# "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 a timer for shot blast machine in a foundry to maintain the cycle time

### Objective

To reduce the energy consumption of the shot blast machine by installing a timer to switch off the motor after the cycle time to avoid idle running.

### Implementation

Installed a timer to the shot blast machine to maintain the cycle time of the process.

### Principle

The shot blasting machine cycle time was not fixed, resulting in excess running of the machine leading to energy losses. To maintain the exact cycle time, a timer is installed to the machine. This will switch off the motor after the cycle time and result in energy savings.

| Savings | Investment | Pay Back |
|---|---|---|
| ₹ 37,800 | ₹ 8,345 | 3 months |

Prepared & designed by: CII Confederation of Indian Industry

## Unit Profile

Fluid Metals is a foundry unit, located in Belgaum. They manufacture elevator parts and pump housings. Average production of the unit is in the range of 900 to 1100 MT per annum.

## Benefits

- **Maintaining cycle time**
- **Reduced energy consumption**
- **Reduced energy costs**

## Outcomes

- **5,400 kWh of annual energy saving**
- **₹ 37,800 of annual cost saving**
- **4.4 T of $CO_2$ reduction per year (0.82 kg/kWh)**

## Cost Economics

| | |
|---|---|
| **: Energy saving per day** | **18 kWh** |
| **Energy saving per month** | **450 kWh (25 days/month)** |
| **Energy saving per annum** | **5,400 kWh** |
| **Cost savings per year** | **(₹ 7 /kWh) ₹ 37,800** |
| **Investment cost** | **₹ 8,345** |
| **Simple payback period** | **3 months** |

## Replication Potential

In all the shot blasting machines without a timer

## Calculation

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

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