

New Zealand Power Crisis hurting?

Need to save Money and Power?

Here is how two companies have done it.

Saving energy is a big issue with hydro power levels low, fuel, oil and gas prices rising. Many companies feel caught out however a number of manufacturing companies are addressing these issues head on. By focusing on improving effectiveness of the equipment significant opportunities exist to reduce costs including energy.

At Mars Petcare, the Wanganui based site in New Zealand has focused on improving the plant performance using Total Reliability Score (TRS), similar to the Overall Equipment Effectiveness (OEE) model used to drive improvements by a lot of CTPM member sites. As part of this they have seen a **14% decrease in energy costs** as displayed in the diagram Figure 1. The spike in Period 13 of 2006 was the result of a Christmas downtime period. These gains were achieved without a specific focus on reducing energy costs. A key to this improvement was improving the filling and cycle times of the retorting or cooking process on site, as well as a reduction and elimination of losses and waste in the factory.

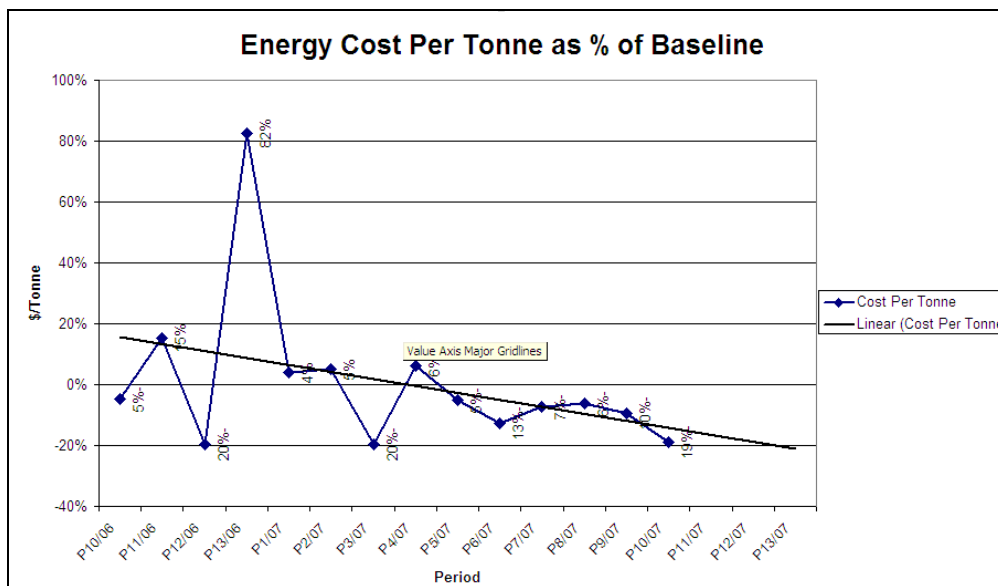


Fig 1 Mars Site Energy cost as % of the baseline costs

The Juken New Zealand Limited (JNL) Triboard site based in Kaitaia has also been able to achieve a 10% reduction in total energy costs per month despite increasing energy prices in 2007.

This was achieved by establishing a number of Cross-functional improvement teams as well as focusing Area Based Team improvement activities on reducing energy costs. Since 2001, JNL Triboard has increased the Plant OEE from 56% to around 89% in 2007, also as a result of implementing the above improvement focuses.

As part of the energy savings plan, the production planning process and order management was changed to allow complete site shutdowns for approximately 2 days every month. With the increase in OEE at the plant over previous years this was possible. A key challenge in this scenario is having the discipline to not start the next weeks or months orders “just in case”, or allowing maintenance perform extra maintenance work just because the plant is down.

A large source of energy consumption on site was the process of converting wood chips to fibre using a Refiner. Trials changing the refiner plate design had a significant impact on energy use. Due to the quality and other hidden costs of introducing variation into the production process, changing the production rate or repeated starting and stopping of the machinery with energy spot prices was found to not be cost effective.

Maintenance Department improvements were also required. These included changing the timing of maintenance shutdown start and finish times to avoid the power price peak times which in turn helped reduce energy costs. With the increasing OEE, more time on the planned work (2 days downtime) has also lead to lower contractor costs.

The Area Based Teams had a “turn it off” focus with the complete site shut as well as:

- Identifying compressed air leaks that increase energy costs
- Reducing excess energy use with correct lubrication and
- Scheduling production during off peak rate periods where possible. Items such as the site chipper with excess capacity were operational during off peak hours.

The work culture on site was very positive with people reminding each other to turn equipment off when idle.

As all electrical maintenance people will tell you, large motor switching gear failures increase as a result of increases in machinery on and off cycles. JNL Triboard have found a small increase in switching gear maintenance costs, however the payback has been worthwhile.



For further information on Lean & TPM, please contact Dave Brokenshire, CTPM Managing Navigator NZ on +64 272 168 509, CTPM Australasia Head Office on +61 2 4226 6184 or visit www.ctpm.org.au