

9% reduction in energy bill of a textile MSME unit through Energy Efficiency Measures

Background

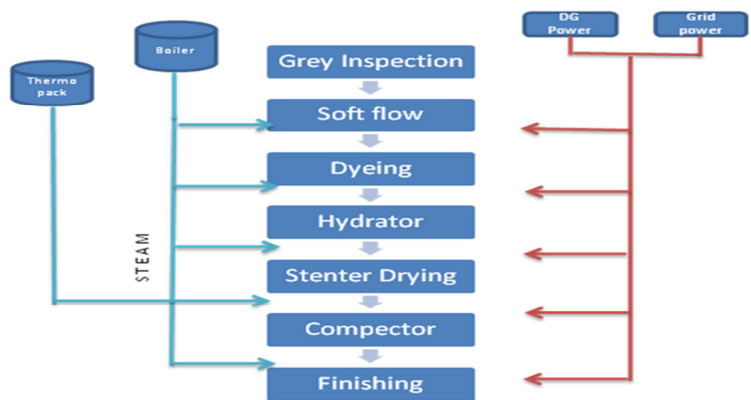
Faridabad is a mixed cluster in Haryana having over 12000 MSMEs majorly manufacturing various kinds of automobile parts, sheet metal components and fabrics. There are majorly 15 industrial segments in the cluster with a high range of products from soaps to tractors.

Unit Profile

M/s ABC is a MSME unit engaged in manufacturing of dyeing and printed textiles producing about 1850 tpa. Total Energy bill of the unit was Rs.288.0 lakh per annum which was around 30% of total turnover. About 44% of the unit's energy bill was on account of Pet Coke, 33% accounted for Grid electricity and remaining 23% accounted for Diesel-DG.

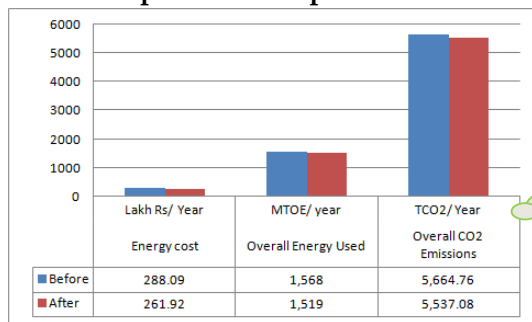
Process description

The manufacturing process involves the procurement of raw material as Grieg Wovwn fabric followed by the inspection for quality. After this, Dyeing is done in a special solution containing dyes and particular chemical material, depending upon the type of the fabric or garment being produced. Then the fabric is sent to centrifuge that may cause its colour to bleed or the fabric to shrink. Compacting is done for the dimensional stability of the fabric and presenting it to plaited form. It also minimized shrinking nature of the fabric. After the drying process, finished fabric is folded and dispatched.



Pet Coke, Diesel and Grid Electricity were used to operate major energy consuming equipments in the unit and other utilities i.e. pumps, motors associated with equipments, and lighting.

Overall Impact - Post implementation



Overall Impact
 9% reduction in Total Energy bill (i.e. savings of INR 26 lakh p.a.) Simple payback of 3 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 CO₂. This project is being co-implemented by Small Industries Development Bank of India (SIDBI) and Bureau of Energy Efficiency.

INTERVENTIONS

Synchronization of DG frequency

Baseline Scenario

Implemented Scenario

Installation of capacitor bank to improve power factor

The average power factor of the unit was low, at 0.970. As suggested, the unit has installed a fixed capacitor bank of 364 kVAR to improve the power factor to about 0.99. This has helped the unit to reduce distribution losses and voltage fluctuation besides avoiding penalty.

Replacement of T-12 & T-8 lamps with T-5 lamps

The unit was lighting the production area through T-12 & T-8 lamps. With the suggested recommendation, the unit has replaced 65 no of T-12 & T-8 lamps with T-5 lamps. This has resulted in an annual energy saving of 1932 kWh of electricity, equivalent to about Rs. 9000 per year with simple payback period of 34 months.

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

Disclaimer: This case study has been compiled by DESL on behalf of SIDBI under WB GEF Project. While every effort has been made to avoid any mistakes or omissions, any agency would not be in any way liable to any person by reason of any mistake/ omission in the publication.

For Further Information please contact at

Energy Efficiency Centre, Small Industries Development Bank of India (SIDBI), Ground Floor, E-1, Videocon Tower, Jhandewalan Extension, Rani Jhansi Road, New Delhi-110055, India, Ph. 011 23682473-77, www.sidbi.in

