14 MW GRID CONNECTED SOLAR ROOFTOP PROGRAMME IN ASSAM

Implemented by

Assam Energy Development Agency

(Under Science & Technology Department, Govt. of Assam)
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GRID CONNECTED ROOFTOP SOLAR POWER PLANT PROGRAMME:

Government of India has set a target of installing 40 GW Grid Connected Solar Rooftop systems in the country by the year 2022. Ministry of New & Renewable Energy (MNRE) has allocated 250 MW Grid Connected Solar Rooftop projects in the state of Assam by the year 2022. Out of 250 MW, MNRE has sanctioned 14 MW Grid Connected Solar Rooftop Programme to Assam Energy Development Agency to implement the project in the state of Assam for the year 2017-2018 with 70% subsidy for Residential, Institutional (Non-Govt.) and Social Sectors Institutes.

Objective of the Programme:

- To promote the grid connected SPV rooftop power generating plants among the residential, community, institutional, industrial and commercial establishments.
- To mitigate the dependence on fossil fuel based electricity generation and encourage environment friendly Solar electricity generation.
- To create enabling environment for investment in solar energy sector by private sector, state government and the individuals.
- To create enabling environment for supply of solar power from rooftop plants to the grid.
- To encourage innovation in addressing market needs and promoting sustainable business models and ensure employment opportunities.
- To provide support to channel partners and potential beneficiaries, within the framework of boundary conditions and in a flexible demand driven mode.
- To create a paradigm shift needed for commoditization of grid connected SPV rooftop applications.
- To support consultancy services, seminars, symposia, capacity building, awareness campaigns, human resource development, etc.
- To encourage replacement of diesel, wherever possible.

GRID CONNECTED ROOFTOP SOLAR PHOTOVOLTAIC POWER PLANT:

Grid connected Rooftop SPV Power Plant will consists of:

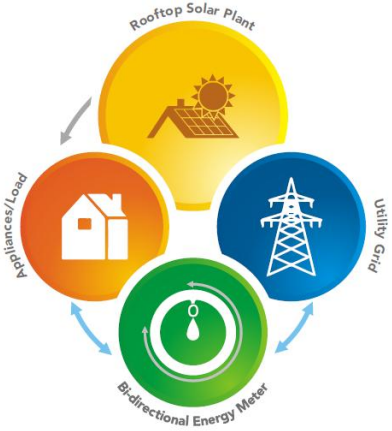
1) Solar Panels: The solar panels mounted on roof convert the sunlight directly into electricity. The solar panel produces direct current.

2) Solar Inverter or Power Conditioning Unit (PCU): The direct current (DC) produces by the solar panels is converted into alternating current by the solar inverter.

3) Energy Meter: The way how electricity is billed strongly influences profitability of the PV investments. To fully harness the benefits of the investments, the final user should be able to make the most of metering system. The energy meter involved in this project is Net Meter.

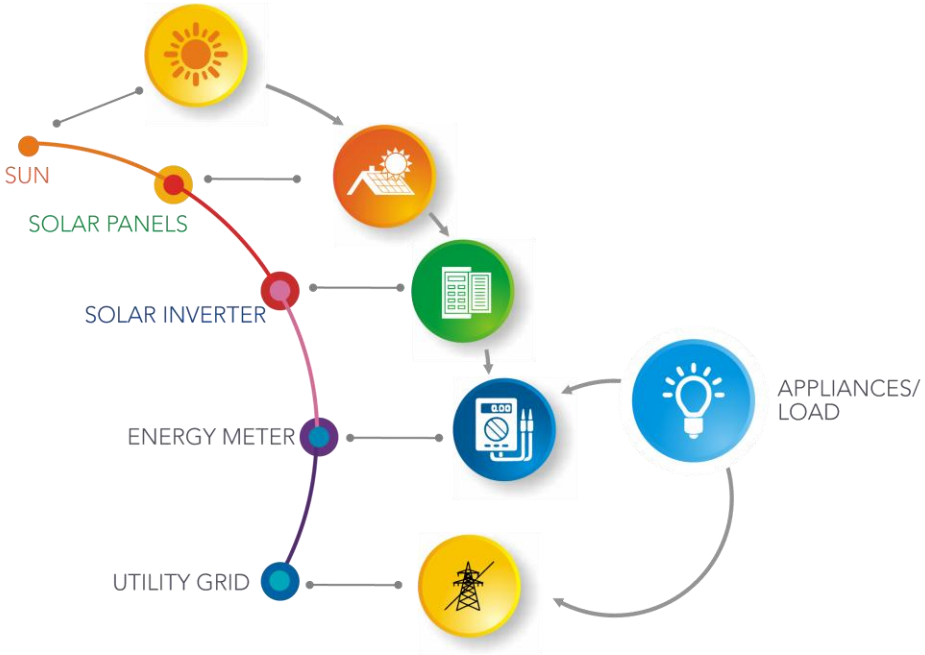
   a) Net Meter: Net metering systems are primarily aimed at providing an opportunity to consumers to offset their electricity bills, wherein a single meter records both import of conventional energy from distribution grid and export of solar energy into distribution grid. Thus, net metering allows the final user to credit produced energy in the grid and is also promoted as a preferred option.

The DC power generated from SPV panel is converted to AC power using power conditioning unit and is fed to the grid through the energy meter either to 33 kV/11 kV three phase lines or of 440V/220V three/single phase line depending on the local technical and legal requirements.



Net Meter

Working of Grid Connected Rooftop Solar Photovoltaic System:



BUSINESS MODELS

Ministry of New and Renewable Energy (MNRE), Govt of India is giving 70% subsidy under Grid Connected Solar Rooftop Programme to install SPV system of capacity not more than 80% of their connected load. Beneficiaries can avail any one of the two types of business models:

1) Capital Expenditure (CAPEX): In CAPEX MODE, 30% of capital expenditures are provided by the beneficiaries apart from subsidy and get their electricity bill discounted by solar generated units.

Cost of CAPEX MODEL-

Sl. No.	Category	Price per kWp	Beneficiary share (Amount per kWp)
1	1-10 kWp	Rs. 60,290.00	Rs.18,087.00
2	10-100 kWp	Rs. 55,980.00	Rs. 16,794.00
3	100-500 kWp	Rs. 51,680.00	Rs. 15,504.00

2) Renewable Energy Service Company (RESCO): In RESCO MODE beneficiaries need not pay anything and can enjoy electricity at much cheaper rate than existing tariff for 25 years for the generated solar energy.
Tariff need to be paid to the developer for RESCO MODE is Rs. 3.43 per unit against generated solar power for 25 years.

a) Power Purchase Agreement (Under Net Metering):
Here the RESCO developer invests in solar rooftop asset, and sells the generated power to the building owner in favor of a lower solar power tariff. The excess power could be sold by the building owner to the utility through net metering system.

Who can apply?

- Residential
- Institutional (Non-Govt.) and Social Sectors Institutes registered under Societies Registration Act 1860 or Indian Trust Act 1882.

How to Apply?

Eligible beneficiaries can apply through any of the empanelled vendors by submitting the following documents:

1) Application form (Annexure I)
2) Consent Letter (Annexure II)
3) Latest Electricity Bill.
4) Society Registration Certificate in case of Institutional (Non-Govt.) and Social Sectors Institutes.
5) Non Profit making Certificate from concerned Chartered Accountant (in case of Institutional (Non-Govt.) and Social Sectors Institutes).

BENEFITS FROM THE GRID CONNECTED ROOFTOP SOLAR SYSTEM

Solar Rooftop System provides following technical benefits:

- Utilization of available vacant roof space;
- Low gestation period;
- Lower transmission and distribution losses;
- Improvement in the tail-end grid voltages and reduction of system congestion;
- Loss mitigation by utilization of distribution network as a source of storage through net metering;
- Long term energy and ecological security by reduction in carbon emission;.
- Abatement of about 60 million tonnes of CO_2 per year over its life cycle;
- Better Management of daytime peak loads by DISCOM/ utility;
- Meeting of the renewable purchase obligations (RPOs) of obligated entities which are targeted at 8% of electricity consumption;
- Minimal technical losses as power consumption and generation are co-located.

Eligible beneficiaries can install the Solar Power Plant from any of the following vendors empanelled by Assam Energy Development Agency:

Sl No	Name of the vendors with MODE of project can be availed	Address	Contact
1	Better Power Services Pvt. Ltd. **(CAPEX)**	Guwahati	9706057418 / 9706518105
2	Free PoweTechnology Pvt. Ltd. **(CAPEX)**	Guwahati	9864051900 / 9101605162
3	Pragma Energy Pvt. Ltd. **(CAPEX)**	Guwahati	7399054606 / 9435116809
4	Renergy Solutions Pvt. Ltd. **(CAPEX)**	Guwahati	8884371293 / 9127753775
5	Sunnova Energy Solutions Pvt. Ltd. **(CAPEX)**	Jorhat	8876733743 / 9643069335
6	Susconnect Pvt. Ltd. **(CAPEX)**	Guwahati	9954079013 / 9401801117
7	E-Pack Polymers Pvt. Ltd. **(CAPEX & RESCO)**	Greater Noida	9650004216 / 9953085555
8	Firstgreen Consulting Pvt. Ltd. **(CAPEX & RESCO)**	Gurgaon	9854037535 / 8638825054
9	PAE Renewables Pvt. Ltd. **(CAPEX)**	Mumbai	9873707226 / 9864240131
10	Sri Savitr Solar Pvt. Ltd. **(CAPEX)**	Telangana	9885100054 / 9854004450
11	Suncraft Energy Pvt. Ltd. **(CAPEX & RESCO)**	Kolkata	8902656796 / 9007067399
12	Sunwin Energy and Infra Pvt. Ltd **(CAPEX).**	Guwahati	7727049629 / 7005356942
13	Ujaas Energy Limited **(CAPEX & RESCO)**	Indore	9109978509 / 7694011926

Annexure-I

To,

Date:

The Director
Assam Energy Development Agency
Bigyan Bhawan, ABC, G.S. Road
Guwahati-781005, Assam

Sub: Request to setup ..... KWp Grid Connected Rooftop Solar Power Plant at.....

Sir,

I understand that AEDA is implementing the 14 MWp Grid Connected Rooftop Solar Power Plant Project of Ministry of New and Renewable Energy (MNRE), Govt of India in Assam with 70 % MNRE support for beneficiary .

I am a consumer of Assam Power Distribution Company Ltd. having connected load of ..... KW and also have adequate rooftop with sunny space.

I am interested to set up .....KWp Grid Connected Rooftop Solar Power Plant at..... on CAPEX/ RESCO mode.

Please find the enclosed documents (as applicable) –

1. Consent letter.
2. Latest electricity bill with proof of payment.
3. Socities' Registration Certificate / Trust Registration Certificate
4. No profit Certificate from Chartered Accountant.

Yours faithfully,

(Signature of the beneficiary)

Name:
Full address:
Contact Number:

.....

(For AEDA Office use)

Application Sl. No.:
Vendor Name :
Implementation Mode: CAPEX/ RESCO
Application received date:

Signature

Annexure-II

Photographs

Consent /Certificate from User/ Beneficiary

(To be furnished by User/beneficiary)

1. This is to certify that I …….. ..S/o or D/o Shri…….. Resident of ……..... intent to install the Grid Connected Rooftop Project/Small Power Plant of……kWp capacity against my connected load of …….. KW through empanelled Developer (approved Channel Partner) of AEDA (name of the vendor) …….. under CAPEX/RESCO mode

2. The project cost of Rs……../Wp as discovered by AEDA has been indicated and accepted by me under CAPEX mode.

   Or

3. The levellized tariff of Rs. 3.43/ kWh fixed for 25 years as discovered by AEDA as indicated has been accepted by me under RESCO Mode.

4. I herewith also confirm that the balance cost (30% of the project cost) will be met by me, thereby I do hereby agree to pay Rs. …… to AEDA/ Developer (select one) alongwith cost of Net Meter under CAPEX Mode..

   Or

5. I hereby confirm that the cost of Net Meter shall be borne by me (in case of Project under RESCO mode)

6. I hereby declare that the roof space which will be made available to the Project Developer is owned by me.

7. This is also to confirm that I will extend full co operation including access to the project site (Rooftop) premise to the implementing/ executing /monitoring agency during/post installation and Operation & Maintenance (O&M),of the plant.

Signature…….
Name&Designation, Organization,Address oftheUser/Beneficiary
(with Seal ifavailable)

Place:
Date:

APDCL Details

1	Name of Consumer (Service connection on whose Name)	
2	Consumer No.	
3	Local SDE	
4	Transformer No	
5	Pole No.