MICRO, SMALL & MEDIUM ENTERPRISES
सूक्ष्म, लघु एवं मध्यम उद्यम

Ministry of New and Renewable Energy
Government of India

"PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY IN SELECTED MSME CLUSTERS IN INDIA"

To develop and promote a market environment for introducing energy efficiency and enhanced use of renewable energy technologies in process applications in the selected energy-intensive MSME clusters, United Nations Industrial Development Organization (UNIDO) in collaboration with Bureau of Energy Efficiency (BEE) is implementing a project titled "Promoting Energy Efficiency and Renewable Energy in selected MSME clusters in India" funded by Global Environment Facility (GEF) and co-financed by Ministry of Micro, Small and Medium Enterprises (MoMSME) and Ministry of New and Renewable Energy (MNRE).

Installation of solar PV rooftop system to generate electricity in a ceramic unit

Objective

To reduce the dependency on grid by generating electricity through solar PV rooftop system.

Implementation

Installed a 50 kWp solar PV rooftop system to generate electricity in ceramic unit by utilizing about half of the available roof space.

Principle

The unit is in western region of India, where 200 solar days are available in a year. In these regions, power generation through solar PV combined with inverter is a good option to ensure power availability, reduce dependency on grid and reduce energy costs. It is an environment friendly long term option.

Savings
₹ 5,25,000

Investment
₹ 22,00,000

Pay Back
51 months

Prepared & designed by:
Confederation of Indian Industry

Unit Profile

Rajdeep Ceramic is a ceramic unit located in Thangadh, Gujarat. Unit manufactures 3600 MT of sanitaryware per annum.

Benefits

- **Electricity generation**
- **Use of renewable energy**
- **Reduced dependency on grid**

Outcomes

- **75,000 kWh of annual energy generation**
- **₹ 5,25,000 of annual cost saving**
- **61.5 T of CO_2 reduction per year (0.82 kg/kWh)**

Replication Potential

In all the units located in areas with significant solar radiation and with available roof space.

Cost Economics

Installed capacity of solar plant	**50 kWp**
Annual energy generation from Solar PV	**75,000 kWh**
Cost savings per year (₹ 7 /kWh)	**₹ 5,25,000**
Investment cost	**₹ 22,00,000**
Simple payback period	**51 months**

Calculation

Energy generation per annum (kWh/year) = Installed capacity (kW)* average hours per day (region specific) * no of working days/year

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