

"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).

Reduction in energy consumption by reducing the length of the spout in an induction furnace.

Objective

To reduce the energy consumption in the coke fired induction furnace by reducing the length of the spout, used to pour the molten metal in to ladle.

Implementation

Reduced the length of the spout from 1.2 m to 0.5 m to minimize the energy consumption in the coke fired induction furnace.

Principle

Molten metal is poured in the ladle through spout. During this time, temperature of molten metal decreases due to contact between molten metal and spout resulting in radiative heat losses. To compensate this temperature drop, tapping temperature is increased. By reducing the length of the spout, contact time and these losses could be reduced. Thus, resulting in energy savings.



Savings

₹ 18,400



Investment

Nil



Pay Back

Immediate



Unit Profile

Jash Engineering Ltd. is a medium scale foundry unit located in Indore, Madhya Pradesh. The unit manufactures sluice gate, valve, bed plate and surface plates. Installed capacity of the unit is 3600 tons per year.

Benefits

- Reduced heat losses and fuel (coke) consumption
- Reduced operation costs



Outcomes



700 kg of annual coke saving



₹ 18,400 of annual cost saving



2.1 of CO₂ reduction per year (96 kg CO₂/GJ of coke)



Replication Potential

In all the units with transformers on No-load

Cost Economics

Reduction in tapping temperature	70 °C
Annual coke saving	700 kg
Annual cost saving through coke	₹ 18,400 (₹26/kg)
Investment cost	Nil
Simple Payback period	Immediate



Calculation

Net cost savings, ₹ = (annual coke savings, kg*cost of coke, ₹/kg)

Contact details :

Unit

Jash Engineering Ltd.
31, Sector - C, Industrial Area,
Sanwer Road, Indore - 452010
Madhya Pradesh
lda@jashindia.com

Cluster Leader

0

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