

"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).

Insulated top cover of the induction furnace to minimize the radiative heat losses in a foundry

Objective

Energy conservation by minimizing the radiative heat losses in the induction furnace by using insulated top cover.

Implementation

Fabricated and installed a top cover with cera-wool insulation lining to minimize the radiative heat losses in an induction furnace.

Principle

Uncovered induction furnace results in radiative heat losses. These radiation heat loss accounts for 4 to 6% of input energy. To minimize these losses, cera-wool lined top cover is used. This will result in energy savings.



Savings

₹ 27,062



Investment

₹ 33,500



Pay Back

15 months



Unit Profile

Amit Ferrocast is foundry unit located in Belgaum. The unit manufactures S.G. Iron, steel and cast iron castings. The average production of the unit is in the range of 1800 to 2000 MT per annum.

Benefits

- **Reduced radiation losses of the induction furnace**
- **Reduced energy consumption and energy costs**



Replication Potential

In all the units with potential radiation heat losses from induction furnace

Outcomes



7,488 kWh of annual energy saving



₹ 33,500 of annual cost saving



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

Cost Economics

Energy saving per month	624 kWh
Energy saving per year	7,488 kWh
Cost savings per year in furnace (₹ 7.3 /kWh)	₹ 54,662
Yearly cost of consumables	₹ 27,600
Net savings per year	₹ 27,062
Investment in fabricating the top cover	₹ 33,500
Simple payback period	15 months



Calculation

Net cost savings per year = (Cost savings per month in furnace - Cost of consumables per month) * 12

Contact details :

Unit

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