

Diageo Sets A New Standard

DIAGEO has developed world-leading brewing facilities, technical centre services and logistics headquarters at St James's Gate in Dublin. With a brewing history dating back to 1759, the site is a historic, large, multi-functional site, housing two complete production facilities, a major visitor attraction centre, corporate offices for more than 1,000 personnel, a theatre, and a swimming pool and leisure complex. Guinness has a long track record of innovation and this is readily applied to managing energy at the Diageo site. One of the key drivers for energy management at Diageo is to bring competitive advantage to the business.



Diageo Ireland, St James's Gate signed up to the Energy Agreements Programme in October 2006 and achieved certification to IS393 in April 2007.

In November 2005, gas prices rose sharply; this was particularly significant at St James's Gate as electricity is generated onsite from a combined heat and power (CHP) plant. A cross-departmental team was assembled to look at energy usage and implement measures to curb the increase in costs. A detailed energy audit was commissioned to identify where the energy was being used, who were the biggest users and where the most potential for energy savings lay. Once a number of process energy-efficiency improvements were implemented, the energy team began to look for a structured system which could sustain these savings into the future – this pointed the team towards IS393.

Not just a 'one off'

The energy team at St James's Gate views IS393 as more than a 'one off' energy review; they see it as enabling the tracking, controlling and driving of continuous improvement in efficiency. Rather than simply chasing compliance with the standard, they looked to see what the standard could do for the company. Tony O'Sullivan, the Energy Manager at St James's Gate, feels that the benefits of this approach should be passed on to companies interested in signing up to the Energy Agreements Programme. There is always a danger, with any standard, of the system becoming an administrative burden without adding value to the business. However, Diageo has found that the strength of the standard is the emphasis on preventive actions. According to Tony, "The energy team has found that they

are more focused now and spending time on proactive energy management as a result of the structured approach that IS393 brought to the site."

A focus on energy-efficient peak operation rather than on 'normal operation' was identified as a key way to save energy. Traditionally, a site is designed for peak loads; however, with variations in seasonal conditions, production demands, etc, a site rarely operates at peak. This raises the question: if a plant has been designed for peak operation, how does one turn the system down while maintaining or increasing efficiency? By answering this crucial question, new opportunities were identified. By using concepts as simple as zone isolation and pressure reduction of services, the team moved the plant towards an operation which responded to demand dynamically, intelligently and efficiently.



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Striking a balance

Knowledge elicited from mass balances, data mining of historical data and other activities enabled the energy team to understand the energy processes onsite. Tony stresses that the visibility of energy use is crucial, as you can only control what you can measure. But he says it is equally important to use and communicate this data judiciously. The energy team found it was vital to strike a balance when selecting Energy Performance Indicators (EPIs) – too little data, and the message is lost; too much data, and the onlooker is overloaded. Data has to be converted to useful information. The key questions are: What will give us value – which leads to: What do we need to measure?

Cool project

One important project at St James's Gate focused on reducing the mechanical refrigeration load. Refrigeration accounts for 20% of the site's electricity use. Large volumes of townswater were already used on site. This townswater was identified as a potential cooling resource which could be used to reduce the need for mechanical cooling. A new system was installed which used incoming

water to perform some of the process cooling duty. Commissioned in April 2007, this project is on course to deliver a saving of 1 GWh per annum (2% of the site's electrical load in 2006). The project has multiple benefits, including a reduction in cooling and heating (as the water is preheated for additional processes in a different area of the site).

This project highlighted the ability of the multifunctional energy team to identify, measure, evaluate, design, construct and implement energy and cost reductions in large-scale projects.

All-round commitment

To engage with personnel and accumulate a bank of ideas for saving energy, group meetings are held with plant staff from all departments. The ideas brainstormed during these meetings are evaluated and fed into the register of opportunities. The potential of these ideas is discussed with the brewers and other stakeholders until a clear understanding of the process is developed. This often means looking at the processes from first principles, followed by running trials. These trials are programmed to gauge the operational and

energy impact of the change and to ensure that the quality of production is maintained. In this way, ownership of energy initiatives is pooled among personnel who actively partake in the energy management system, ensuring that all projects are formulated by a cross-departmental team.

Innovation in energy management is a key part of the operation at St James's Gate. This is evident by the Large Industry Energy Networks EPI performance improvement. The commitment of personnel and top management to delivering energy and cost reduction has been proven through the successful implementation of a wide range of projects. With a cross-disciplinary team driving the energy management system forward, there is a clear willingness to integrate energy management in the day-to-day roles and responsibilities of personnel.

The energy management system – certified to ISO 50001 – complements the blend of tradition and innovation at St James's Gate by establishing structures of continuous improvement, process understanding and idea development. These three pillars are strong supports of Diageo's market competitiveness.

Energy Performance Indicator - base 1997

