









## "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 14,500 energy efficient ceiling fans for drying process in a ceramic cluster for energy saving

## **Objective**

To minimize energy consumption in the drying process of ceramic plants in a cluster by replacing 14,500 traditional ceiling fans with energy efficient fans.

## Implementation

Replaced 14,500 traditional ceiling fans (70 W) with 14,500 new energy efficient BLDC (brush less direct current) fans (28 W) to save energy in drying process of ceramic plants.

## **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.



Confederation of Indian Industry



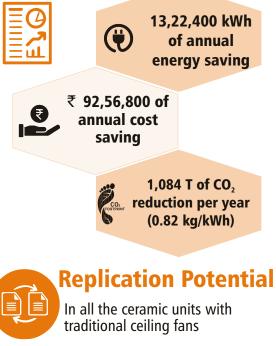
## **Unit Profile**

Thangadh ceramic cluster is located in Gujarat, consisting of around 225 MSME ceramic units. These units are of three types - pottery works, insulation works and sanitary wares.

### **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** ≻





Cost Economics	Before implementation	After implementation
No of fans	14,500	14,500
Wattage of each fan (W)	70	28
Energy consumption per year (kWh)	44,08,000 (7,600 hr/yr)	30,85,600 (7,600 hr/yr)
Energy saving per year (kWh)	13,22,400	
Annual cost saving (₹ 7/kWh)	₹ 92,56,800	
Investment	₹ 4,35,00,000	
Simple payback period	57 months	

Calculation

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

### **Contact details :**

### Unit

Mr. Ramjibhai Maru Panchal Ceramic Association Vikas Trust P.O. Box No. 51, Amrapar Thangadh - 363530, Gujarat +91 98254 13642

### **Cluster Leader**

Mr. Pradeep Vora Thangadh cluster leader cl.thangadhcluster@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