

"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 transvector nozzle guns to minimize the compressed air consumption

Objective

To minimize the energy consumption in the compressed air system by installing transvector nozzle guns

Implementation

Installed eight transvector nozzle guns in the compressed airlines in place of conventional nozzle guns to minimize compressed air consumption and energy consumption

Principle

Transvector nozzles are economical and efficient way to reduce compressed air consumption used in machine cleaning, filter cleaning and man cleaning applications. With amplification technology, these nozzles entrain and accelerate free surrounding air, resulting in air flow volume up to 25 times more than the volume of supplier compressed air. These nozzles can be fitted on existing setup without any modifications. They can be mounted as well as used as handy blow gun



Savings

₹4,47,120



Investment

₹30,000



Pay Back

1 month

Benefits

- Reduced pressure drop
- Reduced energy consumption and energy costs



Outcomes



5,430 kWh of
annual
briquettes saving



₹ 36,381 of
annual cost
saving



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



Replication Potential

In all the units with conventional nozzle guns in the compressed air network for works such as machine cleaning, burr cleaning, etc.

Cost Economics

Energy saving per day	216 kWh
Energy saving per year (300 days / yr)	64,800 kWh
Cost savings per year (₹ 7.5/kWh)	₹ 4,47,120
Investment cost	₹ 3,000
Simple Payback period	1 month



Calculation

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

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