HALONIX The Right Light	**HALONIX TECHNOLOGIES PRIVATE LTD.** **Regd office: B**-31, Phase II, Noida, Dist. Gautam Budh Nagar, Pin Code: 201305, Uttar Pradesh.	**PROPOSAL OF SOLAR POWER PLANT**

TECHNICAL PROPOSAL FOR ROOF-TOP OFF–GRID SOLAR POWER PLANT 30KW

Document no.	**HTPL/SPP/007/003/2019/TECHNICAL**
Client Name	**CPWD, Orrisa**
Location	**Kobara Battalion, Sunabeda, Koraput, Odisha-763001**
Plant Type & Capacity	**OFF- Grid & 30KW**
Date	**11/07/2019**
Rev. No.	**00**
Prepared By	**AS**

1. Contents:-

2. Why Solar – Advantages & Benefits:-

Solar Cell or photovoltaic cell (PV), is a device that converts light into electric current using the photovoltaic effect.HALONIX SOLARAN Solar Power Plant are ideal for the area in remote/urban location where the Electricity Is unavailable or erratic. Solar Power Plant suitable for urban & rural areas, to reduce dependency on Conventional power, Industries to reduce electricity bills and contribute towards greener energy. Use of solar energy, highly reliable, energy efficient, Green energy & long Life makes this solution effective in overcome crisis of energy demand todays, in future.

KEY FEATURES

- Simplest system and most cost effective to install.
- Highly reliable, ecofriendly Power generation system.
- Highly efficient inverter and PV modules for more power generation.
- No monthly electric bill / reduction in Electric bills.
- Long life PV with more than 25 years life span.
- Battery backup for cloudy or rainy days.
- Low maintenance, except for battery.
- Best suitable for areas where electricity unavailable or erratic.
- Best suitable for urban area- reduce dependency on mains power.

OFF-GRID SOLAR SYSTEM

The term off-grid refers to not being connected to a grid, mainly used in terms of not being connected to the main or national electrical grid. In electricity, off-grid can be stand-alone power system or mini-grids typically to provide a smaller community with electricity.

An off-grid system has several different features as well. This type of solar electric system is *not* connected to the electrical grid. Instead, it relies on batteries to store the electricity generated by the solar panels for use when the system is not generating enough to sustain household functions, for example, at night. Because it is completely separate from the electrical grid, the power will remain on for the household or building even in the event of a widespread power outage; in a grid-tied scenario, the solar power system must shut off during a power outage for safety reasons. However, it is important to consider the space required to store the batteries, as well the added expense to purchase them. Additionally, off-grid systems cannot take advantage of SRECs, because the electricity never flows back to the utility grid

ADVANTAGE OF OFF-GRID SOLAR SYSTEM

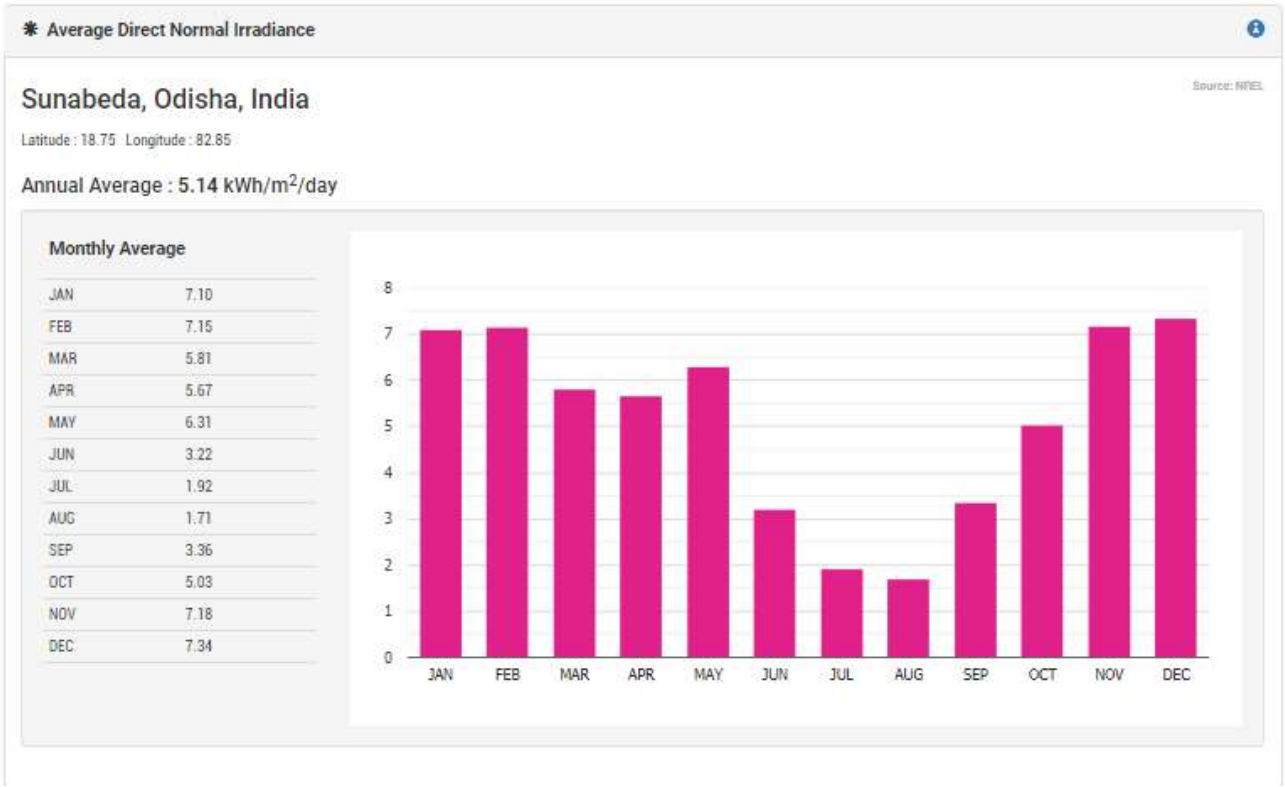
- Off Grid –Solar Power Plant is very much suitable to the area where electricity is not available or erratic.
- A Off - grid photovoltaic power system will reduce the power bill.
- A photovoltaic power system is carbon negative over its lifespan, as any energy produced over and above that to build the panel initially offsets the need for burning fossil fuels. Even though the sun doesn't always shine, any installation gives a reasonably predictable average reduction in carbon consumption.

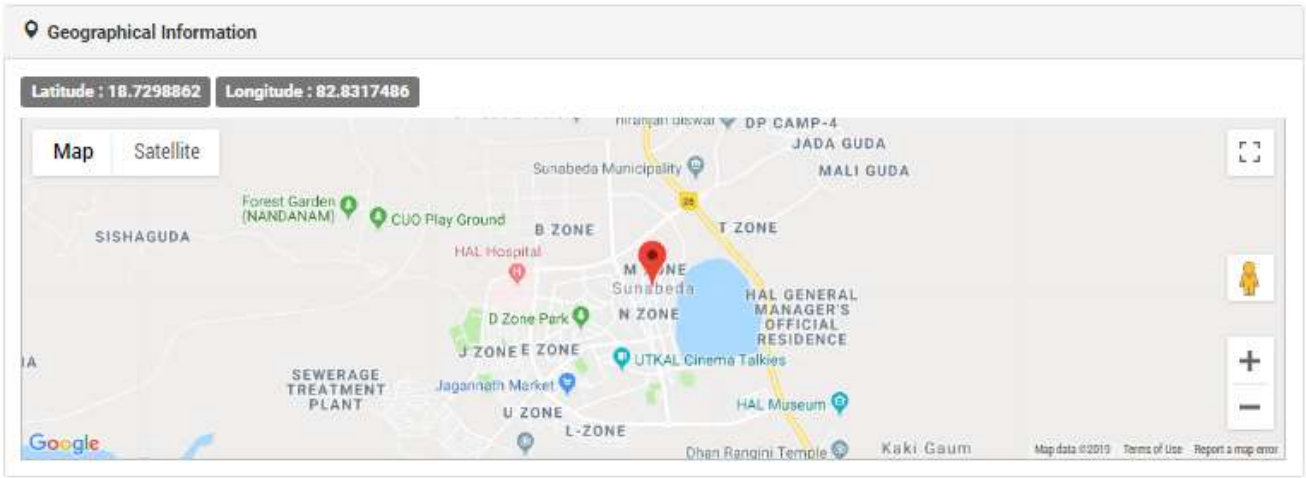
3. Geographical Location & Weather condition

Project Name & Owner: - CPWD, Odisha.

Project Location: Kobara Battalion, Sunabeda, Koraput, Odisha-763001

Project Co-Ordinates:- Latitude: - 18.75 **N°**, Longitude: - 82.85 **E°**





4. Key Component and specification for 30 KW OFF GRID SOLAR POWER PLANT

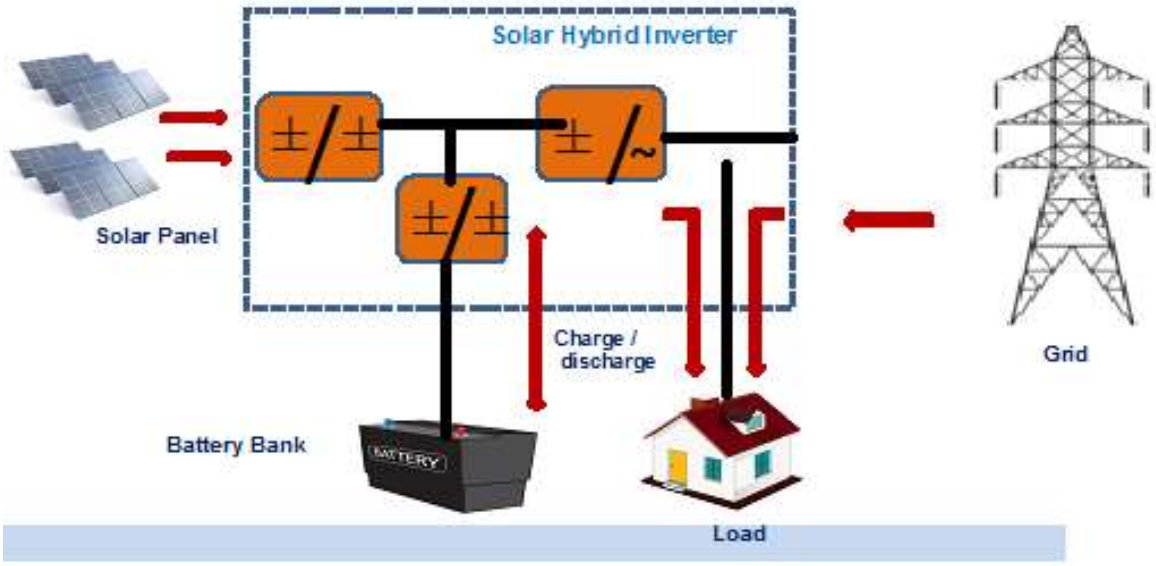
1. STANDARD SPECIFICATION

1. This specification presents typical requirement of Off Grid solar power plant.
2. Solar Power Plant is mainly composed of solar module, inverter, Battery and distribution box which can be applied to AC powered electrical appliance according to the parameters of the components.

2. HIGHLIGHTS

- High quality and World renowned PV modules manufactured in India by collaboration with Solar Panel Manufacturer.
- IEC/MNRE/TUV Tested solar Panel.
- Reduces the power consumption considerably
- Highly reliable and zero maintenance
- All system as per MNRE standard or State Govt. Standard.

3. BLOCK DIAGRAM (Off- grid Solar Power Plant)



3. SCOPE OF SUPPLY FOR Off-GRID SOLAR POWER PLANT – 30KW

1) **Detailed Design :-**

- Detailed layout design
- Detailed civil design (buildings, foundation)
- Electrical detailed design
- Construction plans
- Project schedule

2) **Supply :-**

- Solar Panel Multicrystalline IEC/TUV Certified Make Vikram Solar/ Waree/ Neosol/ IB Solar equivalent - (30 KWp)
- Solar Inverter (Off grid) -30 KVA- 360VDC/ 3Phase (UTL / Statcon or Eqvt Make)
- Battery Bank – 360V/ 500Ah, LMLA Flooded battery cell of 2V/500AH.
- JBs IEC Standard (ABB/Schneider/Eqvt)
- Mounting Structure (Galvanized 80 micron as per IS Standard)
- Cables / Connectors IS :694/1990 1.1 KV Grade (AVOCAB/UNIFLEX/AXIOM/Eqvt)
- BOS

3) **Erection and Commissioning :-**

- Project Management and Supervision
- Foundation construction
- Module assembly
- Mounting frame construction
- Electrical site works
- Commissioning and testing

4) **Area required: -** Flat south facing Shadow free area - 300 Sq. Meter for 30 KW OFF-Grid Solar Power Plant & additional space for battery & Inverter.

5. Preliminary BOM (Subject to Final Design):-

S.No.	Item	Description	QTY	UOM	Make	Remark
1	PV MODULE	Poly Crystalline PV Module (300 - 325Wp)	30KW	KW	Waree /Vikram Solar Navitas/Neosol/IB Solar ,or Equivalent Make	As per MNRE Standard
2	Solar Inverter	30KVA -360VDC/ 3 Phase (Or suitable for Project) Solar Off grid Inverter.	01	Nos	UTL / Statcon Or Equivalent highly Efficient Make	As per MNRE Standard
3	Battery	360V/500AH LMLA battery Bank, 2V/500AH LMLA flooded batt. cell	01	SET	Power build/HBL/NED or Equivalent	As per MNRE standard
3	Module Mounting Structure	As per site drawings (Hot dip galvanized iron)	01	Lot	Highly efficient and robust	
4	DC Power Cable	4 sq mm Single Core, Cu 1.1kV,DC Solar Cable	100	Mtr	Polycab/Finolex/Havells/or Equivalent make	
5	AC Power Cable	10 sq mm single core, Cu AC Power Cable	30	Mtr	Polycab/Finolex/Havells/or Equivalent make	
6	Lighting Arrestor (2 nos) & Earthing System (3 nos)		01	SET	VSAFE, JMV	
7	ACDB (AC distribution box) & AJB (Array junction box)		01	Nos	As per Standard solar industry	
9	Workmanship (Installation and Commissioning)					HTPL

We look forward to receiving your acceptance of our offer, and assure you of our best services if given an opportunity to serve your organization. Thanking You

Regards

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