

## 9.5% reduction in energy bill of a auto component MSME unit through Energy Efficiency Measures

### Background

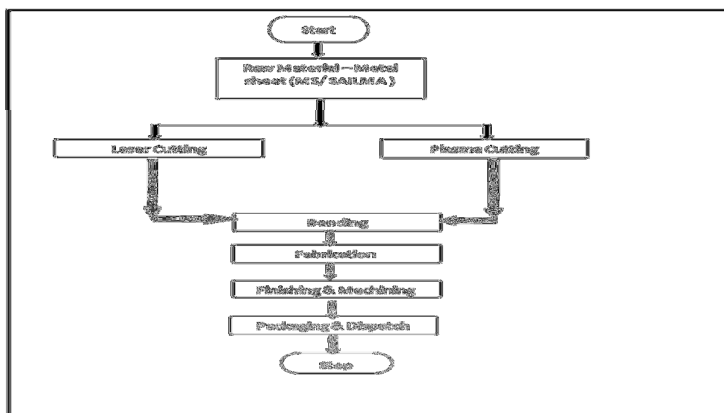
Faridabad is a mixed cluster in Haryana having over 12000 MSMEs majorly manufacturing various kinds of automobile parts, sheet metal components and fabrics. There are majorly 15 industrial segments in the cluster with a high range of products from soaps to tractors.

### Unit Profile

M/s ABC is an MSME unit engaged in manufacturing of auto components. Total Energy bill of the unit was Rs.194 lakh per annum which was around 2% of total turnover. About 84% of the unit's energy bill was on account of Grid electricity and remaining 16% accounted for Diesel-DG.

### Process description

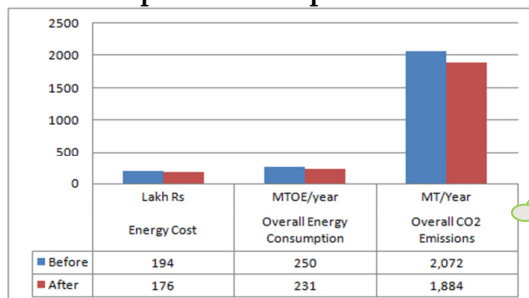
The manufacturing process involves the procurement of sheet metal of thickness between 2 mm to 40 mm from open market. Sheet metal of thickness between 2 mm to 22 mm are cut using laser machines and sheets between 22 mm to 40 mm are cut using plasma cutting machine. After the cutting of the sheet metal as per the desired size then the components are processed either in Hydraulic Press, Power Press or Press Brake machines



to give the shape by the process of pressing or bending. The shaped/ bent metal is then sent to the fabrication section for welding of the different parts of the components for the final product. As per the requirement the welded components are further processed in the radial or boring machines. In house painting and coating has been done by manually spraying as per the requirement. In every step of the process, the products are inspected and finally the auto components are packed and ready for dispatch.

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

### Overall Impact - Post implementation



**Overall Impact**  
 9.5% reduction in Total Energy bill (i.e. savings of INR 18 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<sub>2</sub>. This project is being co-implemented by Small Industries Development Bank of India (SIDBI) and Bureau of Energy Efficiency (BEE).*

## INTERVENTIONS

### Installation of Timer Controller in Plasma Cutting Machine

#### Baseline Scenario

Plasma Machine – 001 had an idle time of about 52% and the average idle power of the machine was about 0.543 kW. The loading average power is 21.6 kW. Annual energy consumption during idle time was 2030 kWh. No control over the running time leading to high energy consumption.

#### Recommendation

The unit was advised to replace the existing NG-fired TFH with a energy efficient wood/biomass briquette-fired TFH.

#### Implemented Scenario

Based on the project's recommendation, the unit installed a timer controller for Plasma machine

Newly installed system saves 2031 kWh of energy per annum.



The Investment of Rs.6000 made by the unit has resulted in monetary savings in energy cost of Rs.14000 per year with simple payback period of five months.

#### Installation of VFD for Compressor

The average power consumption during unloading was 22.4 kW. As suggested, the unit has installed a VFD for compressor. This has helped the unit to reduce unloading energy consumption and overall energy requirement.

#### Replacement of T-8 fixtures with T-5 fixtures

The unit was lighting the production area through 190 no. of T-8 lamps. With the suggested recommendation, the unit has replaced T-8 lamps by T-5 lamps. This has resulted in an annual energy saving of 31512 kWh of electricity, equivalent to about Rs. 2.2 lakh per year with simple payback period of 13 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

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