

Vigilistics Helps Milk Powder Plant Save a Quick and Easy 3% Off Their Energy Costs

Plant Operation Overview:

The plant receives five million pounds of milk each day, most of which is used to produce non-fat dry milk powder. The plant sells the excess cream.

The operation is continuous making a single product through the day, with product changes after the daily cleaning and sanitation operations.

Due to ever increasing energy costs, the total energy cost to produce a pound of milk powder has increased to an average of over 40% of the total manufacturing costs. The percentage of energy costs can vary by individual product, efficiency of the producing plant, and by the cost per unit of energy consumed by the manufacturing facilities.

Improving sustainability in this plant is directly related with more efficient use of energy in the production of dry milk powder.

The Opportunity:

Plant information about energy use consisted only of the total plant energy costs (utility bills) vs. total units of product produced. Current data usefulness is the issue. Currently, the plant management team must wait until the next monthly bill arrives to see the effects of a change in operations. For plants that produce multiple types of milk based powder, having costs by product type is necessary.

The actual costs of production of dry milk are heavily dependent on energy costs. The plant had a budgeted amount for energy, and the management needed a way to determine actual cost of energy use per pound of product. This would have value for decisions on product pricing and for future budgets. Also if the cost per pound of powder showed variations, this would indicate the possibility to improve evaporator and drying operations to match “best days” operations.

Also because energy costs for the plant are so high, management needed ways to identify energy waste so that corrective action could be taken.

The plant had low product loss, due to careful monitoring of receiving operation and continuous operations of the plant. Product loss was less than 1%. When losses did occur, they were due to “events.” Management needed a way to identify the loss events and take action.

The Solution:

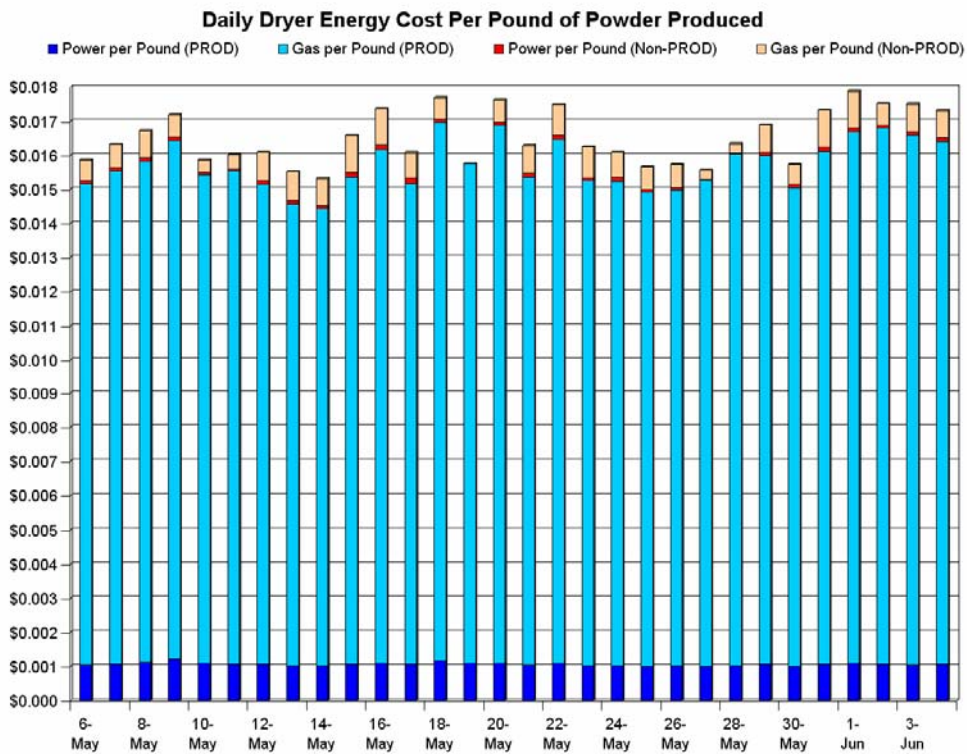
Vigilistics software was chosen as the data collection tool with real-time reporting capabilities. The Vigilistics system tracks production and energy use in real time, and correlates with asset utilization and other operating parameters.

The goal was to reduce product loss to reduce energy use, and to improve utilization of assets.

Key Results:

Energy Use During Normal Production

Using the correlated production information from the Vigilistics system, management saw that the energy use per pound of product varies by about 15% from day to day in this plant, in a non-random pattern. Vigilistics includes “drill-down” capability to help identify the underlying reasons for the variations.

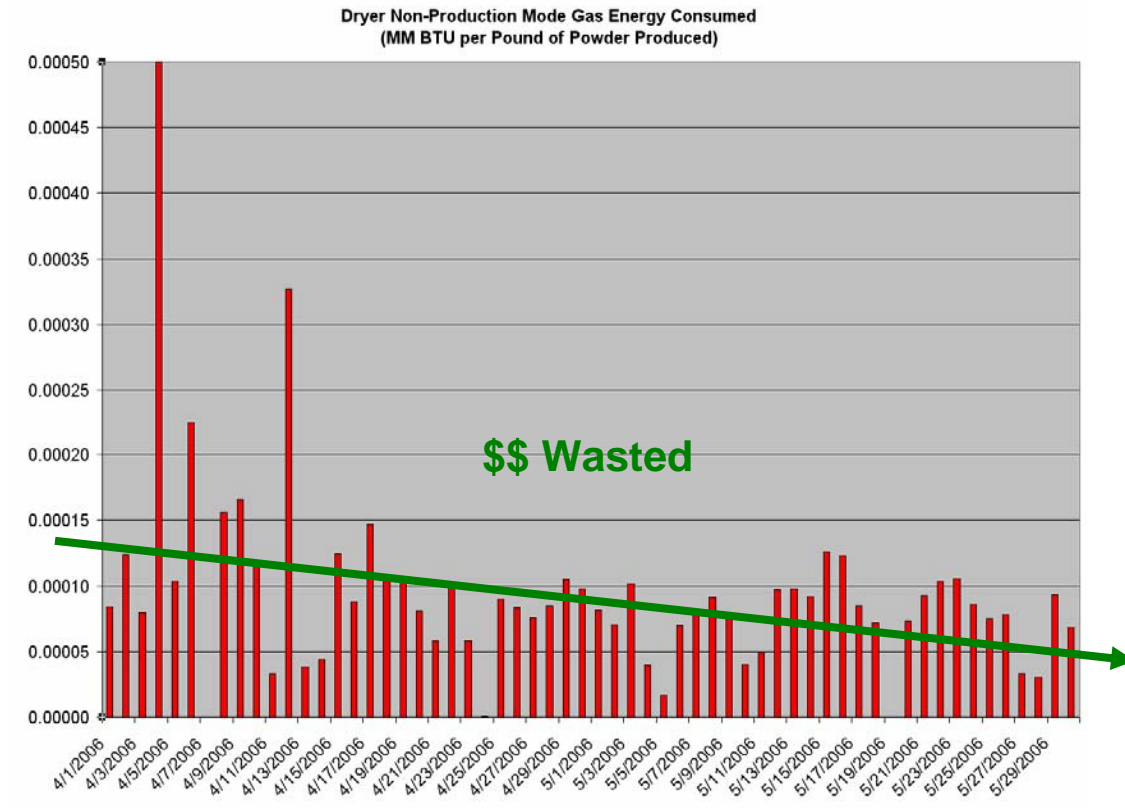


Some of the daily variation can be due to the product being produced that day. In this case the energy use per pound is helpful in understanding true costs. This helps with budgets and also with understanding what price level is needed to run profitably.

In the same products are being run, and energy cost per pound varies by 15%, this leads to opportunities for operational improvements. The further investigation could be to drill-down and identify the efficiency of specific operators, for example. Or if the inefficiencies were caused by incidents, these could be investigated for corrective action.

Wasted Energy During Non-Production Modes of Operation

Notifications and reports are available for plant technical staff, just as for managers. Generally the staff may have different intelligent rules triggering the real-time notifications, and they may have more detailed reports. Also the staff may be trained for detailed access to Vigilistics for special investigations. For example, an analyst looked at data for a dryer, and produced the following analysis of energy use during non-production modes.



The analysis showed clearly the days when excessive energy was used, and this was traced to specific operator behavior. For example, an operator may run equipment on water until the milk is ready to run. In this example it was a dryer. However the same wasted energy use has been observed in pasteurizers.

After the analysis of the first few high-waste days, the management became engaged in seeking a solution. The operators were given better guidelines, and the problem events were eliminated as can be seen in the Monthly record above. The saving was about 3% of plant energy costs. Notifications that are automatically sent to management can be defined for variances like excessive energy use.

For further information about reducing energy waste and improving sustainability, please contact Vigilistics.

Contact Vigilistics:

Vigilistics, Inc.
23361 Madero
Mission Viejo, CA 92691

Telephone: 949-900-8380
Email: Info@Vigilistics.com
FAX: 949-380-3778
www.vigilistics.com