

## "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).

### Installing 400 energy efficient ceiling fans for drying process in a ceramic unit for energy saving

#### Objective

To minimize energy consumption in the drying process of a ceramic plant by replacing 400 traditional ceiling fans with energy efficient fans.

#### Implementation

Replaced 400 traditional ceiling fans (70 W) with 400 new energy efficient BLDC (brush less direct current) fans (28 W) to save energy in drying process of a ceramic plant.

#### Principle

Energy efficient fans with BLDC (brush less direct current) technology consume 28W at full speed. Which resulted in 60 % savings in power consumption compared to traditional fans. With these fans, there is no heating of the motors and they can easily sustain in extreme conditions.



**Savings**

**₹ 4,83,840**



**Investment**

**₹ 8,00,000**



**Pay Back**

**20 months**



## Unit Profile

Eros Sanitary is a medium scale ceramic plant, located in Morbi, Gujarat. This unit manufactures sanitary ware like wash basin, water closet, cistern, urinal and kitchen SS sink.

## Benefits

- Elimination of friction & associated power loss.
- Better flexibility over controlling motor speed.
- No spark and minimal electrical noise as no slip ring or mechanical brushes are used
- Reduced energy consumption and energy costs.



## Outcomes



80,640 kWh of annual energy saving



₹ 4,83,840 of annual cost saving



66.1 T of CO<sub>2</sub> reduction per year (0.82 kg/kWh)



## Replication Potential

In all the ceramic units with traditional ceiling fans

## Cost Economics

	Before implementation	After implementation
No of fans	400	400
Wattage of each fan (W)	70	28
Energy consumption per year (kWh)	1,34,000 (4,800 hr/yr)	53,760 (4,800 hr/yr)
Energy saving per year (kWh)		80,640
Annual cost saving (₹ 6/kWh)		₹ 4,83,840
Investment		₹ 8,00,000
Simple payback period		20 months



## Calculation

Energy savings per annum (kWh/year) = (Energy consumption before implementation- after implementation, kWh/hour) \* no of working hours/year

### Contact details :

#### Unit

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