

Excellence in Energy Management...

CASE STUDIES

A case study of a Shoe Industry

Application: DG Performance and On Line Monitoring

Liberty Enterprises was established in 1954, Today they have five manufacturing units, that include tanneries and production located at Karnal, Gharound and Agra. Of the two operating units at Gharounda, Haryana, one is devoted to tannery and is fully equipped with latest machines and devices for curing, stretching, stripping, skiving, splitting, dyeing and finishing. The other unit comprises machines for injection moulding, unit sole, dyeing and packing.

The Karnal factory is equipped with the state of the art machinery for manufacturing shoe uppers and other leather products like leather garments, sports goods, handbags, travels goods, wallets, finished and tanned leather of all kinds in cow, buffalo, goat and sheepskin.

Energy Consumption Pattern

The Major loads are for Cutting machine, Stitching machine, Compressor, Heating, Pumps and Lighting loads. Since the plant operates in three shifts, there is a need for close monitoring of energy consumption.

System configuration

The Conzerv's eLAN[®] Energy Management System comprises of 9 nos. Conzerv make Power & energy meters, 2 nos. at incomer transformer and 7 nos. at the DG set. Conzerv's Energy Meters DM 52 (10 nos.) is connected to all the Individual Loads to PC through PLC.

Benefits of Conzerv eLAN[®] Energy Management System:

On Line monitoring

Before installation of eLAN[®] system they were collecting the data from a class 2.0 electro-mechanical energy meters which is connected to incomer and only major loads.

After installation of Conzerv's eLAN[®] individual feeder consumption is monitored and benchmark is set for the each shop. The unmetered loads and the cable losses were identified.

- Automobiles
- Beverages
- Cement
- Chemicals
- Engineering
- Fertilizers
- FMCG
- Glass
- Hotels
- Hospitals
- IT
- Paints
- Paper / Pulp
- Petrochemicals
- Pharmaceuticals
- Textiles
- **Shoes**
- Steel
- Sugar
- Wind Mills
- Shopping Malls

Conzerv Systems Pvt Ltd
 (formerly Enercon Systems Pvt Ltd)

Benefits:

1. Saving in energy consumption kWh around US \$ 552/month. The customer now intends to monitor individual machine in each shop floor to determine the energy consumption of each machine along with the run hours to determine the efficiency of the operator.
2. Using Conzerv's eLAN[®] Energy Management System they were able to monitor energy consumption of the machines in heating section, which are continuously ON. Corrective action is taken for switching off the machine by knowing the data from daily report & shift wise with respect to production

Before: The loading patterns of the DG sets was not monitored during night time, due to which the DG set would trip because of overloading & under loading.

Diesel Generator (DG) Monitoring:

After using Conzerv's eLAN[®], they are able to identify the causes for tripping of the DG. Further, the DG loading with respect to fuel consumption and efficiency of generator was monitored and the cost/unit calculated which helps to analyse the ageing & efficiency of generator.

Benefits: Saving in fuel around US \$ 281/month.

Conzerv eLAN[®] Energy Management System "It is like a Police station, so that the mistakes can be easily monitored"

says Mr. Gunjan Chowdhary
 Liberty Enterprises

Pay back:

Investment in eLAN [®]	US \$ 8300
Annual saving:	US \$ 10000
Payback period:	10 months