Dow achieves 5.2% cut in fuel consumption using the Fuel Systems

A global chemical manufacturer has invested in a Maxsys Fuel System for use on its steam-raising gas fired process boiler. Not only has the new equipment helped reduce CO2 emissions to atmosphere, it has cut annual fuel consumption by 5.2% – a figure equating to an impressive financial saving.

The Challenge

With annual sales of US$54 billion and 46,000 employees worldwide, the Dow Chemical Company is a true giant of chemical manufacturing. The company has just set a new sales record of £14.8 billion for Q1 2008 – up 19% on the same period last year.

Dow first came to King's Lynn in 1957 when a joint venture (Dow Agrochemicals) was formed with an existing company. Today, the 75 acre site runs three manufacturing plants: building materials (fabricated products such as Styrofoam); emulsion polymers (Dow latex) and insecticides and fungicides (crop protection products such as Dursban).

Producing process steam to help manufacture these products is the main site boiler – a duel-fuel Blohm & Voss model. Predominantly run on natural gas, the company recently became concerned about the escalating price of energy, gas prices have climbed approximately 50% in the past 12 months alone.

"It's not as though we had only just noticed," explains Andrew Culshaw, Maintenance Leader at Dow's King's Lynn facility.

"In fact, we had already taken steps to minimise gas consumption, such as fitting economisers and fuel efficiency trims. To be honest, I felt we had done as much as we could, until I saw a flyer in a magazine promoting the Maxsys Fuel System. I was immediately intrigued. I'd not seen or heard of anything like it before."

The flyer led to an enquiry and a subsequent presentation by Maxsys at King's Lynn, which included information about a number of existing customers who had witnessed annual fuel consumption reductions of 5% or better.

"The technology appeared to be well established," says Mr Culshaw. "We knew that if we could achieve a yearly gas consumption saving of 5%, financially it would equate to thousands. We couldn't go wrong."

The Solution

Dow placed an order with Maxsys and the Fuel System was fitted to the Blohm & Voss boiler towards the end of 2007. The technology is a patented fuel treatment system that improves combustion by applying a finely calibrated magnetic field directly to the fuel. There are no moving parts and the units are maintenance-free.

The Outcome

A series of fuel meter readings collected before and after fitting confirmed that average gas consumption at the King's Lynn boiler site was 5.2% lower, following the installation of the Maxsys Fuel System.

"In total, the Fuel System is saving Dow substantial monies," says Mr Culshaw. "It has exceeded our expectations and will provide payback on the investment inside 10 months, instead of the budgeted 12 months."

Furthermore, as a company that has committed to reducing energy intensity by 25% between 2005 and 2015, significant progress, such as cutting gas consumption, can only help bring these targets closer.

"Emissions to atmosphere are a growing concern and we know these can be cut by reducing our gas usage. The emissions we produce are monitored both internally from a Dow corporate perspective, and externally – King's Lynn is an IPCC-regulated site," concludes Mr Culshaw. "We couldn't be more pleased with the impact created by the Maxsys Fuel System, both on our overheads and our social and industry-wide responsibility."

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