

"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 removing the holding receiver and directly tapping the metal into the ladle in a coke fired induction furnace.

Objective

To reduce the energy consumption in the coke fired induction furnace by eliminating the process of holding the metal in the receiver before pouring it in the ladle.

Implementation

Eliminated the process of holding the metal in the receiver. Instead, started directly pouring the molten metal in the ladle to minimize the energy consumption in the coke fired induction furnace.

Principle

Holding the molten metal is an energy intensive process as the receiver needs to be heated continuously. Further, holding will also decrease the temperature of the molten metal by 100 to 150 °C. To compensate this temperature drop, tapping temperature is increased. Directly pouring the molten metal in the ladle without the holding process will help in maintaining the optimum tapping temperature, resulting in energy saving and eliminate heating of receiver, thus saving the diesel used for heating.



Savings

₹ 4,13,832



Investment

Nil



Pay Back

Immediate



Unit Profile

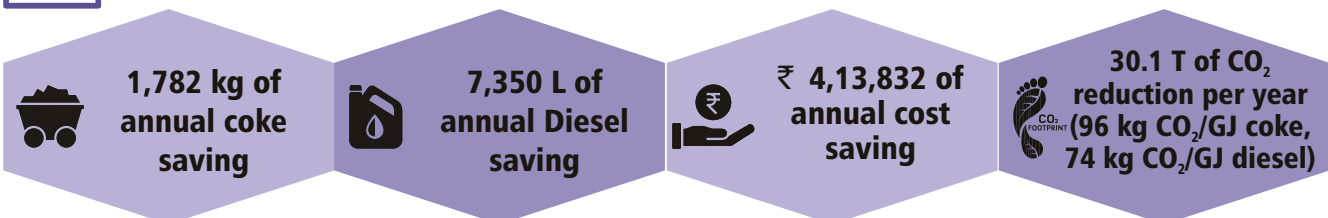
Jash Engineering Ltd. is a medium scale foundry unit located in Indore, Madhya Pradesh. The unit manufactures sluice gate, valve, bed plate and surface plates. Installed capacity of the unit is 3600 tons per year.

Benefits

- **Reduced process time**
- **Reduced diesel consumption**
- **Reduced energy consumption and energy costs**



Outcomes



Cost Economics

Annual coke saving	1,782 kg
Annual cost saving through coke (₹ 26/kg)	₹ 46,332
Annual diesel saving	7,350 L
Annual cost saving through diesel (₹50 /L)	₹ 3,67,500
Net cost savings	₹ 4,13,832
Investment cost	Nil
Simple Payback period	Immediate



Replication Potential

In all the units with a process of holding molten metal in receiver tanks than directly pouring in the ladle



Calculation

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

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