

"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 a concentrated solar thermal system for steam generation in a dairy unit

Objective

To minimize the energy costs by installing a concentrated solar thermal system for steam generation in a dairy unit.

Implementation

Installed a concentrated solar thermal system to replace the natural gas fired boiler used for steam generation in a dairy unit.

Principle

The unit is in western region of India, where 200 solar days are available in a year. In these regions, use of concentrated solar thermal system for steam generation is a good option to reduce dependency on fuel and reduce energy costs. It is an environment friendly long term option.



₹ 28,63,000



₹ 1,52,00,000



Pay Back

64 months



Unit Profile

AmulFed Dairy is a unit of Gujarat Co-operative Milk Marketing Federation (GCMMF). The dairy has milk processing capacity of approximately 90kL an hour and production capacity of 150t of skim milk powder a day and 120t of dairy whitener or baby food a day.

Benefits

- Fuel savings and reduced fuel costs
- Use of renewable energy
- Reduction in carbon emission due to use of renewable energy source



Outcomes



1,02,250 SCM of annual natural gas saving



₹ 28,63,000 of annual cost saving



229.5 T of CO₂ reduction per year (56.1 kg/GJ of Natural gas)

Cost Economics

Steam generated from the solar plant	576 T/annum
Natural gas savings per annum	1,02, 250 SCM
Cost savings per year (₹ 28 /SCM)	₹ 28,63,000
Investment cost	₹ 1,52,00,000
Simple payback period	64 months



Replication Potential

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



Calculation

Annual cost saving = (Natural gas saving per day, SCM * cost of natural gas, ₹/SCM) * no of working days/year

Contact details :

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