

# Technical Details

## 1. Survey:

- a. System Location with Geographic Coordinates:
- b. Source of Water:
- c. Irrigation Land Area (Kattha):
- d. Total Head (m):
- e. Water Requirement (liter/day):

## 2. Design:

### I. System Voltage:

### II. Solar Array

- a) Solar Array Capacity (Wp):
- b) Capacity of each Solar Module (Wp): Total No of Solar Modules :
- c) Manufacturer Name:
- d) Brand/Model :
- e) No of Solar Modules in a string (x):
- f) No of Parallel Strings (y):
- g) Design Calculations (Mathematical calculation/ Simulation / Performance Curve):
- h) Catalogues:
- i) RETS Certificates:

### III. Pump

- a) Pump Type: submersible:  Surface:
- b) If Surface,  
Suction head (m): Delivery head (m): Total Head(m):
- c) Manufacturer Name:
- d) Brand/Model:
- e) Pump Capacity (HP):
- f) Design calculations for Pump selection and sizing (Mathematical calculation/ Simulation / Performance Curve):
- g) Catalogues:
- h) IEC certificate/Test report:
- i) Controller:
  - i. Rating (amp/watt):
  - ii. Manufacturer name:
  - iii. Model/Brand:

#### **IV. Cable**

- a) Manufacturer Name:
- b) Brand :
- c) Cross sectional area (sqm):
- d) Cable Length (solar array to Pump):
- e) Maximum Voltage Drop between PV Modules and Pump (shall be  $\leq 3\%$ ):
- f) Cables shall be PVC insulated, weather resistant and suitable for a wide temperature range (Yes/No):
- g) UV Resistant (Yes/No):

#### **V. Protection System**

- a) Air Termination System:
  - i. Length of the Air terminal rod above the PV array: .....m
  - ii. Diameter of the air terminal rod..... mm
  - iii. Material of air terminal rod: Aluminum / copper / copper bonded.
  - iv. Comply with IEC 62305
  - v. Technical datasheet of Air termination system
- b) Down Conductor:
  - i. Cross sectional area of Down Conductor:..... mm<sup>2</sup>
  - ii. Material of Down conductor: Copper / Aluminum / GI/ Copper bonded
  - iii. Comply with IEC 62305
  - iv. Technical datasheet of Down Conductor
- c) Earthing:
  - i. Length of the earth electrode:..... m
  - ii. Diameter of the rod :....mm
  - iii. Comply with IEC 62305
  - iv. Technical datasheet of Earthing system
- d) Surge Protector:
  - i. SPD is DC Type
  - ii. SPD of Type 2
  - iii. Manufacturer Name :
  - iv. Brand /Model:
  - v. Comply with IEC 61643-31:2018
  - vi. Technical Datasheet

**VI. Delivery Pipe**

- a) Pipe type:                      GI:                       HDPE:                       Other:  .....
- b) Pipe diameter :
- c) Pipe length (m):

**VII. Mounting Structure**

- a) Mounting structure material (shall be of aluminum or steel angles and channels with properly galvanized):
- b) Mounting structure shall be non-corrosive (Yes/No):
- c) Tilt angle:
- d) Orientation of solar panel:
- e) Foundation type for mounting structure:
- f) Clearance between ground level and bottom edge of PV modules (shall be >0.8m):
- g) Fasteners used for fixing structure shall be non-corrosive (Yes/No):