



Level



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Solutions

Beating the boilerhouse blues

Energy monitoring solution helps Dairy Crest reduce fuel costs



As the UK's leading chilled dairy foods company and one of the ten largest food companies in Britain, Dairy Crest is a large energy consumer. When challenged to reduce the fuel costs at its Camelford Creamery in Cornwall, Endress+Hauser's energy monitoring solution helped Dairy Crest to take its energy savings to the next level.

The challenge

Davidstow is Dairy Crest's largest cheesemaking creamery and has been producing cheese since 1950. Home to both Cathedral City and Davidstow, the site employs around 100 staff and has a production capacity of 55,000 tonnes of cheese, made with milk supplied by 500 local farms. Due to its rural location, there is no natural gas pipe network to the site and so heavy fuel oil (HFO) was used to fuel the three on-site boilers. In a bid to reduce the amount of fuel used, Dairy Crest decided to instrument the boilers so that fuel-to-steam efficiency could be determined and benchmarks obtained (kWh/kg) for the fuel economy of each boiler.

The solution

Endress+Hauser's instrument solution included the installation of Promass Coriolis mass flowmeters on the fuel lines to the boilers, Prowirl Vortex mass flowmeters on the steam generated from each boiler plus Promag electromagnetic flow and temperature transmitters on the feedwater lines to each boiler. All measuring points were connected to a data collection panel in the boilerhouse

which was in turn connected to the site's Ethernet local area network. Automatic interval consumption data was collected via a networked PC and then imported directly into Endress+Hauser's eSight energy monitoring & targeting software solution. From here, reports illustrating boiler fuel economy and performance were generated with a daily, weekly and monthly viewing schedule.

The benefits

Dairy Crest's eSight energy monitoring solution provided all the data necessary to investigate and build a business case for methods of reducing fuel costs. This included the installation of a deaerator that allows the feedwater to be maintained at a higher temperature of around 107°C. This means less fuel is required to raise steam and results in an improved fuel-to-steam efficiency. At the same time Dairy Crest started using a cleaner, more refined fuel oil. These combined measures resulted in fuel savings of 7%. As an additional energy-saving step, Dairy Crest has now installed a biomass boiler to further reduce fuel costs. Fed by renewable woodchip fuel, it replaces two of the existing fuel oil boilers and provides all medium pressure saturated steam to the site.

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