

## “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).

### Installation of VFD to the existing 100 HP compressor to avoid unloading in compressor

#### Objective

To minimize the energy consumption in the compressed air system

#### Implementation

Installed a variable frequency drive (VFD) to the existing 100 HP compressor to reduce the energy consumption

#### Principle

Compressed air demand varies with variation in the process requirement. Excess capacity leads to increase in pressure of the compressor, unloading of the compressor resulting in idle power consumption. VFD varies the capacity of the compressor, matches it with the demand by changing speed. Avoids unloading completely, helps to maintain constant header pressure resulting in reduced leakages, power consumption. VFD in a compressor can reduce the energy consumption by 10-40% compared to modulating compressors.



₹ 6,75,000



Investment

₹ 2,60,000



Pay Back

5 Months



## Unit Profile

Bright Foundries Coimbatore (BFC) is a medium scale foundry unit located at Ganesapuram, Coimbatore. The average liquid metal production of the unit is around 350 MT/month.

## Benefits

- Improved life of the machinery & process output by maintaining constant header pressure
- Constant airflow at uniform pressure
- Reduced leakages
- Reduction in specific energy consumption in the compressed air system



## Outcomes



90,000 kWh of annual energy saving



₹ 6,75,000 of annual cost saving



73.8 T CO<sub>2</sub> reduction per year (@0.82 kgCO<sub>2</sub>/kWh)

## Cost Economics

Energy savings per month	7,500 kWh
Energy saving per annum	90,000 kWh
Cost savings per year	₹ 6,75,000 ( ₹ 7.5 /kWh)
Investment cost	2,60,000
Simple Payback period	5 months



## Replication Potential

In all the units with variable compressed air loads

## Calculation



Energy savings per annum (kWh/year) = (Energy consumption before implementation - after implementation, kWh/month) \* 12

### Contact details :

#### Unit

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