

Excellence in Energy Management...

CASE STUDIES

A case study of a Tea factory

Introduction:

This is a case study of tea processing plant. There are around 220 small tea processing units in Neelgiris*, India. The contract demand is 112 kW with the monthly power consumption ranging between 20,000 – 35,000 units. This may vary depending upon the season and the peak consumption months are May and June.

The problems these units faced before installing Conzerv's Smart Demand Controller

1. The units were penalised with DOUBLE the demand charges for exceeding the Contract Demand, and
2. PF penalty when PF goes below 0.85 lag.

Benefits after installing Smart Demand Controller (EM 3460)

1. The company monitors "Demand" with EM 3460 at the main incoming supply point. The predictive feature of this product helps to take instantaneous decisions on the utilisation of spare demand. It also controls the loads to avoid crossing the pre-set demand targets.
2. The plant was able to optimally utilise the contract demand and controlled within the limit. By using PdDM, a unique feature in the EM 3460 the plant was able to predict demand and reduce the load without affecting the production.
3. Cross verification of kWh, PF and Maximum demand with EB meter.

The pay back period was less than 12 months.

- Automobiles
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- 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)

*(Neelgiris includes Coonoor, Kotagiri, Gudalur & Ooty)

Benefits if Power Factor Controller is installed:

The Power Factor should be maintained at not less than 0.85 lag. The penalty if the Power Factor decreases is calculated as follows:

Below 0.85 upto 0.75	- 1.0 % of total charges for every reduction of	0.01 in PF from 0.85
Below 0.75	- 1.5 % of total charges for every reduction of	0.01 in PF from 0.85

For example:

If the plant consumption is 25,000 kWh / month.

Electricity Board tariff per unit = US \$ 2,187

If PF is 0.80 lag = $0.85 - 0.80 / 0.01$
= 5 %

Penalty: Rs 1,05,000 X 5% = US \$ 109 / month

The cost of PF Controller panel = US \$ 1,250
(Include IPFC Relay & Control Panel)

Pay back period is less than 12 months.