**Technical Specifications Questionnaire to be filled by the bidder**

**eSourcing reference:ITB/2024/26802**

**A- General Notes:**

* The purpose of the Technical Specifications Questionnaire is to emphasise the most important project technical criteria\requirements for unfamiliar Materials, Equipment AND/OR Goods in the local market. However, the contractor is obliged to provide, during the project implementation, submittals for the approval by UNOPS, all relevant specific technical data sheets. The Materials, Equipment AND/OR Goods to be provided under the Project shall be in full conformity with the Technical Requirements of this tender (Technical Questionnaire, BoQs, Drawings, Technical Specifications, etc.)
* The Bidders shall highlight in yellow in the data sheet/catalogues the selected models of the Materials, Equipment AND/OR Goods.
* Bidders are advised to use high quality materials/equipment, all of which shall comply with the Codes of Practice and the highest prevailing standards.

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

| **Rehabilitation of Mufti Hassan Khaled Garden** | | | | |
| --- | --- | --- | --- | --- |
| **No.** | **Item Description** | **Is quotation compliant?**  **Bidder to complete** | **Bidder’s Offer**  **Specifications**  **(Provide Specs, and proof of compliance with the Scope of Work and Technical Specifications: Technical Catalogues and Data sheets with cross reference to the exact models selected).**  **Bidder to complete** | **Indicate Manufacturer’s Name, Model Reference, etc.**  **Bidder to complete** |
| **1** | **PV Modules** | | |  |
| **1.1** | The module rated power should be at least 600Wp at STC, for a total not less than 48 KWP | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **1.2** | The rated output power of any supplied module shall have positive tolerance: up to 3 % | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **1.3** | Solar PV panel conversion efficiency should be equal to or greater than 20 % under STC | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **1.4** | PV modules must be crystalline silicon PV modules that comply with the norm IEC 61215 edition 2 and shall be qualified to and be classified as Class A or B according to IEC 61730. | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **1.5** | PV panels should be procured from tier-1 manufacturers (as per the latest Bloomberg Tier 1 manufacturer listing) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **1.6** | The PV panels must have a minimum manufacturing warranty of 10 years and a performance warranty of a minimum of 25 years | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **1.7** | Mono Crystalline Photovoltaic with 144 half-cut cells | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2** | **Battery Energy Storage System** | | | |
| **2.1** | **Hybrid Inverter 50 KW** | **☐ Yes ☐ No** | **Bidder to insert details** | **Bidder to insert details** |
| **2.2** | Hybrid inverter shall be provided as shown on the drawings and schedules and in the bills of quantities with at least fourMPPT per inverter | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.3** | Should be capable of charging battery banks and supply AC current from battery storage rack | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.4** | Three Phase Output Range 380-400 Volts / 50 Hz frequency | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.5** | Wide MPPT Range preferably covering the range between 400-800 Volts | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.6** | The ‘European Efficiency’ of the inverter shall be a minimum of 96% | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.6** | Shall be able to communicate with the battery BMS and be equipped with data collection and communication through RS485, Ethernet, Modbus TCP/IP, CAN, etc | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.7** | Minimum warranty of 5 years for inverters | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.8** | Batteries should be supplied with their respective battery management system (BMS). Batteries should be installed in enclosed rack system | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.9** | HV battery bank 200KWh with racks and protection devices and BMS Batteries to have more than 5000 cycles with 80% DoD | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.10** | Batteries to be compatible with the proposed inverter | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.11** | Working Temperature covering the range 0-50 deg C | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **2.12** | Minimum warranty of 10 years for batteries | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **3** | **DC & AC Cabling and Cable Routing** | | | |
| **3.1** | All cables and connectors used for the installation of the solar array must be of solar grade robust and durable in harsh environmental conditions including High temperatures, UV radiation, rain, humidity and dirt as per IEC standards | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
| **8** | **Mechanical Equipment** | | | |
|  | Capability of supply, installation and testing and commissioning of DX split unit, wall mounted, heat pump, inverter type, 12000Btuh. (2 Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of DX split unit, wall mounted, heat pump, inverter type, 9000Btuh. (7Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of DX split unit, ducted horizontal concealed, heat pump, inverter type, capable of covering a cooling load of 8.75KW (1Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of exhaust air fan, wall mounted, covering 135L/s @ 85Pa. (1Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of exhaust air fan, wall mounted, covering 25L/s @ 50Pa. (4Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of exhaust air fan, wall mounted, covering 105L/s @ 85Pa. (1Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of exhaust air fan, wall mounted, covering 50L/s @ 50Pa. (1Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of exhaust air fan, inline centrifugal, covering 50L/s @ 50Pa. (1Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of booster pump, covering 7m3/h @ 31m. (1Set) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of booster pump, covering 13m3/h @ 51.5m. (1Set) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of booster pump, covering 2.9m3/h @ 29m. (1Set) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply, installation and testing and commissioning of end suction centrifugal pump, covering 500GPM @ 50m. (1Set) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply and installation of triple layer vertical water tank, capacity 1,000L. (1Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply and installation of triple layer vertical water tank, capacity 4,000L. (3Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |
|  | Capability of supply and installation of triple layer vertical water tank, capacity 8,000L. (3Nos) | ☐ Yes ☐ No | Bidder to insert details | Bidder to insert details |

The offered goods and related services (if applicable) are in accordance with the required specifications and requirements specified in “**Technical Specifications” documents.**

☐ Yes ☐ No

ANY DEVIATION MUST BE LISTED BELOW:

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**3- Delivery requirements and Comparative Data Table:**

| **UNOPS Requirements** | | **Is quotation compliant?** Bidder to complete | **Details**  Bidder to complete |
| --- | --- | --- | --- |
| **Delivery time** | Bidder shall deliver and install the goods within **210 Calendar Days** (less lead-time in delivery is preferable) DAP after Contract signature. | ☐ Yes ☐ No | Insert details |
| **Delivery place** | Delivery at Place (DAP) as mentioned in the tender documents. | ☐ 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 ITB. | ☐ Yes ☐ No | Insert details |