19% reduction in Energy bill of a Textile MSME unit through Energy Efficiency Measures

Background

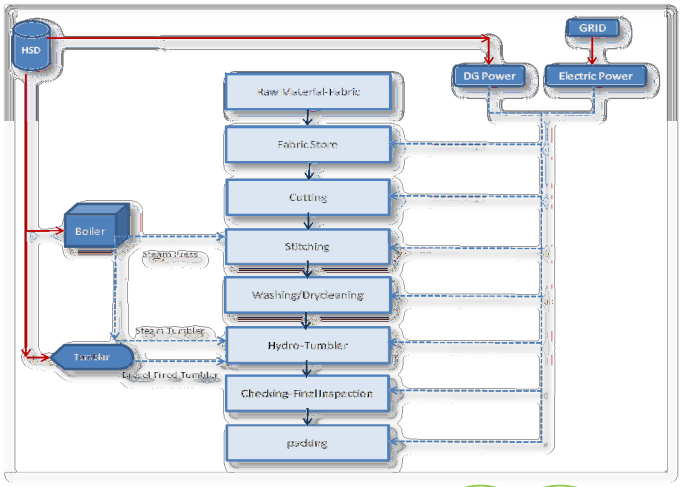
Faridabad is a mixed cluster in Haryana having over 12000 MSMEs majorly manufacturing various kinds of automobile parts, sheet metal components and fabrics. There are majorly 15 industrial segments in the cluster with a high range of products from soaps to tractors.

Unit Profile

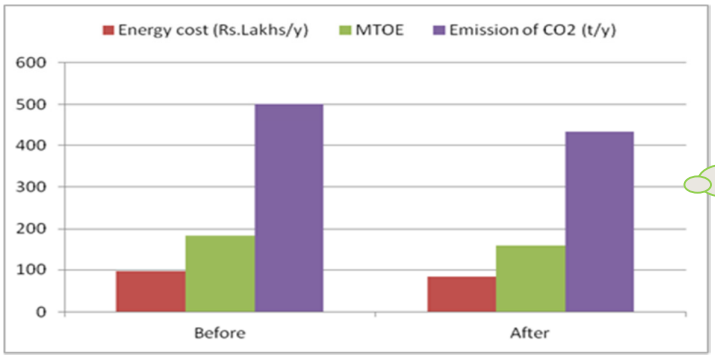
M/s ABC is a MSME unit engaged in manufacturing of garments. Total Energy bill of the unit was Rs.96.10 lakh per annum which was around 3% of total turnover. About 40% of the unit's energy bill was on account of Grid Electricity, 31% accounted for Diesel-DG and remaining 29% accounted for Diesel-Thermal.

Process description

The manufacturing process involves the buying of different fabrics from the market as per the order and the requirements of the client. The fabric is then cut and stitched in the unit which is again based on design requirements of the client. After stitching, the fabric is washed and dry cleaned accordingly if required. Then the stage comes of final inspection and latter the packaging is done. Diesel and Grid Electricity were used to operate major energy consuming equipments in the unit i.e. HVAC, lighting, machines etc.



Overall Impact - Post implementation



Overall Impact

19% reduction in Total Energy bill (i.e. savings of INR 11.6 lakh p.a.) Simple payback of 8 months

This case study has been prepared under WB GEF Project titled "Financing Energy Efficiency at MSMEs in India". The project aims to identify, design & implement Energy Efficiency (EE) solutions in 500 MSMEs in 5 clusters with potential of EE investment of more than Rs. 100 crore and reduction in GHG emissions equivalent to 1.2 million tonne CO_2. This project is being co-implemented by Small Industries Development Bank of India (SIDBI) and Bureau of Energy Efficiency (BEE).

INTERVENTIONS

Replacement of the existing faulty PRV in steam line

Baseline Scenario

The boilers rated pressure is 10.34 bar. At present the boilers are generating steam at a pressure of 5 Kg/cm², and temperature of 155°C. This steam is supplied to the plant from steam header which enters the bypass line of the line having PRV installed. At present the PRV is in faulty condition and the steam is supplied by a bypass line. The steam supplied is at 3.5 kg/cm² pressure.

Recommendation

- The unit was advised to replace or repair the existing faulty pressure reducing valve.
- It is also proposed to raise the steam pressure generated by boiler to 10 kg/cm² and then pass the steam through PRV, to drop the pressure as required by plant.

Implemented Scenario

Based on the project's recommendation, the unit replaced the existing faulty pressure reducing valve with new PRV.

Newly installed system saves 24,156 liters of diesel per annum.

The Investment of Rs.1.98 lakh made by the unit has resulted in monetary savings in energy cost of Rs.11.13 lakh per year with simple payback period of two months.

Fuel Switch for Boiler

The fuel which was being used in the boiler was diesel. As suggested, the unit has replaced diesel fired boilers with PNG fired boilers. This has helped the unit to reduce the overall energy cost by 4.39 lakh per year.

Contract Demand Reduction

The present contact demand of the unit was found to be 499 kVA. As suggested, the unit has surrendered 99kVA contract demand. This has helped the unit to reduce the overall energy cost by 1.54 lakh per year.

Support provided under the Project

- Walk Through & Detailed Energy Audit
- Identification of Energy Efficiency Interventions in the unit
- Finalization of the specifications for the Energy Efficiency Interventions
- Identification of technology providers/vendors
- Facilitation for an interactions between the unit and technology providers;
- Technical support during commissioning
- Monitoring & Verification

For Further Information please contact at

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