RFQ\_Section\_lll\_part 2:

Technical Specifications Questionnaire to be filled by the bidder

## Lot 1: PV Solar

**Technical specifications for goods – Comparative Data Table**

| **No.** | **Item Description** | **Is quotation compliant?**  **Bidder to complete** | **Bidder’s Offer**  **specifications** |
| --- | --- | --- | --- |
| **1** | **PV Modules:**   * solar panels not less then 330 W   - The module type must conform with CE and IEC 61215, IEC 61730, IEC 61701 or equivalent standards   * should be comprising of either mono-crystalline or polycrystalline;   - Module conversion efficiency should be equal to or greater than 19 % under STC;  - The PV manufacturer should be approved as tier-1;  - The rated output power of any supplied module shall have tolerance of 0-5 W;  - The module shall be provided with a junction box with IP67;  - The supplied module DC voltage should be not less than 1000 VDC;  - The product warranty should be at least 10 years. | Yes  No | Bidder to insert details |
| **2** | **Mounting Structure:**   * Cold-formed galvanized steel with a minimum galvanization thickness of (80-120) microns as per technical specifications and drawings. | Yes  No | Bidder to insert details |
| **3** | **Battery Inverter:**   * Single Phase, Pure Sine wave, 230 V, 50 Hz, including all accessorries required for parallel operation as per technical specifications and drawings   - The inverter shall produce pure sine wave form with provision for battery charger, and it can be configured individually or in parallel;  - Output frequency shall be 50 Hz;  - Total Harmonic Distortion shall be less than 3%;  - Designed for indoor enclosure IP 20;  - Maximum efficiency should be not less than 90 % at full load;  - To be certified to meet at least CE and UL marking and complaint with IEC 62109;  - The device should be integrated with LED indicators and LCD display;  - It shall allow adjustment of battery voltage and charging current;  - The device shall allow connection to grid and/or backup generator(s);  - The charging function of the inverter/charger shall include battery charging functionality; and the inverter shall be wired in ways that make use of the inverter’s battery charging functionality if the installation includes either mains power or a diesel generator.  - Protections required: AC overload and load short circuit, overvoltage, overheating and battery reverse polarity;  - The inverter shall allow internet connection for remote monitoring;  - Product warranty shall be 5 years. | Yes  No | Bidder to insert details |
| **4** | **Storage Battery(s):**   * Battery bank voltage shall be 48 voltswith built in battery rack as per technical specifications.   - Batteries shall be Gel type OPzV 2V cell, the rating shall be calculated @ 10 Hr discharge rate;  - Battery cyclic life shall be at least 2500 cycles at 50% depth of discharge (DOD), third party test reports shall be provided proofing the battery lifecycle.  - Reliable performance at high operating temperatures of up to 50° C;  - The operating temperature for the battery shall be -20°C to +55 °C;  - Product warranty shall be 2 years; warranty certificates shall be provided by the manufacturer;  - Battery Rack with built in busbars should be configured for 48 VDC, powder coated with a corrosion resistant acid proof powder, the battery rack busbars shall be covered. | Yes  No | Bidder to insert details |
| **5** | **Charge Controller:**  MPPT type, efficiency not less than 92 %,   * 85 A @150 VDC input voltage, as per technical specifications   - Maximum Power Point Tracking (MPPT) type;  - PV charging efficiency at least 92%;  - Controller must utilize passive cooling (not fans);  - Should allow parallel operation, i.e more than one unit can be connected in parallel;  - Controllers to be certified CE or UL and to meet at least one for the following or equivalent standards IEC 62509 or IEC 62093;  - The device should have LED or LCD display;  - Product warranty shall be 5 years. | Yes  No | Bidder to insert details |
| **6** | **DC Combiner Box:**  - 5 input, 1 output DC Combiner Box;   * - The DCCB to be provided for termination of connecting cables. The DCJB shall be made of metal or UV resistant material and suitable for outdoor installation,IP65,   - All wires/cables must be terminated through cable lugs;  - DC output circuit: In accordance with the maximum current X 1.25, 1000 VDC breaker;  - DC fuse rating for each string:1000V, 15 A;  - Built in surge protection device;  - Product warranty shall be 2 years.. | Yes  No | Bidder to insert details |
| **7** | **Data Logging & Monitoring System.**   * The contractor shall provide necessary hardware and software to measure and/or record energy parameters such as output voltage, consumed current, output frequency, power and energy). * The system should be capable to operate through GSM, contractor should provide all accessories needed such as sim card and modules. | Yes  No | Bidder to insert details |
| **8** | **Cables and Wires.**  **DC cable.**   * Should be TUV certified with double insulating material and jacket, made of tinned copper, stranded type, the insulation is also flame retardant. Soft annealed tin-coated flexible stranded copper per ASTM B-33 and EN 60228, TUV certified, Insulation: Halogen-free, thermoset polyolefin specifically designed for maximum flexibility, and Jacket: - Black/Red, low smoke non-halogenated, flame retardant, oil, abrasion, chemical and sunlight resistant cross-linked compound meeting UL 44, UL 854. * Standards IEC 60228, IEC 61537, ISO, IEC 60227/IS 694, IEC 60502/151554.   **AC cable.**   * XLPE cables shall be used for indoor / outdoor installation. * Standards IEC 60228, IEC 61537, ISO, IEC 60227/IS 694, IEC 60502/151554. | Yes  No | Bidder to insert details |
| **9** | **Essential Load Main Distribution Board**   * The distribution board should allow flexibility to connect switch disconnections, MCCB, MCB, RCCB, RCD or direct cable. * Internal connection should be through bus bars the bus bar rating should be at least 200 A. * three phase, 400 V. * Ingress protection must be at least IP41. * Enclosure material should be galvanized steel sheets. * Fault level: at least 25 kA. * Minimum Number of ways as per drawing   - Bidders are advised to use high quality breakers preferably Schneider, ABB or equivalent.  Warranty: at least 1 year. | Yes  No | Bidder to insert details |
| **10** | **Manual Transfer Switch**   * The contractor shall provide MTS for each location in line with the drawings and specifications below: * Wall mounted type; * Made of steel; * UL 1008 Listed. | Yes  No | Bidder to insert details |
| **11** | **LED light Fixture**   * Power: Not less than 20 W; * Mount type: Surface Mount; * Color: White; * Lamp luminous efficacy: not less than 100 lm/W; * Housing: Metal; * Input Voltage and frequency: 220-240V, 50 Hz; * Working Lifetime (Hour): at least 15,000 h; * Certification: All related certificates shall be provided such CE, RoHS; * Warranty at least 2 year. | Yes  No | Bidder to insert details |
| **12** | **LED light Bulb**   * Power: 9 W;   - Lamp luminous efficacy: not less than 90 lm/W;  - Cap type & base: bayonet bulbs- B22d-BC/ E27;  - Color temperatures (CCT): 5000 K to 6500 K;   * - Input Voltage and frequency: 220V, 50 Hz;   - Working Lifetime (Hour): at least 15,000 h;  - Operation temperature rang: up to 50°C;  - Certification: All related certificates shall be provided such CE, RoHS;  - Warranty: at least 2 year. | Yes  No | Bidder to insert details |
| **13** | **LED Outdoor light.**  - LED outdoor light shall withstand all the weather and working conditions and corrosive environment;  - LED light 30 W;  - Lamp luminous efficacy: not less than 90 Im/w;  - Voltage rating: 220-240 VAC, 50 Hz ±2%;  - Working life time: not less than 15,000;  - The color temperature range: 5000K – 6500K;  - Deigned with IP 65 protection;  - Operating Temperature range: up to 40°C;  - Certification: All related certificates shall be provided such CE, RoHS;  - Wall Mounted type;  - Warranty: at least 2 year. | Yes  No | Bidder to insert details |
| **14** | **Fire Extinguisher**   * A portable fire extinguisher shall be provided, 2 extinguishers for each facility should be supplied one to be placed near to the control room and the other one placed near the MDB; * Fire extinguisher 5 kg carbon dioxide (CO2); * Fire extinguisher 6 kg powder; * Warranty: at least two years. | Yes  No | Bidder to insert details |
| **15** | **Earthing and Lightening System**  - lightihg arrester shall be copper.  - All metal casing/shielding of the system and its components should be thoroughly grounded;  -Earthing pit  - The earth resistance should not be more than 5 Ohm.  - Earthing installation in accordance with the IEE Wiring regulations, BS 7671  - All conductive materials shall be copper.  - The size of conductor shall be according to table 54.7 of IEE – BS 7671 – IEC 60365-5-54. | Yes  No | Bidder to insert details |
| **16** | **Air Conditioning.**   * Split unit inverter type. * 1 RT Spilt Air Condition * Adjustable fan speed;   - Capacity: 12,000 BTU;  - Single phase;   * Noise level shall not exceed 45 db. * Star rating 3 star or above; * Suitable for wall mounting * Outdoor unit shall be housed inside metal gage made of mild steel | Yes  No | Bidder to insert details |
| **17** | **Smoke & Heat Detector**   * Shall be located inside the control room; * Include button for false alert; * Battery life not less than three years; * Warning sound delivers sounds of >85 Db. | Yes  No | Bidder to insert details |
| **18** | The supplier should have physical presence in the city with their own facilities in order to check their capability to provide the materials and maintain the solar PV System if required during the warranty period | Yes  No | Bidder to insert details |
| **19** | Bidder confirms that the warranty period will be provided as per section\_ll\_schedule of requirements | Yes  No | Bidder to insert details |

## Lot 2 : Generator

## 50-60 Kva Diesel Generators

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| **#** | **UNOPS minimum technical requirements** | **Is quotation compliant?** Bidder to complete | **Details of goods offered.** Bidder to complete |
|  | **1) Manufacturer's Name**  **2)Country of Origin**  **3)Brand /Model No**  **4)Year of Manufacture** | ☐ Yes ☐ No | Please provide the details of offered product |
| 1 | 50-60 KVA Generator (3 phase) set including the diesel engine, alternator, control panel, automatic starting equipment, fuel tank with a **built-in** canopy suitable for outdoor installation | ☐ Yes ☐ No | Insert details of goods offered, including specifications and brand/model offered if applicable |
| 1.1 | **Engine**  **Fuel Type:** Diesel  **Cooling:** Water-cooled diesel Engine, 50˚C radiator cooled.  **Governor:** Electric  **Starting system:** 12 Volt DC motor, lead acid battery with charging system.  **Speed :** 1500 RPM, direct injection  **No. of Strokes:** 4  **Air System:** Turbocharged. | ☐ Yes ☐ No | Insert details (if required) |
| 1.2 | **Output / Performance**  **Rating:** 50-60 KVA (Prime)  **Voltage:** 380-415 V  **Frequency:** 50 Hz  **( AVR ) :** Automatic Voltage Regulator | ☐ Yes ☐ No | Insert details (if required) |
| 1.3 | **Batteries:**  lead acid batteries with charging system suitable for start-up of 50-60 KVA Generator. | ☐ Yes ☐ No | Insert details (if required) |
| 1.4 | **Control Panel:**  Set mounted Auto start control panel in IP 23 sheet enclosure complete | ☐ Yes ☐ No | Insert details (if required) |
| 1.5 | **Connection to ground:**  The generator should be with connection to ground system comprising low resistance rod(s), terminals, cables, etc | ☐ Yes ☐ No | Insert details (if required) |
| 1.6 | **Wiring & connectivity:**  Connectivity of generator with main DB at the distance of 80 meter using suitable size of cable. | ☐ Yes ☐ No | Insert details (if required) |
| 1.7 | **Warranty:** One year whichever occurs first from the date of start Up  **•Attend any minor service/repair/ breakdown within 6 hours upon request.** | ☐ Yes ☐ No | Insert details (if required) |
| 1.8 | **Canopy:**  The generator set mounted in a sound attenuated and weather protective canopy, to reduce the noise level down to 84 dB(A) at a  distance of 1 meters | ☐ Yes ☐ No | Insert details (if required) |
| 1.9 | **Fuel Consumption**: max 15 Ltr/ hour at 100% load.  Specific fuel consumption: 0.287 Ltr/ Kwh less is preferable | ☐ Yes ☐ No | Insert details (if required) |
| 1.10 | Availability of spare parts and after sale service in Al-Dhala’a, Yemen | ☐ Yes ☐ No | Insert details (if applicable) |
| 2 | **MTS Panel:**  Complete MTS (Manual Transfer switchboard 100 amps,4p ) between New DG 50-60KVA and main public network. | ☐ Yes ☐ No | Insert details (if required) |

The offered goods and related services (if applicable) are in accordance with the required specifications and requirements specified in **Section II: Schedule of Requirements above**.

Yes  No

ANY DEVIATION MUST BE LISTED BELOW:

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**Delivery requirements and Comparative Data Table:**

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| **UNOPS Requirements** | | **Is quotation compliant?** Bidder to complete | **Details**  Bidder to complete |
| **Delivery time** | Bidder shall deliver and install the goods within 120 Days (less lead time in delivery is preferable) DAP after Contract signature. | Yes  No | Insert details |
| **Delivery place and Incoterms rules** | Delivery at Place DAP to Al Aden and Locations mentioned in the section ll: schedule of requirements. | Yes  No | Insert details |
| **UNOPS Right to vary requirements** | At the time the Contract is awarded, UNOPS reserves the right to vary the quantity of the goods and associated services specified above, provided this does not exceed +/- 20%, without any change in the unit prices or other terms and conditions of the RFQ. | Yes  No | Insert details |