

“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 new energy efficient pump with IE3 motor in a foundry

Objective

Energy saving by installing an energy efficient pump with IE3 motor for circulating water to cool the coil of the induction furnace.

Implementation

Installed a variable Installed an energy efficient pump with IE3 motors in place of old centrifugal pump for circulating water to cool the induction coil of the furnace.

Principle

Existing water pump for coil cooling has a pump efficiency of less than 60%. Whereas, energy efficient pump with IE3 motor has a pump efficiency of 76.6%. Hence, coil cooling pump will consume lower power consumption 5 kW and low capacity motor can be used.



Savings

₹ 2,48,400



Investment

₹ 1,10,000



Pay Back

6 Months



Unit Profile

Integra automation is a medium scale foundry unit located in Coimbatore region. Average monthly production of the unit is around 1000 MT.

Benefits

- Improved efficiency of pump & motor
- Reduced energy consumption & energy costs



Outcomes



33,120 kWh of annual energy saving



₹ 2,48,400 of annual cost saving



27.2 T of CO₂ reduction per year (0.82 kg/kWh)

Cost Economics

Energy savings per hour	4.6 kWh
Energy saving per annum	33,120 kWh
Cost savings per year	₹ 2,48,400 (₹ 7.5 /kWh)
Investment cost	₹ 1,10,000
Simple Payback period	6 months



Replication Potential

In all the units with inefficient centrifugal pumps and motors are used.

Calculation



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

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Unit

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