

TENDER REF. No.: PAKIS/RFP/23/014

Specifications for the Components

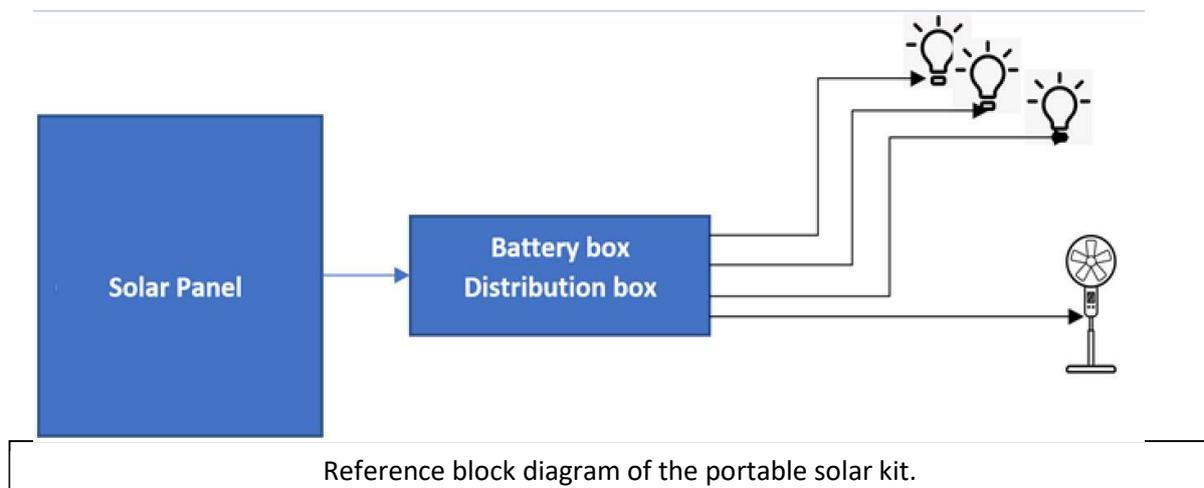
FOR PROCUREMENT OF PORTABLE SOLAR KITS

This annexure presents the minimum requirement required to be met by the VENDOR. A vendor must meet and adhere to these minimum specs. All the costs shall be included in the financial bid. UNHCR will not be responsible for any additional cost arising because of the equipment not considered in the financial bid.

• Components of the Solar Kit

The solar kit must be modular and plug-and-play, each kit must have the following components. Detailed description of each component is provided separately. The kit will operate on low voltage DC. A block diagram of the system is also provided for reference. The kit shall be in proper and safe packing to avoid any damage during transportation.

Appliance	Description
Certification	VeraSol certified and Waltek certified product family preferred. Product family must be IEC TS 62257-9-8 certified
Solar panel	For powering the whole system. Minimum 80 Watts with a maximum weight of 7 kg.
Distribution Box or Main Unit	The unit shall have ports for connecting the appliances and charging a mobile phone. The connecting ports on the unit shall also symbolically show light/fan/mobile ports.
Battery	28 Ah, 12V, Lithium ion contained inside the main unit
Lights	3 light bulbs, each of 3 Watt totaling to 9 Watt power. Each light shall have at least 5 meter DC wire (cord) with connection to the battery unit and a power on/off button.
Fan	One pedestal fan of up to 12 to 15 Watts power. The fan shall have shall have at least 5 meter DC wire (cord) with proper connection to the battery unit and a power on/off button.
Warranty	12-months warranty covering entire system and excluding LED Bulbs.



- **Solar Panel**

Parameter	Specification
	The PV module is separate (modular) and not integrated so it can be placed anywhere.
Applicable Standard ¹	IEC TS 62257-9-8 or CE Certification
Ambient Temperature Range	-10°C ~ +50°C
Type	Polycrystalline
Minimum Power	80 W at STC ²
Performance Warranty	≥ 80% of Maximum Power after 10 years
Module Efficiency	≥ 18%
Connecting Wire (Panel to Main Unit)	≥ 15 meter
Physical Ingress Protection	IP3X or (IP2X with circuit protection)
MPPT	Yes
Connectivity Cable	Wires, cables, and connectors are appropriately sized for the expected current and voltage. IP2X for all products, IP5X for fixed outdoor products. Any outdoor cables must be outdoor rated and UV resistant.
Weight	≈ 7.0 kg
Dimensions	Vendor to specify, but as compact as possible

- **Distribution Box / Main Unit**

Parameter	Specification
	The main unit shall house the battery and shall have all the connectivity ports and indicators display. This unit shall be portable, preferably with a portable handle for easy movement. The connectivity ports shall have graphic icon of each appliance to be connected to the port.
Applicable Standard	IEC TS 62257-9-8 or CE Certification
Portable	Yes – preferably with a handle for easy movement
Dimensions	Vendor to specify but as compact as possible
Material	Vendor to specify the material of the container unbreakable, but properly insulated and safe to use in any environment. Due to occasional (limited) exposure to rain, water protection must be included.
Circuit and Overload Protection	This product must include a current limiting mechanism
Status indicators	<ul style="list-style-type: none"> • Battery status indicator • Solar strength indicator
Ports	The container box shall contain suitable ports for connectivity the appliances. Each port shall have a small icon on the port (of the appliance to be connected) for easy understanding. Ideally, the ports for lights, fan and mobile charger shall be different than one another. Ports must meet voltage requirements.

¹ Unless otherwise specified, latest editions of IEC standards shall be applicable

² STC (Standard Test Conditions): Irradiance of 1000 W/m² (1 kW/m²) with the panel and cells at ambient temperature of 25°C with a sea level air mass (AM) of 1.5.

	<ul style="list-style-type: none"> • Minimum 3 ports for connecting the light bulbs • 1 port for connecting the pedestal fan • Min 1 USB – A port for charging mobile phone
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- **Battery**

Parameter	Specification
Applicable Standard	IEC TS 62257-9-8 or CE Certification
Ambient Temperature Range	-10°C ~ +50°C
Type	Lithium ion. No hazardous ban such as cadmium or mercury at levels greater than trace amounts allowed.
Rated Capacity	28 Ah
Rated Voltage	≈ 12 Volts
Float Charge Voltage	Vendor to specify
Max. Charging Current	Vendor to specify
Max. Discharge Current	Vendor to specify
Internal Resistance	Vendor to specify
Protection	Suitable charge controller and overcharge protection
Weight	Vendor to specify

- **Lighting/Bulbs**

Parameter	Specification
Applicable Standard	IEC TS 62257-9-8 or CE Certification
Type	LED
Number of light bulbs	Three (03)
Current type	Direct Current (DC)
Power	≈ 3 Watts for a single bulb
Voltage	≈ 12 Volts
Light output	Minimum 280 Lumens for each bulb
Screw Type	E27
Lumen maintenance	Not less than 90 % after 2,000 hours of run time
Number of settings	Minimum 1. Each light must have a power on/off button
Cable/Cords	Yes – PVC Insulated DC cable as per applicable IEC/BS standards
Wire length	Minimum 05 meters for each bulb

Parameter	Specification
Connectivity ports and sockets	Each bulb with proper socket at one end for the bulb and to a connector for the main unit at the other end. The wire shall be properly insulated.

- **Pedestal Fan**

Parameter	Specification
Pedestal (standing) fan with copper wire and energy efficient durable motor. The fan shall be completely sealed with rustproof material.	
Number of Fans	01
Current type	Direct Current (DC)
Power	12 Watts to 15 Watts
Voltage	≈ 12 Volts
Number of settings	Minimum 2 for varying the speed of fan.
Side-ways movement	Yes
Cable/Cords	Yes – PVC Insulated DC cable as per applicable IEC/Standards
Wire length	Minimum 05 meters
Connectivity ports and sockets	Wire properly connected to the fan at one end and to a connector to the main unit at the other end. The wire shall be properly insulated.
Material	Any suitable rustproof material, completely sealed with proper insulation as per IEC TS 62257-9-8
No of blades	03
Height	≥ 16 inches. Adjustable with a knob/button.