



## **RURAL ELECTRIFICATION AND RENEWABLE ENERGY CORPORATION**

### **CLARIFICATIONS; RFX1000001062**

*Tender for Supply, Installation, Testing, and Commissioning of Arabia Solar Mini-grid Battery Replacement and System Maintenance; RFX 1000001062*

#### **DESCRIPTION OF ELECTRICAL COMPONENTS INSTALLED**

##### **1. Solar PV Modules (Jinko Solar)**

The Solar Modules are made of Silicon Crystalline Photovoltaic each of 270Wp capacity at STC. The total number of modules installed is two hundred and forty-eight 248.no making a total installed capacity of 66.96 kW. The modules are arranged in four arrays of sixty-two 62.no each with three strings where each string has (21, 21 & 20) solar PV modules which are connected to one grid-tie inverter giving a total capacity of 16.74kWp in each inverter. The modules are mounted on a strong structure that can support the weight of the modules.

##### **2. PV Grid-Tied Inverter (Sunny Tripower 15000TL)**

There are four (4. no) PV Grid-Tied Inverters each rated 15kW making a total installed capacity of 60kW. The grid-tied inverter converts the DC power from the solar generator into alternating AC power which ties with the primary source of power from the battery inverter chargers at the busbar. Each inverter is connected to sixty-two (62 no.) solar modules.

##### **3. Battery Inverter Charger (Sunny Island 8.0H-13)**

There are twelve (12no.) bi-directional sinusoidal Battery Inverter Chargers each rated 8kW and grouped into four clusters of three inverters connected in a master-slave configuration making a total installed capacity of 96kW with an input DC voltage of 48V.

##### **4. Battery Storage (Ritar Battery)**

It consists of ninety-six 96no. 2V mono blocks of 856Ah at C10 each, they are connected in four strings of twenty-four 24no batteries in series making a system voltage of 48VDC and a total capacity of 164.35 kWh. Each string is connected to one cluster of battery inverters through a DC fuse.

##### **5. Diesel Generator (Cummins)**

The Diesel Generator is a 3-phase 60kVA, 415V at 50 Hz. It has a highly corrosive-resistant enclosure, control panel, monitoring, fuel tank, and circuit breaker protection. It is installed outdoors and can accordingly communicate with the battery inverter charger. The diesel generator works in a fully automatic manner with the above-stated components.