

## Excellence in Energy Management...

### CASE STUDIES

#### A case study of a Pharmaceutical Company

A leading pharmaceutical company in the west in India, manufacturing penicillin, was seriously concerned about energy costs and wanted to identify and reduce energy losses.

The company installed Conzerv's eLAN<sup>®</sup> Energy Management System and realised these benefits:

1. Control of Transmission and Distribution Loss: Using eLAN<sup>®</sup> on-line measurement facility, it was conclusively established and documented that the Distribution loss was different under different loading conditions and at various operating power factors. It varied between 1.71%, 1.4% and 2.6%. This is because Transmission & Distribution losses are directly proportional to the kWh drawn and to power factor at different consuming points.

Once this was recognised, it became easy to control losses through optimising energy and power factor.

2. Power Factor Improvement: eLAN<sup>®</sup> helped to monitor Power Factor at different loads vs. the System Power Factor. This led to the installation of additional capacitors and the system Power Factor improved from 0.92 to 0.98. In Maharashtra there is an incentive for maintaining Power Factor up to 0.99. Through this measure alone, the company was able to save approximately US \$ 19,375/- million in one year.

3. Power savings in Chilled Water Distribution System: The power consumption at various discharge pressures was monitored and the optimum pressure required for the process plant was established by taking into account the power consumption. This resulted in considerable power savings.

4. Erroneous Analog Meters: The company had old analog meters which were showing erroneous reading and hence it was difficult to know the actual consumption. Control was therefore difficult. By replacing these with Conzerv digital meters, they were able to get accurate measurements and this helped in generating accurate MIS reports based on which, control of energy became possible.

- 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)

5. Power saving by using VFD: By installation of VFD on some large Stirred Vessels, the company has achieved substantial energy savings by controlling the RPM of the agitators as per the process requirement. The savings realised were about US \$ 5208/- over a one year period.

6. Compressors: Power consumption was monitored for individual centrifugal compressors at various flow rates and discharge pressures. Various measures were implemented for reducing pressure drop across heat exchangers & pipe line distribution. This resulted in reducing power consumption by around 9% per unit of air generated. The total savings was US \$ 1,713 units amounting to a sum of US \$ 141,67 per year.

Total Savings:

		US \$
By improved Power Factor	-	193,750
By use of VFD – Direct savings	-	52,083
By Streamlining Air generation & Chilled water generation	-	141,667
		<b>387,500</b>

Total Investment

		US \$
eLAN®	-	10,416
VFDs, Capacitors etc.	-	60,416
		<b>70832</b>

Payback period 2 months