National Competitive Bidding (NCB) for Supplying & installation and Commissioning of Solar Renewable Energy Applications.

Bid No. SPMU/NCB/ICZMP/02/2017-18

Minutes of the Pre-Bid Meeting held on 05/09/2017

State Project Management Unit (SPMU), Gujarat Ecology Commission (GEC), ICZMP have invited National Competitive Bidding (NCB) for Supply, Installation & Commissioning of Solar Roof top system and Solar PV Pumps.

1. Pre-Bid Conference was held on 05/09/2017 in the Conference Room of SPMU, GEC at 1530 hrs.
2. List of participants on the side of SPMU, GEC as well as intending bidders is annexed hereto and marked as Annexure – 1. (c/755)
3. No representations from intended bidders were received in writing from intended bidders prior to pre-bid conference.
4. The representative of M/s. J J Solar Pvt. Ltd. had raised certain queries with respect to technical specification and relaxation of financial terms considering practical & ground situations.
5. The queries and observations raised by intending bidders have been examined and considered by SPMU, GEC. The matter has also been discussed with the GERMI, who is the advisory body of SPMU.
6. Considering the suggestions made by the intending bidders as well as the standard practices and specifications that are usually adopted within the country and outside for similar Solar adaptations, SPMU, GEC has decided, in consultation with GERMI to modify the specifications contained in the bid documents as under. These modified specifications will replace the specifications/clauses contained in the present bid document and be a part of the specifications in the contract to be awarded to the successful bidder. The Revised Specifications/clauses shall be as under:

Revised Specifications:

Sr.	Clause No. in the Tender	Page No.	Minutes Points & Remarks	Concluded Remarks
(1)	3 (ITB 38.2) – b, Package-1, Technical Qualificat	40	**Tender Clause:** 1. The bidder as a manufacture or supplier must have manufactured / supplied, Operated and Maintained of Solar photovoltaic **plants** with at least Engineering, Procurement,	**Tender Clause should be referred as:** 1. The bidder as a manufacture or supplier must have manufactured / supplied, Operated and Maintained of Solar photovoltaic

	ion, Sr. No. 1		Construction, Installation, Testing, Commissioning experience of cumulative 200 kW of solar photovoltaic plant with at least plant of minimum size 3 kW, which are under successful operation for at least one year as on date of bid opening for this package.	**power system** with at least Engineering, Procurement, Construction, Installation, Testing, Commissioning experience of cumulative 200 kW of solar photovoltaic plant with at least plant of minimum size 3 kW, which are under successful operation for at least one year as on date of bid opening for this package.
(2)	3.1.3	65	**Tender Clause:** The scope of work involves commissioning of the 3 & 5 kW solar photovoltaic rooftop system including **5 years** of comprehensive operation and maintenance (including replacement of non-working, poorly performing or worn out parts) with minimum of 74.5% annual performance ratio and minimum guaranteed generation as elaborated in Section 3.2.	**Tender Clause should be referred as:** The scope of work involves commissioning of the 3 & 5 kW solar photovoltaic rooftop system including **3 years** of comprehensive operation and maintenance (including replacement of non-working, poorly performing or worn out parts) with minimum of 74.5% annual performance ratio and minimum guaranteed generation as elaborated in Section 3.2.
(3)	3.1.5 , Sr. No. 4	66	**Tender Clause:** Grid connected PCU with remote monitoring system | **1 no. of 2 kVA** / 5 kVA as applicable	**Tender Clause should be referred as:** Grid connected PCU with remote monitoring system | **1 no. of 3 kV A** / 5 kVA as applicable
(4)	3.1.22.8	89	**Tender Clause:** **Performance Guarantee:** The Performance Ratio of Grid Connected Systems shall be more than 74.5%. The **minimum monthly guaranteed** generation shall be greater than **3.5 units / kW** on annual average basis.	**Tender Clause should be referred as:** **Performance Guarantee:** The Performance Ratio of Grid Connected Systems shall be more than 74.5%. The **minimum daily guaranteed** generation shall be greater than **3.5 units / kW / day** on annual average basis.

(5)	3.2.2.2	95	**Tender Clause:** The PV module must be Tier 1 Solar PV module.	**Tender Clause should be referred as:** **This clause is discarded from the tender.**
(6)	GCC 16.1, Sr. No. (iii)	138	**Tender Clause:** On Installation and commissioning: **Forty (40) %** of the Contract Price shall be paid	**Tender Clause should be referred as:** 1. On Installation and after issue of relevant certification by inspection committee of GEC: **Twenty (20)** % of the Contract Price shall be paid 2. After Commissioning & successful operation. And certification issues by committee of GEC: Twenty [20%] of the contract price shall be paid. The rest payment terms are as per the original tender conditions.
(7)	GCC 16.1. Sr. No. (iv)	138	**Tender Clause** On completion one **week** : Twenty (20) % of the Contract Price shall be paid on completion of one week of successful functioning of the Applications installed.	**Tender Clause should be referred as:** On completion one **month** : Twenty (20) % of the Contract Price shall be paid on completion of one month of successful functioning of the Applications installed.
(8)	Clause No. 3.1.22 "Guaranteed Performance"	87-90	**Old Clause to be referred from original tender**	**Annexure – 1: Modified Clause No. 3.1.22 "Guaranteed Performance***

7. The above amended specifications/clauses will become the integral part of the bid documents as well as the bid data sheet and the bidders shall have to cover their

bids in total compliance with these specifications without any deviation what so ever.

8. Bidders also requested for reconsideration of the Qualification Criteria contained in the Bid Document. SPMU-GEC clarified that the Qualification Criteria remains unchanged. Supplies to Government/Semi-Government/Public Sector undertakings and private organisations duly certified by such purchaser will be accepted while evaluating the Qualification parameters.
9. The last date of bid submission is extended up to 12.00 noon on 26th September, 2017. The bids will be opened on the same day at 4.00 p.m.

Annexure – 1: *Modified Clause No. 3.1.22 "Guaranteed Performance"

1. The daily average reference irradiation, daily average temperature for solar PV off-grid system are given in below table. Bidder shall offer the minimum average daily energy generation in terms of kWh/day against reference radiation condition which is equal or more than the **"Guaranteed Energy Generation (kWh/day)"** as described in the below given table:

Month	Global Horizontal Irradiance (kWh/m^2)	Diffuse Horizontal Irradiance (kWh/m^2)	Ambient Temperature (˚C)	Guaranteed Energy Generation (kWh/day)
January	4.03	1.67	18.8	11
February	4.89	1.89	22.0	13
March	5.86	1.82	26.8	14
April	6.30	2.23	31.1	14
May	6.82	2.48	33.4	14
June	5.68	3.42	32.1	12
July	3.94	3.14	29.6	9
August	3.92	3.10	28.2	9
September	4.26	2.55	28.0	10

October	4.80	2.11	28.0	12
November	4.12	1.75	24.1	11
December	3.81	1.46	20.8	11
Year	**4.87**	**2.30**	**26.9**	**11**

2. For the purpose of plant acceptance at the time of system commissioning, **Instantaneous Power Performance Ratio abbreviated as "IPPR" measured in terms of percentages (%)** which is a measure of the quality of a PV plant and which is independent of location and insolation (power in solar radiation) and therefore often described as a quality factor shall be employed. The *IPPR* is stated as percent and describes the relationship between the actual and theoretical energy outputs of the PV plant instantaneously. It thus shows the proportion of the power that is actually available for export to the grid after deduction of system losses.

2.10. The procedure for performance monitoring is derived based on the standard IEC 61724 – PV system performance monitoring: Guidelines for measurement, data exchange and analysis.

2.11. Calibrated Solar sensor, two temperature sensors (ambient and module temperature) and anemometer shall be installed by the bidder at the location of the PV power plant for measurement of **"IPPR"** in percentage at the time of offering performance demonstration of the system to GEC.

2.12. **Performance Guarantee: Instantaneous power performance ratio (IPPR) in percentage (%)** for the purpose of present assignment shall be minimum 74.5%. Calculation of IPPR shall be carried out as described below.

2.13. **Instantaneous power performance ratio (Instantaneous PR in percentages)** of the system shall be calculated as below.

Instantaneous Power Performance Ratio:

$$Instantaneous\ PR(\%) = \frac{Output\ (in\ kW\ AC)\ of\ grid-connected\ inverter}{GHI\ (\frac{kW}{m2}) * Surface\ Area\ of\ SPV\ System\ (m2)} * 100$$

Note: IPPR to be measured when (GHI) is minimum 800 W/m2. For GHI less than 800 W/m^2, guaranteed PR to be discounted in percentages on linearly (proportionate) basis.

2.14. However, If due to bad weather or any other technical reasons, it is impossible to measure the IPPR with accuracy by the method described above, system shall be certified for its performance to offer guaranteed performance and shall be accepted if average daily output

(per kW) recorded by inverter for past one month is exceeding 3.5 units / kW / day.

2.15. The test shall be observed by GEC team at location of installations.

3. GENERAL CONDITIONS: APPLICABLE TO ALL THE SYSTEMS

Component	Applicable IEC/equivalent BIS Standard	
	Standard Description	**Standard Number**
Power Conditioners/Inverters	Efficiency Measurements Environmental Testing	IEC 61683 IEC 60068-2
Cables	General Test and Measuring Methods PVC insulated cables for working Voltages up to and including 1100 V, UV resistant for outdoor installation	IEC 60227/IS 694 IEC 60502/ IS 1554(part I & II)
Switches/Circuit Breakers/Connectors	General Requirements Connectors -safety	IS/IEC 60947 part I,II,III EN 50521
Junction Boxes/Enclosures for inverter/ charge controller/ luminaries	General Requirements	Enclosures IP 54 (for outdoor)/IP 21 (for indoor) as per IEC 529

* Must additionally conform to the relevant national/international Electrical Safety Standards

All DC cables should be solar grade cables only and AC cables shall be UV resistant for solar application, concealed in galvanized/ UPVC cable trays with minimum 3 cm clearance from the terrace/ rooftop floor.

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