बड़ौदा यू.पी.बैंक
Baroda U.P. Bank

CORRIGENDUM

RODEO/2022-23/PE/GEN /168 दिनांक :29.06.2022

Please refer to Bank's Tender Ref No. :RODEO/2022-23/PE/GEN/140 Dated : 16.06.2022, **" Selection of Vendor for Supply, Installation & Commissioning of Solar Power Packs on Hiring Basis For different Branches under Deoria Region"**

The following addition have been made in the Terms & condition of the tender through this corrigendum

TECHNICAL SPECIFICATIONS

GENERAL TECHNICAL SPECIFICATION:

A Standalone or Off-Grid Solar Photovoltaic (PV) Hybrid power generator / plant proposed will compromise of Solar PV modules of the given capacity, with battery bank, necessary Power Conditioning Unit/electronics, interconnecting cables/wires, module mounting structures, necessary grounding/earthling, etc. Solar system will be Hybrid with an option to integrate with AC Grid.

The SPV Power Shall have a minimum capacity of 7.5 KVA with a suitable battery backup. The power plant provides a reliable and independent power supply for critical AC loads. The UPS should be designed to convert DC power produced by the SPV modules into AC power and adjust the voltage and frequency to desired level.

The Capacity and type of Solar Power Plant

S.N.	Type of Solar Power Generator/ Plant	Hybrid Solar UPS Capacity &Type	Battery Capacity / Configuration	No of Batteries
1	Solar PV Module For 7.5 KVA, 24 No. 335 Watt PV Module	7.5 KVA/180 Volt Single phase	150 AH/12V LMLA C10 tubular Solar Battery	**15 No's**
2	For 10 KVA, 32 No. 335 Watt PV Module	10 KVA/180 Volt Single Phase	200 AH/12V LMLA C10 tubular Solar Battery	**15 No's**

A. MINIMUM TECHNICAL REQUIREMENTS/STANDARDS:

1. SPV MODULES:

i. Only Indian made Modules (IEC and BIS Tested) of reputed brand shall only be used in the plant.
ii. Crystalline high power efficiency cells shall be used in the Solar Plant.
iii. PV module junction box should be IP 67 protection rated. And front glass should be high transmission, low iron, tampered glass and module shall be with stand min 150 km/hr wind speed.
iv. Module frame should be anodized aluminum alloy frame.
v. Module should be zero negative power tolerance.
vi. PV module must be warranted for Product Warranty minimum of 12 years and Linear Performance Warranty for 25 years with no more than 3% degradation in 1st year and 0.07% from year 2 to 25.
vii. PV Module should compliance with IEC 60068-2-68:1994, IEC 62716:2013 and EN

62716:2013, IEC 61701:2011 and EN 61701:2012, 62804-1:2015, IEC 61215-1:2016, EN 61215-1:2016, IEC 61215-1-1:2016, EN 61215-1-1:2016, IEC 61215-2:2016, EN 61215-2:2017, IEC 61730-1:2016, EN IEC 61730-1:2018, IEC 61730-2:2016 and EN IEC 61730-2:2018 . The bidder shall submit appropriate valid test certificates. The minimum validity of test report should be till March 2023.

viii. The offered Solar module performance test report issued from authorized MNRE/NABL/IEC/ILAC test lab should be submitted.

ix. PV modules must have other features PID Resistance Technology, Multilayer EVA encapsulation for enhanced protection.

x. Each PV module must have sticker inside the module with the following information:

a) Name of the manufacturer of PV Module
b) Month and year of the manufacture of module
c) Made in India
d) Unique Serial No and Model No of the module
e) Following data maybe provided outside in such a way that it should not pull out during harsh environment condition: Peak wattage, Im, Vm and FF for the module.

Test reports/ certificate from IEC/NABL/ILAC accredited laboratory to be mandatorily enclosed for relevant IEC and BIS Standards.

2. Balance of System (BOS) Items/Components:

The BOS items/components of the SPV power Plant/systems deployed must conform to the IEC and BIS standards/MNRE specifications/as specified below:

BOS Item	Applicable BIS and IEC standard or MNRE specifications	
	Standards Description	**Standard Number**
Cables	General Test and Measuring Method PVC insulated cables for working voltage and UV protected for outdoor installation	TUV certified DC Cables
		IEC 60228
		IS 694
Switches/Circuit breakers/connectors with SPD	General Requirement Connectors – AC / DC Safety	IEC 529
		SPD As per IEC 61643-11/12
		IEC 60947, part I, II and III / IS 60947 part I, II and III
Junction Boxes/ Enclosures Box	General Requirements	IP 55 / IP 65
Earthing and Lightning Protection	General Requirements	IEC 62561-7

3. Module Mounting Structure

I. Galvalume Module Mounting Structure (MMS) with AZ-150-550 mpa strength consisting of Hot Dip Galvanized leg insert.
II. Module fixed tilt angle should be 20-28 degree tilt.
III. There shall be a minimum air gap of 25 mm between the facing edges of two adjacent modules on all sides.
IV. Each panel frame structure shall be fabricated as to be grouted on Roof on its legs.
V. A weather proof junction box as per the relevant specifications is to be provided where the module terminals shall be interconnected and output taken.
VI. All nut bolts, and fasteners should be made of SS304 Grade.

VII. The structure should be designed to allow easy replacement of any module and shall be aligned with site requirement.

VIII. The structure should be designed for simple mechanical and electrical installation.

IX. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels.

X. It will be designed to withstand wind speeds of up to 150 Km/hr.

XI. The systems should be installed at ground level / roof top at least the height of 450 mm with CC block size should be as per Staad reaction force and leg fixing method.

XII. The legs of the structures made with hot dip GI member will be fixed and grouted in the RCC foundation columns made with 1:2:4 cement concrete. The foundation should be as per design of structure to withstand maximum wind loading.

4. Battery Rack/Trolley

Battery stand/rack of suitable size with roller for installation of Solar Tubular Batteries shall be provided.

5. Electrical Connections

High quality TUV certified copper wires/DC cables of reputed makes are to be provided for connecting Solar Modules, from junction box to PCU, and Battery of suitable cross sectional area in order to minimize loss not more than 2%.
A suitable connection point shall be provided to the consumer from PCU, at a distance not more than 03 meters, from where consumer shall have its own wiring to the use points

6. EARTHING & LIGHTNING PROTECTION

i. Chemical Earthing Electrode with Earth Enhancing compound with Dia.14.2mmx2.0mm long steel rod with 250micron Copper coated earthling electrode suitable for 18KA fault current along with 10kg earth enhancing chemical blackfill compound as per IEC 62561- 7 and 1 no. industrial Poly propylene plastic pit cover.

ii. 16 Sqmm Copper Cable for Earthing.

iii. Lightning Arrester - 2.0 meter long 16mm dia. with five spike and base plate made in high grade aluminum with copper coating Lightening.

7. Solar Battery :

I. Only Indian Branded Batteries of reputed brand shall be used in the plant.

II. Battery shall have a warranty/design life expectancy of min 5 years not more than 2 battery banks should be connected in parallel for better battery life.

III. Battery terminal shall be provided with covers suitable carrying handle shall be provided capacity of the battery bank shall not be less than as specified above at C-10 rate.

IV. Battery shall have a design life expectancy of >5 years at 50% DOD at 27°C.

SPECIFICATIONS OF SOLAR UPS

The details of solar charge controller and UPS should be as under:
Solar UPS OEM will take responsibility for all equipment's batteries, panel, Inverter required for desired output on its letter head

1. SOLAR CHARGE CONTROLLER:

Solar Charge controller should be an MPPT type only such that it tracks the maximum power point of PV panels all the time to maximize PV generation. MPPT charger should include below minimum features:

i. Solar charger should be enclosed in a single unit along with UPS.

ii. All the parameters of solar charger should be displayed on a common display on the front panel.

iii. Three stage battery charging (float, boost & equalize stages) for long life of the battery should be ensured in the Solar Charger topology.

iv. Battery current limiting feature should be provided so as to avoid overcharging of batteries and charger should limit the current going in the batteries in such a situation.

v. Battery & PV reverse polarity protection to be provided

vi. Rated MCCB/ MCB on all PV inputs & battery inputs.

2. TECHNICAL SPECIFICATIONS

Sl. No.	PARAMETERS	SPECIFICATIONS
4.1	UPS Type	ONLINE
4.2	Output Voltage	220 Volts ± 1% Single phase, 3 wire output
4.3	Output Frequency	50Hz ± 0.5% during standalone UPS operation.UPS to follow generator frequency up to ± 3 Hz of the nominal output frequency during synchronized operation
4.4	Continuous Rating	7.5 / 10 KVA (from 0-50 degrees)
4.5	Surge Rating	Up to 150% of the continuous rating for a minimum of 5 seconds
4.6	Battery Nominal Voltage	180 V DC.
4.7	Waveform	Sine wave output
4.8	THD	Less than 5%
4.9	Efficiency	>90% peak efficiency
4.10	Regulation	Better than 2%
4.11	Internal Protection System	• UPS overload • Short circuit protection • Over/under AC voltage protection • Over/under frequency protection • Over/under battery voltage protection
4.12	Circuit Breakers	• PV (each Channel) • Battery • Mains • Load
4.13	Environmental	
4.14	Operating Temperature Range	0-50 degrees ambient
4.15	Humidity	0-90% non-condensing
4.16	Enclosure	IP-20 minimum

- All other Terms & Condition shall remain same as mentioned in our Tender notice RODEO/2022-23/PE/GEN/140 Dated : 16.06.2022.
- Kindly keep on checking our website **https://www.barodaupbank.in/tender.php** to get latest updates regarding this tender notice.
- Last date & time for receipt of tender bid will be extended to 15.07.2022 till 11:00 am from 07.07.2022.
- Date & time of opening of Bid will be 15.07.2022 at 02:30 pm.

Chief Manager