

support structures with appropriate diagrams and drawings. The work shall be carried out as per the designs approved by owner.

The structure should be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels. The minimum clearance required from the parapet wall of the roof and in between row of panels is minimum of 2 feet for cleaning the panels and servicing. The bidder shall specify installation details of the PV modules and the support structures with appropriate diagrams and drawings. The work shall be carried out as per the designs approved by the procuring entity.

### **3. Junction Boxes**

The junction boxes shall be dust proof, vermin and waterproof and made of FRP / Thermo Plastic. The terminals shall be connected to copper bus bar arrangement of proper sizes. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and outgoing cables. Suitable markings shall be provided on the bus bar easy identification and cable ferrules shall be fitted at the cable termination points for identification. Each main junction box shall be fitted with appropriate rating blocking diode.

### **4. Power Conditioning Unit (PCU) / Solar Inverter**

As SPV array produce direct current electricity, it is necessary to convert this current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic inverter and the associated control and protection devices. All these components of the system are termed the "Power Conditioning Unit (PCU)". In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array and the inverter, to maximize Solar PV array energy input into the system. PCU including MPPT and protection must conform to IEC 61683/IS 61683, IEC 60068-2 (1,2,14,30) / Equivalent BIS Std.

The contractor shall be a duly qualified and accredited by the PCU/Inverter manufacturer to install, maintain, monitor and provide technical support for the PCU/Inverter.

### **5. DC and AC Switches**

#### **a. DC Side**

MCB of suitable rating shall be provided for connection and disconnection of array and PCU for maintenance purpose. Switches and circuit breakers on DC side shall be DC rated or they shall be sufficiently de-rated, if AC rated switches are used.

#### **b. AC Side**

MCB of suitable rating shall be provided for connection and disconnection of PCU and load.