Success Story at HJ Heinz Dundalk

Set up in 1992, the HJ Heinz facility in Dundalk is around 144,000 m^2 in size and produces frozen ready meals, primarily for the UK. Electricity, gas and water are the main forms of energy used. Refrigeration is the greatest user of energy. Recognising the importance of living in symbiosis with the environment and reducing energy consumption, HJ Heinz Dundalk signed up to the Energy Agreements Programme in May 2006 and achieved certification to IS393 in May 2007.

HJ Heinz Dundalk is one of the first of five companies in Ireland to achieve certification to IS393. The system ensures that consideration of energy is embedded in the management of HJ Heinz operations. It does this by encouraging all staff to take ownership of energy-saving initiatives and by incorporating consideration of energy in all appropriate roles and responsibilities. In this way, the organisation has established an energy-saving culture.

Developed and operated by a cross-departmental team, the system is a tool to prevent uncontrolled and excessive variations in energy consumption. Although still in its infancy, the structure has already helped dedicated energy teams to eliminate a wide range of long-standing excessive energy usages. By gathering quantitative data and acting on facts rather than gut feeling, the teams have developed clear and effective solutions to reduce energy.

HJ Heinz has gone through a number of product transitions. Having previously operated as a bakery and topping facility, it began to produce frozen foods in more recent times. To maintain the integrity of production and operating standards, it has already implemented a number of quality, safety and environmental systems. In the past, energy was managed by the engineering organisation and a number of energy projects were carried out. However, it was felt that this informal approach would not lead to regular and sustained savings.

The 12-month plan

IS393 has a number of overlaps with ISO14001 (already implemented onsite). Some of the systems required for IS393 were thus integrated into the existing environmental system.
The company's environmental coordinator, Mohammed Hamouda, developed a 12-month plan to implement the energy management system to be integrated into the company's structures. A key milestone was to complete the Review of Energy Aspects. Areas with the most potential for saving energy were identified as:

- the refrigeration system
- the compressed air system
- the steam boiler system
- turning off equipment when not required

The focus areas were assigned to multi-function energy teams, who carried out gap analyses. From the outset, a plant-wide focus was a key element of the overall plan. The energy teams recruited personnel across all departments to ensure a multi-functional and holistic approach. The resulting analyses were fed into the register of opportunities and the energy management programme was formulated for the year.

'We underestimated what we would get out of it. It is not just a another standard. We get more than that'

Success story: the refrigeration system

One of the earliest success stories for HJ Heinz was the optimisation of the refrigeration system, the biggest user of energy. A process matrix was developed for brainstorming the operation of the system and this was filled with key parameters and information. This matrix helped staff to understand the system and led to a number of energy-saving projects. Key questions were asked about a number of processes. Certain aspects of these processes were treated in the past as just 'accepted parameters of operation', but now they were assessed and optimised in terms of energy efficiency. As a result, the running efficiency of the chillers was optimised, freezers were turned on and off as required, and the planning division looked at the value of energy in production processes to determine the most energy-efficient practices.

Major reduction in gas usage

Additional opportunities were identified in the thermal system. One of the two large cooking blanchers – normally left on in standby mode – is now turned off. This leads to a significant reduction in the steam load. In the distribution network, areas where lagging needed to be replaced were identified as a project for the next fiscal year. In the boilerhouse, a boiler setback project was completed. Generating steam at 10.7 bar, this high energy user operated throughout the week. After consulting stakeholders, the discharge pressure was dropped to 9.5 bar on weekdays and by a further 4.5 bar at weekends, to 5 bar. By implementing this no-cost project, gas usage went down by over 57% at weekends.

'The energy management systems is getting people talking'

Leaks fixed within 24 hours

In the compressed air system, leaks were identified as the key source of energy waste. The difficulty at HJ Heinz is that end-user machines are broken down nightly; typically, there are no leaks one day but a large number the next. To combat this, the company set up a tagging and repairing system. Each leak identified is now fixed within 24 hours. Shift teams and area supervisors are responsible for leakage rates in their areas and air flowmeters show an exact measure of the benefits of their work on the production floor.

Tests and investigations

The steam energy team are currently testing a pulse magnetic feed for gas engines to achieve better burning in the boiler, higher temperatures and improved efficiency. Micheal McNally, the Utility Supervisor, commented: "While there is some scepticism in the industry about such technology, it makes sense to try it. Further analysis is required, but initial indications look very positive."

Additional special investigations are ongoing in order to optimise the refrigeration system, while others are planned for assessing the viability of heat recovery on the production floor and the benefits of recycling water.

Fringe benefits

In addition to direct energy savings, some fringe benefits can be attributed to the development of these energy projects. Cost savings have been recorded in chemical reductions, reduced production downtime and increased labour savings.

Core benefit

The core benefit of the energy management system is the incorporation of energy in personnel roles and responsibilities and the synergy arising from teamwork and a changing energy culture. According to Valerie Kirk, the facility's Environment, Health & Safety Manager, "the energy management system is getting people talking". Energy is being discussed at all levels of the organisation: from the generation of performance indicators for global performance, to weekly production meetings, to plant security carrying out energy checklists. Projects are fully planned, operated in conjunction with a paper trail, benchmarked with quantitative baselines and KPIs, and fully discussed to ensure continuous improvement. With senior management support, HJ Heinz personnel are given the time and resources required to build an effective energy management system.

Significant savings into the future

Micheal McNally said of the Energy Management System, "We underestimated what we would get out of it. It is not just another standard. We get more than that." HJ Heinz has trimmed its energy budget by ensuring greater efficiencies, while continuing to grow economically and attain increased reliability in production. These key benefits were only made possible because HJ Heinz established a culture of holistic energy efficiency onsite. By making sure that staff have clearly defined roles and responsibilities, by allocating resources correctly and by committing itself to reducing energy consumption throughout the plant, HJ Heinz will make significant savings in the coming years.

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NDP National Development Plan 2007 - 2013
SEI is funded by the Irish Government under the National Development Plan 2007-2013 with programmes part financed by the European Union.