

## Schering-Plough Cork plant is global flagship

Schering-Plough (Brinny) is a subsidiary of Schering-Plough Corporation (USA), a global, science-centred, health-care company with leading prescription, consumer and animal health products. The company, located on a 26-acre site near Innishannon, Co Cork, has a staff of 570. It produces a range of biotechnology-derived pharmaceutical products. The Brinny plant is the main site for producing these products, which are marketed worldwide by the Schering-Plough corporation. The site was certified to the IS393 Energy Management Standard in December 2008.

### The implementation of the IS393 energy management standard helped achieve:

- sustained energy savings
- informed decision-making
- integrated energy management with shared responsibility
- a structured approach in line with the company's Right First Time methodology
- the surpassing of corporate energy - management standards



### Excellence rewarded

The company rewards excellence in energy and environment performance and is committed to good corporate citizenship. Schering-Plough (Brinny) has been a member of Sustainable Energy Ireland's (SEI) Large Industry Energy Network since the late 1990s. It was one of the first companies to join SEI's Energy Agreements programme.

The Brinny plant had already achieved ISO14001 certification for environmental management. The next logical step was to reinforce its commitment to energy management by implementing Ireland's energy-management standard IS393.

### Need to control energy use

The Brinny site combines manufacturing, laboratories, warehousing, utilities and administration. Significant energy-using plant includes:

- three natural-gas boilers, chillers and fans for HVAC and process cooling
- compressed-air generation for the manufacturing processes and instrumentation.

HVAC chillers and fans account for two-thirds of the electrical energy use.

Since the energy bill is over €6m, controlling energy use is a high priority for senior management.

### The corporate drivers

The main motives for implementing IS393 were:

- the rising cost of energy and the need to reduce its impact on operating costs
- the company's global Level II standard for energy management, required for all plants

Schering-Plough internationally also has an ambitious target for cutting greenhouse-gas emissions: 5% absolute reduction of 2002 CO<sub>2</sub> levels by 2012.

These efforts are intended to provide value to customers, employees, shareholders and the local community, and further reinforce the company vision: "To earn trust, every day."

**"IS393 provided the ideal solution for us. It suited the company's ethos and built on existing systems. Structures were already in place to accommodate such a standard and it aligned perfectly with our 'Right First Time' methodology,"**

says Stephen Sisk, the Energy Process Engineer.

### Leading in best practice

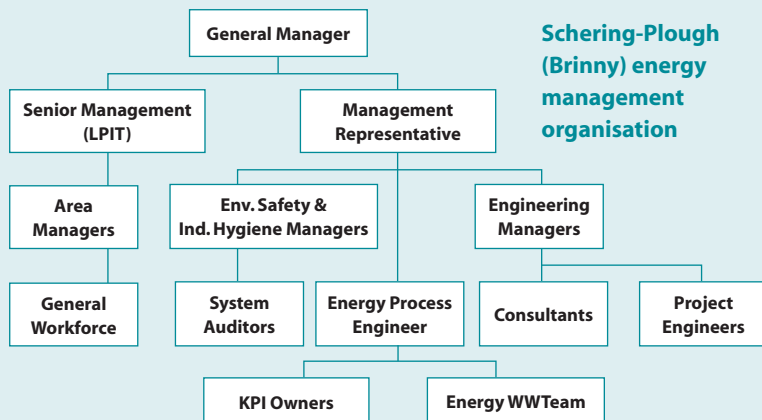
Senior management was on board from the start. They knew that a formal energy-management system could deliver the energy savings called for by their ambitious agendas for resource efficiency, corporate responsibility and cutting greenhouse-gas emissions. They allocated the time and resources required to implement IS393. At the outset, the Energy Process Engineer was appointed to lead the energy-efficiency effort.

The top-level goals for IS393 were to:

- demonstrate best practice in energy management
- be a leader within the Schering-Plough group

Although structures were already in place to implement IS393, a gap analysis of energy-management activity was required to identify focus areas for implementation.

Energy consultants then carried out audits to identify any remaining gaps in energy management and opportunities to improve energy efficiency. The energy team developed a plan to address gaps, prioritise opportunities and implement the system. The SEI-appointed Agreement Support Manager (ASM) assisted them throughout the process.



Schering-Plough (Brinny) energy management organisation

## Energy Management Stakeholder Categorisation

Category description	Example
Direct high impact	Utilities operator, Energy Process Engineer
Influencer	Supervisors, Process engineers
Leaders	Area managers
Projects and Procurement	Project engineers, Purchasing
Indirect impact	Security, Cleaners
General	General workforce, incl. Contractors
Maintenance crafts	Mechanical, Electrical and Instrument
Service companies	Chillers, Boiler, HVAC, Air compressor
Technical support	Validation, Quality, Tech. transfer

## Integrated energy management

A key approach to energy management at the site is its integration into the normal management structure of the plant. In this way energy management decision making is part of the business process and not a bolt-on activity. The energy team itself consists of people from cross-functional departments and levels within the facility, including finance, operations, production, procurement, engineering and environmental health & safety.

Schering-Plough recognises that lasting change can only be brought about by a change in the energy culture within the company. To help achieve this they developed a series of categories to describe the influence of stakeholders on energy use and their interaction with the energy management system. From groups with 'Direct high impact' to those with 'General' influence, every role within the company was categorised and roles, responsibilities and training assigned.

Training is a significant part of implementing IS393 at the facility. This ranges from general awareness training through to training on technologies and work areas such as laboratories and offices. Specific training is also delivered to the category groups identified in the table, with courses covering "Energy Aspects for Influencers" amongst many others.

## Tracking performance

With IS393, the energy management process is standardised so that improvements are sustained over time. One of the pillars of sustained energy savings are the Key Performance Indicators (KPIs). At the Brinny plant these are developed and agreed with stakeholders, and ownership of the KPIs is taken on by specified individuals within the organisation structure (see organisation structure above). This is crucial to ensure that targets are met. To date the plant has focused more on overall indicators, but plans to develop KPIs for other important technologies and processes.

## Energy savings

IS393 is paying dividends for Schering-Plough. The savings achieved in 2008 were:

**Electrical: 582,492 kWh**  
**Gas: 1,502,578 kWh**

Major projects with measurable savings, triggered by the increased focus on energy as a result of IS393 in 2008 are shown in the table. However, further un-metered savings were achieved from projects such as fixing steam leaks and ensuring equipment is off, outside of production hours.

### Metered energy savings as 2008

Description	System	Savings (kWh p.a.)
Shutdown of a standby boiler (gas)	Steam	1,400,000
Shutdown fermentation extension and services when not required (elec)	HVAC	266,212
Control space heating in administration building (elec)	Boilers	225,760
Insulate steam valves and fittings in boiler house area (gas)	Steam	102,578
Reduce compressed air leaks (elec)	Compressed Air	90,520

## Direct benefits

Through its certified IS393 energy management system, Schering-Plough aims to continuously improve the efficient use of energy to manufacture its products and operate its facilities at the Brinny plant. The implementation of IS393 has proved to be a highly successful strategy. Stephen Sisk adds

*"The plant has surpassed the requirements of our corporate directives with a system that satisfies our corporate standard requirements."*

The direct benefits of IS393 are:

- sustained energy savings;
- shared responsibility through a cross functional energy team;
- informed decision making;
- structured approach in line with the company's Right First Time methodology.

Since implementing IS393 the site has also become more strategically aware of the need to include energy efficiency and life cycle costing as key factors in equipment procurement, product development, and process/facility design. A strategic 'energy efficient design' methodology is now being applied to a new facility design under consideration.

With an ISO international energy management standard in the pipeline, Stephen Sisk is delighted with the achievement.

*"Schering-Plough Brinny is in an excellent position within the organisation to offer advice to other company plants embarking on system implementation."*

With this in mind, Brinny is leading the way and is already liaising with corporate management to produce international guidance on how to incorporate energy issues into new projects and apply project lifecycle analysis.