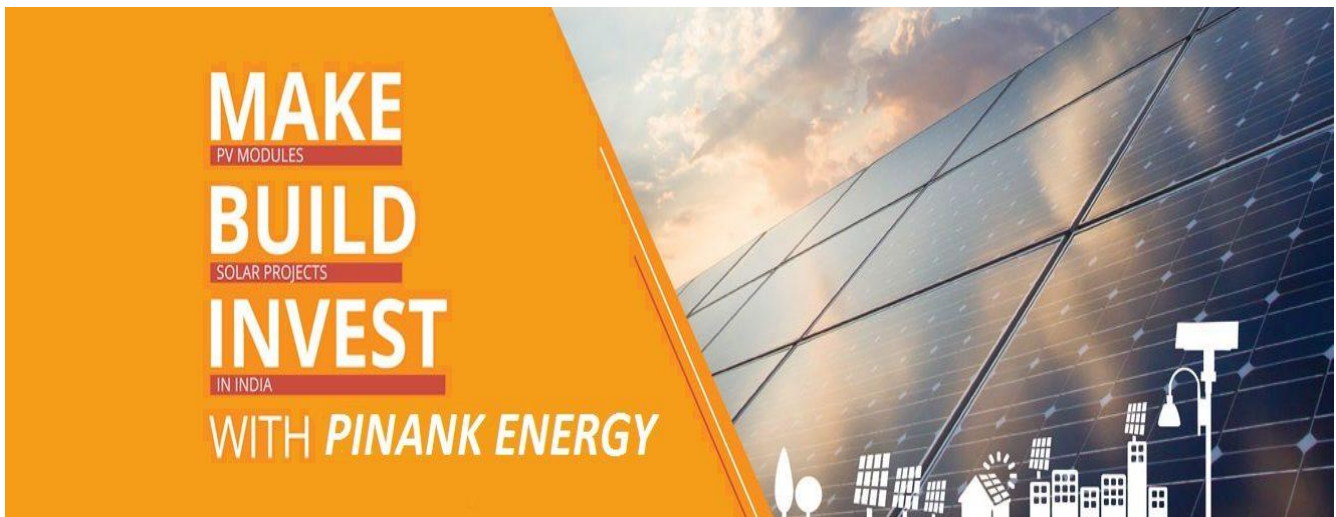




PINANK ENERGY

An ISO 9001: 2015 (QMS) Certified Company

Channel Partner: Ministry of New and Renewable Energy, Govt of India



PROPOSAL FOR:

ROOF-TOP SOLAR PV PLANT

Pinank Engineering and services LLP

SF 214, Durga Tower, Raj Nagar District Centre (RDC) Ghaziabad 201001

Contact no: 7065113344, 7065554433, 8755100111, 0120- 4123298



Pinank Energy has been approved by the **Ministry of New and Renewable Energy (MNRE)** as their **Channel Partner** for undertaking Grid-Tie and off-grid projects. With support of MNRE, we offer complete solution to all the Residential, Commercial, NPO/Government applicants for solar roof-top power plants Program. We at Pinank energy integrate our technologies to attain maximum output and maintain highest standards. Few of the system features includes:

- **High efficiency PV Modules**
- **High efficiency Solar Power Conditioning Unit**
- **Energy metering as per MNRE requirements**
- **Protection as per IEC standards**
- **Solar Low Maintenance Tubular Battery with upto 5 year warranty**
- **25 year power output warranty for modules**
- **System warranty for 5 years***
- **Avail various Subsidy Scheme provided by the government***
- **Avail Tax benefits using Solar Power Plant for reducing Income Tax**



Bill of Material for OFF-GRID SPP:

S.No	Description	Make and model	Quantity
1	Solar PV Module	Vikaram/Canadian/Su-kam/Waaree/Havells Solar Panel (Poly Crystalline) (25 year manufacturer Warranty)	As required
2	Solar Power Conditioning Unit	Delta/UTL/Su-kam/ Schneider/Havells Solar Inverter or PCU (Warranty as per manufacturer)	1
3	Module Structures	Galvanized Iron Structure for 96 panels	1 set
4	Solar grade DC cables	Havells/Polycab/V-Guard	As per requirement
5	Solar grade AC cables	Havells/Polycab/V-Guard	As per requirement
6	DC Junction Box	MNRE approved	1 set
7	AC Metering and Distribution Box	MNRE approved	1 set
8	Battery Bank (for Off Grid only)	Su-kam/Exide/Luminous/ Solar Tubular Battery (150Ah @ S10) MNRE approved	As required

Proposed Cost of The Project:

S.No	Type of Solar Power Plant	Estimated cost Per watt	Total Project cost
1	Off Grid Solar Power Plant 1 KWp	Rs 90/- Per Watt	Rs. 90,000/-
2	Off Grid Solar Power Plant 2 KWp	Rs 89/- Per Watt	Rs. 178,000/-
3	Off Grid Solar Power Plant 5 KWp	Rs 85/- Per Watt	Rs. 425,000/-
4	Off Grid Solar Power Plant 7.5 KWp	Rs 85/- Per Watt	Rs. 637,500/-
5	Off Grid Solar Power Plant 10 KWp	Rs 83/- Per Watt	Rs. 830,000/-
6	Off Grid Solar Power Plant 15 KWp	Rs 82/- Per Watt	Rs. 1,230,000/-
7	Off Grid Solar Power Plant 20 KWp	Rs 80/- Per Watt	Rs. 1,600,000/-
8	Off Grid Solar Power Plant 25 KWp	Rs 78/- Per Watt	Rs. 1,950,000/-



Bill of Material for ON-GRID SPP:

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Proposed Cost of The Project:

S.No	Type of Solar Power Plant	Estimated cost Per watt	Total Project cost
1	Grid-Tie Solar Power Plant 2KWp	Rs 75/- Per Watt	Rs. 150,000/-
2	Grid-Tie Solar Power Plant 5KWp	Rs 73/- Per Watt	Rs. 365,000/-
3	Grid-Tie Solar Power Plant 10KWp	Rs 71/- Per Watt	Rs. 710,000/-
4	Grid-Tie Solar Power Plant 15KWp	Rs 68/- Per Watt	Rs. 1,020,000/-
5	Grid-Tie Solar Power Plant 20KWp	Rs 65/- Per Watt	Rs. 1,300,000/-
6	Grid-Tie Solar Power Plant 25KWp	Rs 60/- Per Watt	Rs. 1,500,000/-
7	Grid-Tie Solar Power Plant 30KWp	Rs 58/- Per Watt	Rs. 1,740,000/-
8	Grid-Tie Solar Power Plant 50KWp	Rs 55/- Per Watt	Rs. 2,750,000/-



Terms and Conditions:

1. *The above are tentative pricing of the given capacity under the standard conditions. The price may vary depending upon the geographical location of the plant, type of the plant and the components selected by the customer. Hence exact price will be defined after finalization of all components and site where the customer wishes to install Solar Power Plant.*
2. *Installation charges are included in above quoted price but it may increase if customer demands for super structure / any additional civil work is required for installing PV panels.*
3. *The above project cost doesn't include the Annual Maintenance Cost (AMC) (i.e. cleaning of panels, system optimization check-up and other regular system maintenance)*
4. *Above quoted price may vary if customer demands any special changes in configuration of the Solar Power Plant.*
5. *50% payment in advance, 30% of total payment at the time of delivery of components and the remaining amount after successful installation & testing.*
6. *Above quoted price does not include any tax, GST as applicable will be paid by the customer over and above the price quoted.*



Products and Services Partner:



Solar Rooftop System

In a solar rooftop system, the solar panels are installed in the roof of any residential, commercial, institutional and industrial buildings. This can be of two types

- (i) Solar Rooftop System with storage facility using battery, and
- (ii) Grid Connected Solar Rooftop System.



Fig.1. Rooftop Solar System

1. ROOFTOP SOLAR SYSTEM WITH STORAGE FACILITY (OFF GRID SOLAR POWER PLANT)

The Off Grid Solar Power plants are those rooftop systems which has battery as storage facility. The solar electricity is stored in the battery and can be utilized during night also when the sun is not available.

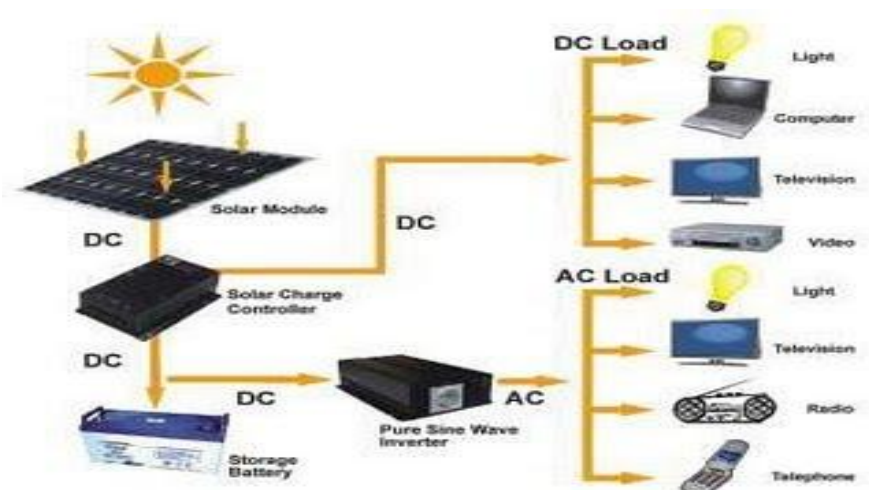


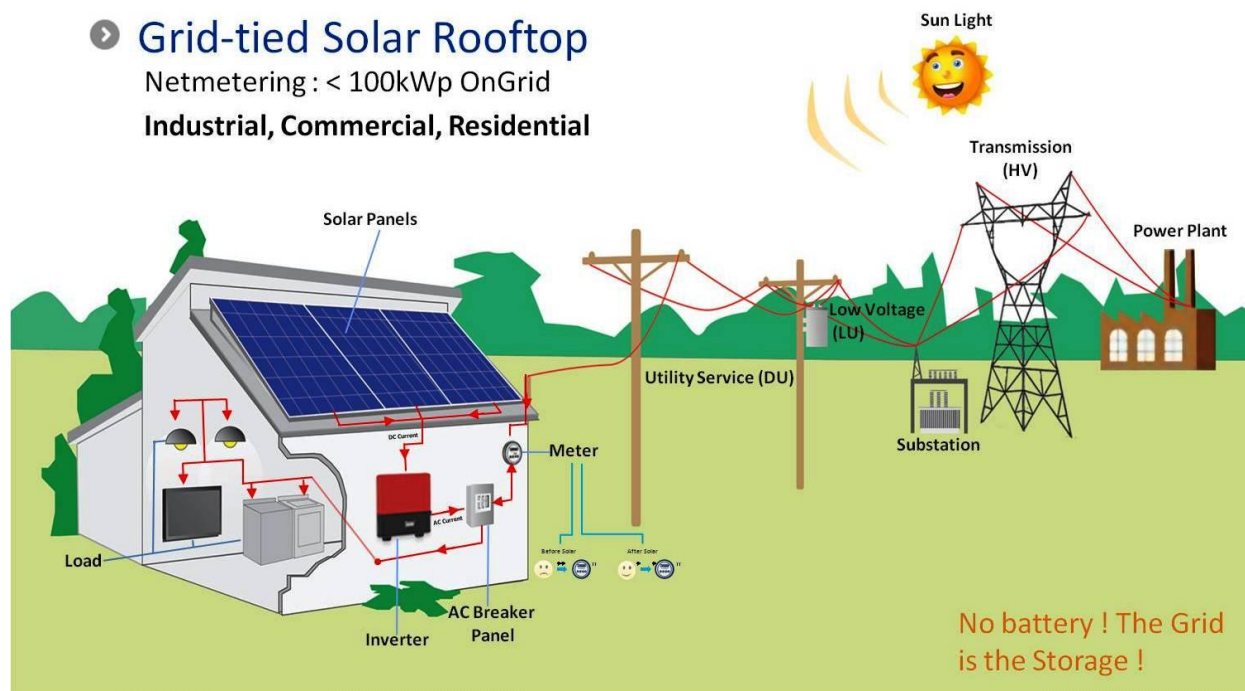
Fig.2. OFF –GRID Solar Power Plant

The system constitutes:

Sr.No.	Components	Application
1	Solar Panels	PV panels that are roof mounted or placed on the terrace area to capture sunlight.
2	Charge Controller	It collects the sunlight in the form of energy packets and converts them into electrical charge.
3	Solar inverter	Converts Direct current generated from solar panels into AC(Alternating Current)
4	Switchboard	Alternating Current (AC) generated from solar inverter goes through switchboard to power home or to send surplus current back to the battery.
5	Battery Bank	Stores the current generated from the solar panels or any surplus from electricity indoors.

2. GRID CONNECTED/ON GRID SOLAR ROOFTOP SYSTEM

In grid connected rooftop or small SPV system, the DC power generated from SPV panel is converted to AC power using power conditioning unit and is fed to the grid either of 33 kV/11 kV three phase lines or of 440/220 Volt three/single phase line depending on the capacity of the system installed at institution/commercial establishment or residential complex and the regulatory framework specified for respective States.



*Fig.2. Pictorial representation of a **GRID CONNECTED/ONGRID** Solar Power Plant*

These systems generate power during the day time which is utilized fully by powering captive loads and feed excess power to the grid as long as grid is available. In case, where solar power is not sufficient due to cloud cover etc., the captive loads are served by drawing power from the grid.

NET METERING:

The grid connected rooftop system can work on net metering basis wherein the beneficiary pays to the utility on net meter reading basis only. Alternatively a bidirectional energy meter can also be installed to measure the export and import of power separately. The mechanism based on gross metering on mutually agreed tariff can also be adopted.

Benefits of ON-GRID SOLAR SOLUTIONS:

- On-Grid Solar Solutions Harnesses the Solar Energy for Sustainable & Cost Effective Power Solutions using underutilized rooftops.
- Syncs and Shares energy with Grid
- Turnkey solutions including Net metering
- Without battery, economical with no recurring cost
- Export generated unutilized energy to grid
- Best in class solar modules
- Solutions available from 1KW and above
- Highest performing inverters
- Single phase and Three phase Solutions
- Customized solutions to suite site conditions

Agencies approved by The Government of India to carry out the Solar Projects for end users:

The programme is being implemented through multiple agencies for rapid up-scaling in an inclusive mode. These agencies are:

- (i) State Nodal Agencies (SNAs)
- (ii) Solar Energy Corporation of India (SECI)
- (iii) Channel Partners, Ministry of New and Renewable Energy (MNRE), Government of India**

