

"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).

Energy conservation by modifying compressed air line system in a foundry

Objective

To save energy in the compressed air system by modifying the pipeline to multilayer composite (MLC) pipes.

Implementation

Replaced the metallic pipes in the compressed air system to MLC pipes to reduce pressure drop, leakages to conserve energy.

Principle

Compressed air system of metallic pipe line with joints and welding at various points results in pressure drop and leakages. To avoid these, flexible pipe line system with MLC (PE-AL-PE) pipes are used. This will minimize the pressure drop and leakages in the system. With reduction in pressure drop, the generation pressure can be reduced from the existing level and this results in power saving. 1 bar reduction in generation pressure results in 8% power saving.



₹ 2,84,544



₹ 3,50,000



15 Months



Replication Potential

In all the units with metallic pipes in the compressed air distribution system



Unit Profile

Abhishek Alloys Pvt. Ltd. is a foundry unit located in Belgaum. The unit was established in the year 1981.

Benefits

- Reduced pressure drop
- Reduction in leakages
- Reduced energy consumption

Outcomes



37,440 kWh of annual energy saving



₹ 2,84,544 of annual cost saving



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



Calculation

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

Cost Economics

	Before implementation	After implementation
Energy consumed per hour (kWh)	37.5	30
Energy consumption per day (kWh/day)	600 (16 hr/day)	480 (16 hr/day)
Electricity consumption per annum (312 days/year) (kWh/year)	1,87,200	1,49,760
Energy saving per annum (kWh/year)	37,440	
Cost savings per year	₹ 2,84,544 (₹ 7.6/ kWh)	
Investment cost	₹ 3,50,000	
Simple Payback period	15 months	

Contact details :

Unit

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