

Case Study: **Specific Power Consumption**

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Background:

While analyzing historical data of a medium sized chemical company, the specific energy consumption was observed to be unusually higher at lower production levels.

The absolute consumption was more or less constant despite considerable variations in the production.

Operating Scenario:

The production was observed to be of batch type with a streamlined cycle time; nonetheless there were considerable gaps between the subsequent batches. The reasons for such delays included

- Non-availability of raw materials
- Manpower constraints & Communication gaps
- Excess capacity

The product was left in the reactors till subsequent process requirements; leading to higher consumption of energy.

Energy Conservation Measures:

The above concerns and issues were addressed in two steps.

The small & no investment measures were implemented during the first stage; which included

- Training programs as well as brain storming sessions to evolve best operating practices and ensure dissipation of knowledge.
- Streamlining the production planning and introducing No-work day.
- Switching off the chilled brine as well as cooling water system when not required.
- Providing timer based controller for drives and reactors motors.

The second step involved incorporating investment oriented suggestions (typically having a payback period of up to 12 months); which included.

- Providing variable speed based controller for reactor motors
- Installing additional dryers for de-bottling the production

Outcome:

- The first step resulted in overall saving of 6.5%, with the specific energy consumption improving by 30% at lower production levels.
- The second step resulted in overall saving of additional 5.0%, with the specific energy consumption improving by 20% at lower production levels.

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Helping You to Conserve Resources

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