. Universal Clamp made up of stainless steel for terminating cable/flat conductor. Heavy duty Chamber Inspection Pit made up of plastic material.		
2	Stainless steel bus bar for connecting the earth termination and the down conductor as well as earth terminal of the AC/ DC system via SPDs meeting the requirement as per IEC 62305		

* The Bidder must provide IEC certificates as specified in the description of the product

Note: The bidder shall mention clause by clause comment of the required specification. The bidder shall state:-

- "**FULLY COMPLIANT**" if the item offered fully meet the quotation requirement.
- "**PARTIALLY COMPLIANT**" if the item offered to meet the requirement partially. The bidder shall state the reason why the offer is partially compliant. In such cases, the bidder shall clearly mention the extent to which other specifications are offered.
- "**NON-COMPLIANT**" if the item cannot meet the requirements. The bidder shall also state reasons for it.

5. Time

The duration of the task shall be 2 month from the date of signing the contract agreement with AEPC/RERL.

6. Force Majeure

Without prejudice to their right the Government and the service provider shall not be held responsible nor suffer any financial loss should the performance of the contract be delayed or prevented by an event of Force Majeure, which shall include, but not limited to strikes, riots, civil commotion, fire accident or any other incident beyond the control of either party hereto which

neither party was aware of or could have foreseen at the time of signing of this contract. In even of an occurrence of the Force Majeure, either party shall notify other of the event or during such event the rights and obligations of either party shall automatically be suspended.

7. Terms of Payment

This contract shall be a fixed price contract.

Amount of Percentage	Payment for Product
95%	After Completion of the Supply and Installation of Solar PV System
5%	Performance Security either cash or against bank guarantee

8. Duties and Taxes

The supplier shall pay all tariffs, duties, other taxes or charges levied by the Government of Nepal at any stage during the execution of the work.

9. Acceptance of Quotation

All rights are reserved with AEPC/RERL either to approve or disapprove any RFQ without giving any reasons whatsoever. If needed, the supplier will be asked for modifications and demonstrations of the product before approval. The quotation will also be evaluated based on the following criteria:

1. Adherence to the specification and quality of goods.
2. Price of the goods (and cost of other incidental services)
3. Past working experience
4. Warranty, Guarantee
5. Delivery Time Frames
6. Manufacture certificate

10. Evaluation Committee

Evaluation Committee will consist of members from:

AEPC

RERL

11. Deliverables

- Completion of supply and installation of the Lightning protection system
- Bring the value of earth resistance to less than 5 ohm
- Train local representative of the project site on operation and maintenance of Lightning protection system
- Submit Letter of Completion and Satisfactory Installation from Dhading solar project

12. Documents to be submitted by the Supplier

a. Complete Technical Specification with supporting documents with the highlight of the description as mentioned in **Technical Specification including IEC certifications.**
b. Document as mentioned in **Acceptance of Quotation**
c. Copy of Company/Firm registration certificate with updated renewal
d. Copy of VAT registration certificate
e. Copy of TAX clearance certificate
f. Timeline of Completion

*****Please see BOQ in the following page*****

13. Bill of Quantity (BOQ)

S.N.	Material/ component	Value	Unit	Total Quantity	Unit Rate (NRP)		Total amount
I	**AIR TERMINATION SYSTEM**				**In figure**	**In words**	
1	Aluminum Solid Round Conductor	diameter = 8 mm	Meter	**100**			
2	Stainless Steel cross connector	the diameter of 8 mm	Numbers	**20**			
3	Aluminum Vertical Air terminal with wall clamp	Length = 2 meter diameter = 8 mm	Numbers	**8**			
4	Conductor holder	diameter = 8 mm	Numbers	**50**			
II	**DOWN CONDUCTOR SYSTEM**						
1	Conductor holder	diameter = 8 mm	Numbers	**20**			
2	Test Joint	diameter = 8/10 mm	Numbers	**5**			
3	Copper bonded Round steel solid Conductor	diameter = 10 mm	Meter	**60**			
4	Conductor holder	diameter = 10 mm	Numbers	**20**			
III	**Earthing System**						
1	**Earthing Set**	3 m copper coated Earth rod of diameter 25 mm with copper coating thickness of 250 micron, earth enhancing material, stainless steel	**set**	**5**			

		universal clamp, heavy dusty chamber inspection pit of plastic					
2	Bus bar	Stainless steel	Numbers	**5**			
IV	**Installation**						
	Installation, Testing, and commissioning	Installation and testing of the earthing system	LS	1			
	Transportation	Transportation up to the site	LS	1			
	Grand Total without VAT/TAX						
	13 % VAT to VATable items						
	Grand Total (in figure)						
	Grand Total (in words):						

Annex I
Drawing