

## "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 biomass fired steam boiler for ghee plant

#### Objective

To minimize the energy costs in the ghee plant and to use renewable energy source.

#### Implementation

Installed a biomass fired steam boiler in place of a diesel fired steam boiler in the ghee plant.

#### Principle

Installed boiler uses biomass briquettes to produce steam. It is a renewable energy source. Biomass briquettes are cheaper when compared to fossil fuels, so the cost of steam generation is less with briquettes than with diesel.



**₹ 27,34,920**



**₹ 18,50,000**



**Pay Back**

**9 months**



#### Replication Potential

In all the units with diesel fired boilers. Before implementation, it is advised to assess the continuous availability of biomass briquettes and also suitability of the technology to the existing field conditions.



## Unit Profile

Vasudhara Dairy is located in Alipore, Gujarat with a capacity of 4,00,000 L per day. It produces and markets milk and ghee for the local market under the Amul brand name.

## Benefits

- **Reduction in energy costs**
- **Reduction in carbon emission due to Renewable energy source**



## Outcomes



## Calculation

Annual cost saving = (cost of processing before implementation per day - cost of processing after implementation per day) \* no of days of working/ year

## Cost Economics

	Diesel fired boiler	Biomass fired boiler
Cost of Processing ( ₹ / L of milk)	0.14	0.06
Average amount of milk processed	94,967 L/day	94,967 L/day
Cost of processing per day ( ₹ /day)	₹ 13,295	₹ 5,698
Cost of processing per annum (360 days/yr)	₹ 47,86,200	₹ 20,51,280
Cost saving from biomass boiler	₹ 27,34,920	
Investment	₹ 18,50,000	
Simple payback period	9 months	

### Contact details :

#### Unit

Mr. Ashok Sondhiya  
Vasudhara Dairy  
Alipore - Chikhli Road, NH-8, Alipore  
Chikhli, Valsad, Gujarat, 396409.  
+91 75748 02084

#### Cluster Leader

Mr Falgun Pandya  
Gujarat cluster leader  
falgun.bee@gmail.com

#### PMU

GEF-UNIDO-BEE  
4th Floor, Sewa Bhawan, Sector-1,  
R.K. Puram, New Delhi - 110066  
gubpmu@beenet.in  
+011-26194770

#### United Nations Industrial Development Organization

Mr Sanjaya Shrestha  
Industrial Development Officer  
UNIDO  
s.shrestha@unido.org