

"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).

Resource monitoring and control with internet of things (IoT)

Objective

Reduced energy consumption by resource monitoring and control with IoT

Implementation

Implemented resource monitoring and control with IoT to avoid mal operation /frequent tripping / idle running of equipment in the plant

Principle

Industrial process IoT is a monitoring system that includes machine learning, big data technology, dominating the sensor data, machine-to-machine communication and automation technologies. IoT ensures down time monitoring, production / productivity monitoring, continuous tracking of targets, idle running, section wise energy consumption and safety of equipment as well as workers



Savings

₹55,553



Investment

₹1,00,000



Pay Back

22 months

Benefits

- Improved productivity
- Continuous monitoring, elimination of idle running
- Analysis tool for identifying, solving issues and maintaining profitability
- Reduced energy consumption and energy costs



Outcomes



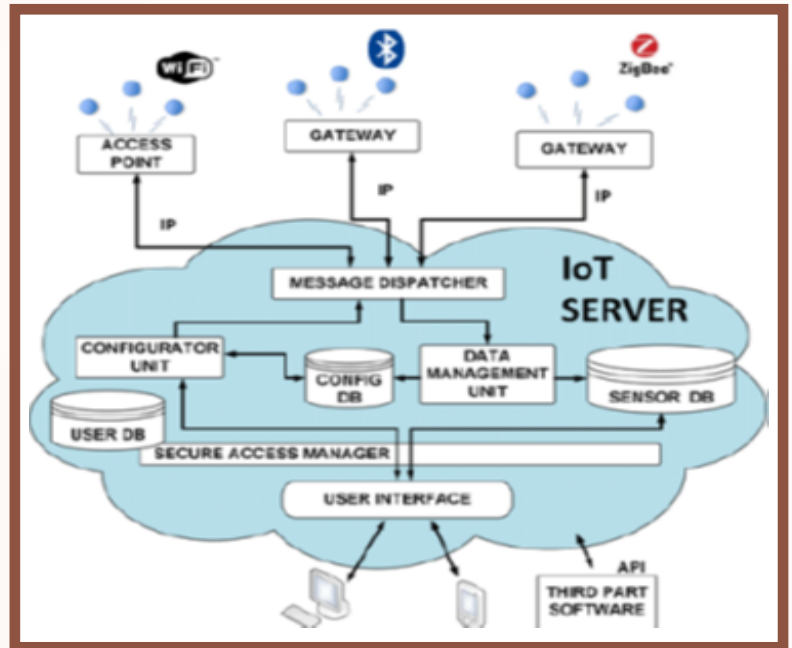
7,548 kWh of annual briquettes saving



₹ 55,553 of annual cost saving



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



Replication Potential

In all the units with automated processes

Cost Economics

Energy saving per month	629 kWh
Energy saving per year	7,548 kWh
Cost savings per year (₹ 7.36/kWh)	₹ 55,553
Investment cost	₹ 1,00,000
Simple Payback period	22 months



Calculation

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

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