

For its solar projects located in Greater Beirut, OSAS is requesting a quotation for the following items:

1- OFF-GRID HYBRID INVERTER (3.6 – 4 kW) AS PER THE FOLLOWING SPECS:

- Battery input type: **Sealed, Flood, GEL, LFP, Ternary**
- Rated Battery Input Voltage (VDC): **24 (Min. Startup Voltage = 22V)**
- Hybrid Maximum Charging Current (A) = **80**
- Battery Voltage Range:
 - o **20Vdc~33Vdc ± 0.3Vdc (Undervoltage Warning/Shutdown Voltage/Overvoltage Warning/Overvoltage Recovery...).**
- Rated Output Voltage Range: **220/230 Vac**
- Rated AC Output Power (W): **3600 or 4000**
- Grid Connection Form: **L/N/PE**
- Rated Output Grid Frequency: **50/45-55 Hz.**
- Total Current Harmonic Distortion THD i: **<3%.**
- Humidity Range: **5% to 95% (Conformal Coating Protection).**
- Equipped with Multiple Safety Protection functionality.

2- OFF-GRID HYBRID INVERTER (5.6 kW) AS PER THE FOLLOWING SPECS:

- Pure sine wave MPPT solar inverter with status LED and colored LCD screen.
- Supports **Lithium** batteries in addition to other type of flooded batteries (such as **Lead-Acid** type ... etc.).
- Rated Battery Input Voltage (VDC): **48**
- Floating Charge Voltage (VDC): **54**
- Overcharge Protection (VDC): **66**
- Hybrid (Solar or AC) Maximum Charging Current (A) = **100**
- Rated Output Voltage Range: **220/230 Vac**
- Rated AC Output Power (W): **5600 W**
- Maximum PV Array power (W): **6000 W**
- Grid Connection Form: **L/N/PE**
- Rated Output Grid Frequency: **50/45-55 Hz.**
- Total Current Harmonic Distortion THD i: **<3%.**
- Humidity Range: **5% to 95% (Conformal Coating Protection).**
- Equipped with Multiple Safety Protection functionality.
- Wide PV input voltage range
- Built-in Wi-Fi for mobile monitoring (Android/Ios App available)
- Supports USB On-the-Go function
- Data log event stored in the inverter
- Reserved communication port (RS485, CAN-BUS or RS232 for BMS).
- Battery independent design
- Battery equalization extending lifecycle
- Enhanced charging battery
- Built-in anti-dust kit.

3- PV PANELS AS PER THE FOLLOWING SPECS

- a. HALF-CELL MONOFACIAL MONOCRYSTALLINE SILICON MODULE.
- b. Power output range of **550-570 W (up to 22.1% efficiency)**.
- c. No. of cells: **144**
- d. Dimensions (approximate): **2278 x 1134 x 30 mm**
- e. Weight (approximate): **+/- 27.5 kg**
- f. Full tempered glass.
- g. Output cables and length: **4.0 mm², (-/+) 350 mm or more in length.**
- h. Junction box: **IP68 rated (3 bypass diodes)**
- i. Operating Module Temperature: **-40 °C to +85 °C**
- j. Maximum System Voltage: **1500 V DC (IEC)**
- k. Maximum Series Fuse Rating: **25 A**
- l. Power Tolerance: **0/+5 W**
- m. Anodized aluminum alloy frame
- n. Maximum Operating Voltage @STC (Vmp/V): **42.76**
- o. Optimum Operating Current @STC (Imp/A) (approximate): **~13.3**
- p. Open Circuit Voltage @STC (Voc/V) (approximate): **~50**
- q. Short-Circuit Current @STC (Isc/A) (approximate): **~14**

4- LITHIUM BATTERY:

- Nominal Voltage: **48V**
- Nominal Capacity: **200Ah**
- Nominal Energy: **9.6kWh**
- Recommended Charge Current: **100A**
- Cycle life: **≥ 6000 cycle, @80% DOD @25°C @0.5C rate.**
- Design life: **15+ years.**

5- SOLAR WATER HEATER OF 200L (OPTIONAL ITEM)

THIS ITEM CAN BE QUOTED SEPARATELY.

- Tank Volume Capacity: **200 liters.**
- Heat pipe solar collectors.
- Collector Panel Size (Approximate): **2.2-2.5 square meters.**
- **Aluminum** Frame and **stainless steel** for tank material.
- Thermal Efficiency: **up to 80%.**
- High Heat transfer efficiency due to advanced heat pipe design.
- System pressure: **Typically, up to 8 bar** (dependent on design).
- Roof-mounted and compliant with relevant local and international standards.
- Equipped with Temperature Gauge and all necessary protection and safety features.



All solar items should be Tier 1 and made by Top manufacturers; **Deye, Voltronic Power, Sungrow, Growatt ... etc.** for solar inverters; **Pylontech, Everexceed ...etc.** for Lithium Batteries, and **LONGi, Suntech, Jinko Solar ... etc.** for solar panels.

Please fill in the excel sheet attached to this document and send your quotations to osas.beirut@gmail.com by 31st of January 2025 along with all related documentation and datasheets. ***Selection is based on competitive pricing.***