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Installation of Solar Power Plant based on Net Metering including Demand side Management

Preeti Sethi
Assistant Professor, Department of Mathematics
Sh. L.N. Hindu College Rohtak-124001 (Haryana)
Email: mail.preetisethi@gmail.com

ABSTRACT

In the present energy scenario, the demand for electrical energy is increasing and conventional energy resources are fast depleting. The present paper deals with the production of electricity from a renewable energy sources that is solar systems and having a detailed view of installation of solar power plant based on Net Metering system including requirement of Net Metering, process of Net Metering and types of solar models, focusing the area of demand side management (DSM). Demand side Management is a recent development empowering utility sectors consequencing installation of Energy efficient appliances by means of basic sciences. Here we highlight the performance of live solar projects within Delhi by Live Case studies and ending with the commitment towards a greener future.

Key words: Net Metering, Demand Side Management, Solar Models, Commitment for Greener Future.

Introduction:-

Here we give the historical sketch of solar systems and their installation since from 2008 – 2017 and onwards. Here we explain the performance highlights and work done by **Tata Power Solar**.

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Volume 07 Issue 04
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Solar and DSM Journey

In 2015 and earlier we do the following

1. Set up 15 solar plants in own premises with 1.77 MWP capacity
2. Empanelment with MNRE as SPIN first power utility as channel partner with MNRE.
3. Empanelment with BEE as grade 1 ESCo.
4. Innovative Business Model – Empanelment of solar implementation agencies.
5. Integration of solar project with different Business processes in SAP-ISU
6. Launch of DELP

In 2016

1. Band Recognition – National Award on solar CII Award on DSM
2. Focused Awareness Session
3. AC Replacement Scheme
4. Whole Range LED Lighting program with CGCEL.
5. Solar plant Intalled at president house.
6. Empanelment of ESCO Agencies for TPDDL consumers.

In 2017

1. Re-empanelment with MNRE as SPIA only power discom.
2. Integration of solar roadmap.
3. Ujala Scheme
4. Continuation of AC replacement Scheme.
5. Energy efficiency project Implementation through ESCO
6. With energy efficiency coloration.

Solution provides.

Moreover we can read ahead National and International benchmarking.

Service offering in solar projects and allied DER Initiatives.

Scaling up of home automation and ADR

ISSN: 2235-767X
Volume 07 Issue 04
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Performance Highlight – Solar project within Delhi

- Journey started in 2008 with cenpeid (15kwp) and corporate office solar project (4kwp)
- Set up 1MWP Solar plant at keshavpuram first successful megawatt class Roaftop project in the country. Till date 15 solar plant with capacity 1.78 MWP.

Requirements for Installing SPV Plant

- Availability of 120 Sq. 1st/12 sq.m/14 Sq.yurds Shadow free area for 1 kwp.
- Can be installed on RCC and galvanized Iron sheet rooftop.
- The Roof should preferably be clear from S-direction and shadow line.

Financial Options:

- Capex- The beneficiary invest for SPV plant.
- RESCO- Third party Invests for SPV plant
- Financing (Loan) – Bank provides loan just at the Interest rate of 11% (approx).

Types of Solar Models:

There are two types of solar Models on the basis of investments.

- CAPEX Model:
  On the basis of financial investment The capital expenditure for the solar photo voltaic plant is made by the customer. The model starts from 1 KWP

RESCO Model:

The RESCO developers finance for the solar photo – Voltaic plant for this Model the minimum solar capacity must be 50kwp. Customer has to pay 6 to 7 rupees per unit for the electricity from solar plant.

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Our Solar Initiatives:

- Highest Solar grading as system Integrator and project developer received from ICRA.
- Empanelled as utility channel partner with ministry of new and renewable energy.
- TPDDL has won the award Rooftop solar Enabler of the year – " Utility" under the aegis of the Indian Rooftop solar leadership Awards, 2016.

Conclusion :-

After above data I second my outlook to the roof top Solar Systems. It relief customer from TOD Charges and Immediate reduction in electricity bill providing Green Energy to the nation. Also it saves fossil fuels like coal, petroleum, Diesel Best part is financial benefit as one time Investment provides 25 years solar generation and also reduces requirement of land for addition of capacities and reduces transportation and Distribution losses including low gestation period and value creation of Roof. Continuing future scope.

In this way upto 2025 we get 12% of energy consumption in India via solar system from the Total consumption in India.

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