

## "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 flat plate solar collector to preheat boiler feed water

#### Objective

To reduce the energy consumption of boiler by utilizing solar energy to preheat boiler feed water

#### Implementation

Installed two flat plate solar collectors of total capacity 15000 LPD in a dairy to preheat the boiler feed water

#### Principle

A flat plate collector is a heat exchanger that converts the radiant solar energy from the sun into heat energy. Flat plate solar collector system for preheating the boiler feed water is a good option to reduce dependency on fuel and reduce fuel costs. It is an environment friendly long-term option



**Savings**

**₹2,04,750**



**Investment**

**₹21,00,000**



**Pay Back**

**123 months**

## Benefits

- Fuel savings and reduced fuel costs
- Use of renewable energy



## Outcomes



75,000 kWh of  
annual energy  
generation



₹ 5,25,000 of  
annual cost  
saving

## Cost Economics

Briquettes saving per hour	8.75 kg/hr
Briquettes savings per annum	31,500 kg
Cost savings per year (₹ 6.5/kg)	₹ 2,04,750
Investment cost	₹ 21,00,000
Simple Payback period	123 months



## Replication Potential

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



## Calculation

Annual cost saving = (briquettes saving per hr, kg/hr \* cost of briquettes, ₹/kg) \* no of working hours/year

### Contact details :

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