



power of one at work  
energy efficiency for Ireland

# Energy in Business

EXPERIENCE ■ KEY ISSUES ■ BEST PRACTICE





# foreword

The widespread adoption of more energy efficient behaviour has the potential to greatly reduce our dependence on imported fossil fuels, reduce our carbon emissions, lower our energy costs and lead to a more sustainable future. The Government has committed to achieving a 20% reduction in energy demand by 2020 through improved energy efficiency.

I believe that the business community can and should demonstrate a leadership role in more efficient use of energy. By doing so, they can also achieve significant savings on their energy costs, enhancing their competitiveness and that of the economy as a whole. Sustainable Energy Ireland's work with business has proven that the opportunities are there and businesses that act on energy efficiency are rewarded with real cost savings.

Now, SEI and Power of One - the Government's national awareness campaign for energy efficiency - are working together on a Power of One at Work campaign to encourage employees to extend the energy efficient behaviour they have adopted at home into the workplace. The campaign will also encourage business owners and managers to actively look at the scope for improving the energy efficiency of their business.

The success of Power of One lies in the fact that it involves everyone and highlights their role in the drive to become more energy efficient and more sustainable in our use of energy. This report demonstrates some of the options available to business and the savings that can be achieved.

I would urge all business owners and managers and their employees to study this report and think about how they can achieve the same results at work with less energy use.



A handwritten signature in white ink that reads "Eamon Ryan".

**Mr Eamon Ryan, T.D.**

Minister for Communications,  
Energy and Natural Resources

# there are good opportunities for energy efficiency gains in business

With increased costs and growing environmental concerns, energy efficiency has never been higher on the business agenda. Any business looking to its future competitiveness is looking at energy efficiency.

Sustainable Energy Ireland (SEI), the national energy authority, supports businesses interested in tackling their energy use through a range of advice and support programmes. Power of One at Work spreads the message – raising awareness and stimulating interest in energy efficiency among both employees and employers.

This report draws together the experiences of many businesses in their work to tackle energy costs. SEI's work with business has identified a number of key dimensions of energy efficiency.

These themes shape this report:

- *A structured response brings the greatest rewards*
- *People are key*
- *Many technology solutions exist*
- *There are opportunities in energy supply*
- *Designing for efficiency is essential*

Business is now recognising that there is a new energy future, making energy efficiency a core strategic imperative. Those ready to take action are seeing the benefits – real cost savings and real environmental gains.

## energy in business



*Irish business will spend close to €2 billion on energy in 2007.*

*Energy use in industry grew by 45% between 1990 and 2005. At the same time, economic output grew by 224%. Moves away from the more energy - intensive sectors are making industry as a whole more energy efficient.*

*SEI's new advisory programme for SMEs has given direct energy advice to almost 200 firms in its first six months of operation. Typically, an initial expert assessment identifies ready savings of more than 10% of current energy costs.*

*A recent study commissioned by SEI estimates that the commercial sector could save up to 25% of its current energy use through investment in economically viable efficiency opportunities.*

*Ireland is committed to saving at least 20% of energy use through efficiency gains by 2020. The economic benefits of these gains significantly outweigh the costs.*

*'In my work as an SEI advisor for small businesses, I find I never leave a company after a short visit without identifying immediate savings worth more than the cost of my visit.'*

*Liam Tolton, Consultant Energy Advisor*

# a structured response

## brings the greatest rewards

When a firm's energy actions are sporadic many good opportunities are never captured. It is now clear that those that take a fully structured, strategic approach will see the greatest benefits.

The starting point is commitment from the top, supported by a systematic approach to identifying and

implementing opportunities. Larger businesses are looking to the Irish Energy Management Standard, IS 393, which provides a formal, certified system. Smaller businesses are availing of SEI's Energy MAP, which provides a step-by-step system delivered online or through training courses.

- *During the process of implementing SEI's Energy MAP, the plastics manufacturer Tech Group Europe Dublin identified initial energy-saving opportunities of €300,000, and as a result revised downwards their expected 2007 energy bill by 17%.*
- *Energy MAP training with businesses in the Finnibair Business Park in Dundalk has helped the group of companies identify initial energy saving opportunities valued at over €500,000.*
- *Many leading companies are working towards IS 393, the Irish Energy Management Standard, which is proving very successful in delivering strong energy savings. Cost savings of €20 million have already been identified by the first group of participating firms.*

'We felt that a formal energy management system could enhance savings and encourage site-wide participation. Energy must be managed like any other resource, and ultimately the strategy must be embedded into the production process generally'

*Martin O'Connor, Utilities Engineer, Pfizer Ireland, Little Island*

## tesco ireland

*Tesco Ireland is a leading food retailer operating in 95 stores across the country.*

*It has achieved significant energy savings through taking an integrated and structured approach to energy management across the whole business.*

*For an investment of €1 million, energy savings of €1.7 million were achieved in 2006.*

Tesco Ireland is one of the leading commercial sector organisations in terms of its implementation of a structured energy management system that incorporates all aspects of its business. This approach ranges from how stores are built, through how they are managed, to the behaviour of all staff.

Energy-efficient design has been incorporated into Tesco's store design manual, ensuring that all new stores are built to the highest standards of efficiency and include consideration of renewable supply or other innovative elements. In terms of management, all store managers are allocated responsibility for energy efficiency



and are set targets for improvement. Energy monitoring is now built into normal management systems and routines.

Tesco has operated highly successful energy-awareness campaigns for all staff, including a special week-long campaign highlighting different energy and climate change topics each day. It has also built energy awareness into its staff induction training, so that all new staff hear about the issue when they join.

Building on its success to date, Tesco Ireland is now working towards certification to IS 393, Ireland's Energy Management Standard. Tesco Ireland's energy management system has resulted in a step change in efficiency thinking. *'The beauty of the system is that we have developed a standardised approach that brings all parts of the business up to the same high standard'* said, Tesco Ireland Energy Manager, Michael McNerney.

*'Our energy management system builds on current practices to incorporate energy thinking into everything we do. Energy efficiency is now built in.'*

*Michael McNerney, Energy Manager, Tesco Ireland*

# people are key

Even with advanced processes and equipment, it is people that ultimately determine how energy is used. Many companies are recognising that energy efficiency is about much more than technology.

Awareness campaigns, teams and training are all being used to encourage efficiency awareness and behaviour. Campaigns can link home behaviour to work behaviour,

as Power of One at Work is doing, capitalising on the growing interest in climate and energy issues among consumers and families.

Behaviour change often offers better opportunities for energy saving than other alternatives. More than that, no efficiency initiative will work without bringing people along. This is the message of Power of One at Work.

- *The healthcare company Merck Sharp & Dohme (Tipperary) has adopted a company-wide goal to reduce energy usage by 25% by the end of 2008. People are at the heart of the initiative with an awareness campaign that makes each individual aware of their impact on energy use. The campaign revolves around the 'Save-A-Watt-Wednesday' programme, when all employees are encouraged to reduce energy use in their working environment and also in their own homes.*
- *Wyeth Medica Ireland (Newbridge) initiated a factory-wide campaign to ensure all equipment which could be switched off remained off at weekends, bank holidays and over the Christmas break. Annual energy savings of €150,000 have been achieved.*
- *The Defence Forces are also proof that you must first win over 'hearts and minds' to change energy-using habits. Their Energy Awareness Campaign involves the Barrack Commander in each of the 34 barracks championing the energy-saving drive. An Annual Utilities Award rewards those barracks that achieve the most.*

'Our Green Team took some simple no-cost actions in various departments across the hotel which resulted in immediate reductions of energy of between 5 and 10%.'

*Lynda Foley, General Manager, Carlton Atlantic Coast Hotel, Westport*

## silver hill foods

*Silver Hill Foods is a family-owned duck production and processing company, employing 200 people, based in Emyvale, Co. Monaghan.*

*In 2004 it embarked on its Energy Management Programme, saving almost 10% of total annual energy costs.*



The success of energy management depends on the cooperation, acceptance and participation of everyone involved.

As Stuart Steele, MD of Silver Hill Foods, puts it, *'Everybody contributes at Silver Hill!'* Fundamental to Silver Hill's success is buy-in from staff throughout the organisation. This has generated a culture change where teamwork is key and everybody contributes to the goal of getting energy under control. Through the participation of staff, a series of no-cost measures were implemented which have yielded welcome savings. The 'Lunchtime initiative' saved the company a

total of €5,000 per annum simply by people switching off equipment at lunchtime and during breaks. Simple actions such as keeping doors closed between hot and cold areas and repairing all air and water leaks also yielded significant savings. The repair of leaks in the compressed air system resulted in the elimination of one compressor running constantly and led to an annual saving of €8,000.

*'At Silver Hill, people are the key. Without individual's commitment right throughout the organisation, our strategies and programmes would not be as successful.'*

*Stuart Steele, Managing Director, Silver Hill Foods*

# many technology solutions exist

Often, the bulk of a firm's energy usage comes from a relatively small number of users or pieces of equipment. For hotels it may be lighting, or for a small engineering firm it may be compressed air. By focusing on these key users and identifying priority actions, a company can demonstrate early success.

This concentrates time and funds where they can achieve the most. Early wins prove the business case for energy management, making it easier to embark on a more ambitious plan of action.

- *A visit from an SEI Energy Advisor helped vehicle movers Green Tiger Express identify a potential 40% saving in diesel usage on their transporters by eliminating engine idling during loading and unloading.*
- *Simply by changing bedroom and lobby lights to compact fluorescent bulbs, the Downhill Inn in Ballina, Co. Mayo is saving over €2,000 per annum.*
- *Tralee based Lee Strand Co-Operative Creamery cut a third off its energy used in processing each gallon of milk through a combination of measures including a variable speed compressor, maximising the use of daylight, low energy lamps and cold room door alarms. The initiative continues to produce €30,000 of savings every year.*

'As part of our focus on competitiveness, Glanbia has an ongoing commitment to adopting new, more stringent approaches to managing energy consumption and energy efficiency.'

*Jim Bergin CEO, Glanbia Ingredients Ireland*

## shamrock foods

*Shamrock Foods is a leading food company and part of Origin Enterprises Plc, a subsidiary of the IAWS Group.*

*New lighting equipment has cut the company's energy bill for lighting by over 70%.*



Shamrock Foods embarked on a project to reduce lighting energy use in its Dublin distribution facility. Management knew that their room for manoeuvre in negotiating impending energy price increases was limited, and with lighting accounting for 60% of overall electrical energy consumption, it was a key user to target.

The results could hardly have been better – a massive 70% cut in lighting energy use. Operations Director, Michael Broderick, describes the outcome as *'an almost perfect solution ... improved lighting levels at a third of the cost, with maintenance, temperature - control savings and security enhancement to boot.'*

A well-planned and executed project was the key to such dramatic savings – delivered under strict health and safety conditions in a busy depot. The solution was to replace 700 inefficient high-bay metal halide lights with half the number of modern efficient fluorescent lights (each consuming half the energy), all fitted with movement sensors.

Spin-off benefits included a cooler building, as the old lighting generated significant heat, and maintenance savings because of the longer life of the new lights. As lighting levels also improved, for a fraction of the cost, there was satisfaction all round from management and staff in the depot.

*'In our business environment we are forced to continuously challenge our supply chain costs. This relatively simple project delivered many benefits and will now be replicated in other companies in the group, throughout Ireland, the UK and internationally.'*

*Michael Broderick, Operations Director, Shamrock Foods*

# there are opportunities in energy supply

Renewable energy is now more cost-effective than ever, fuelling a boom in businesses installing alternative energy systems. These leaner and cleaner technologies now provide proven solutions to energy supply in business.

From energy efficient combined heat and power (CHP) technology, through to wood fuel bio-energy for heating, companies are realising that alternative energy is a smart business decision, with the added benefits of boosting corporate environmental performance and security of supply.

- *Mid Cork Pallets & Packaging, the largest manufacturer of wooden pallets in Ireland and the UK, has seen the monthly oil bill for its wood-drying kilns almost wiped out after switching to a new renewable energy boiler that uses the factory's wood waste as fuel. Annual savings are almost €30,000.*
- *The solution to A&L Goodbody Solicitors' energy requirements for its offices in the IFSC came in the form of tri-generation combined heat and power (CHP) technology. The supplier, CESenergy, was responsible for funding, developing and operating the CHP plant which generates on-site heat, cooling and electricity with estimated savings to A&L Goodbody of over €50,000 a year.*
- *Castlecool, a refrigerated warehousing and distribution firm, has managed its electricity demand to minimise usage during periods of peak demand and secured significant savings from the incentive schemes the Winter Demand Reduction Initiative and the PowerSave Initiative.*

'Following a review of energy costs at St Dymphna's Hospital in Carlow, we decided to install a CHP generator. This is saving €64,000 and 400 tonnes of CO<sub>2</sub> annually.'

*Donal Deering, Project Manager, Health Service Executive*

## bewleys hotel, dublin airport

*Bewleys Hotels is a family-owned group with four hotels in Dublin and two in the UK – each built to a four-star specification.*

*At its Dublin Airport hotel, Bewleys installed solar collectors for water heating, saving around €15,000 and 46 tonnes of CO<sub>2</sub> emissions a year.*



On-site renewable energy technology can reduce costs, enhance environmental impact, and improve security of supply.

Heating water can account for 50% of a hotel's total energy costs, so any system that can reduce this bill permanently must be worth investigating. That was the thinking at Bewleys Hotels, when it was building its hotel at Dublin Airport.

The design solution judged most cost-effective was the installation of solar collectors, which use the sun's energy to pre-heat water both for direct use and central heating. And yes, solar collectors

still work on an overcast day. Typical installations in Ireland save between 30 and 60% of water-heating costs, usually having a payback period of 6–10 years.

Bewleys Dublin Airport Hotel has 56 solar collectors on its roof, feeding two 5,000 litre storage cylinders. The system cost €210,000 and is saving about €15,000 and 46 tonnes of CO<sub>2</sub> emissions a year.

*'The system supplying green heat to the hotel is completely automated,' says Clío O'Gara, Brand Manager at Bewleys Hotels. 'It is a visible demonstration of our commitment to the environment.'*

*'The system is supplying a third of our hot water needs for free and guests value the fact that they are staying in an environmentally conscious hotel.'*

*Clío O'Gara, Brand Manager, Bewleys Hotels*

# designing for efficiency is essential

The greatest savings are made when energy efficiency is built in from the start. Whether it's a product, process or building design, the best opportunities are those seized at the outset, before work has even begun.

This should apply to all design decisions and equipment purchases. No amount of retrofitting can catch all the opportunities available at the design stage.

- ❑ *Carbery Milk Products carried out a major redesign project at its food-processing plant in Cork, recovering and using waste heat and rationalising its heat requirements. For an investment of just €1.5 million, savings of €1.7 million will be achieved every year.*
- ❑ *The Energy Team at the IBM Dublin Technology Campus challenged that normal practice of humidity control for certain high-tech production processes. Changing the process allowed them to avail of 'free-cooling' when external temperatures are lower, and reduce the demand for chilled water. Along with other projects this cut electricity consumption by more than 12%.*
- ❑ *SEI is currently working with several manufacturing firms on energy-efficient process design. In one case, incorporation of energy-efficient solutions into a new plant expansion design process has identified energy-saving potential of over 50% through measures that will pay for themselves literally overnight.*

'Our work on energy efficiency design is showing that there is huge long term potential when business prioritises energy efficiency from the start.'

*Brian Motherway, Head of Industry, SEI*

## musgrave group



*Cork-based Musgrave Group is a wholesale and retail distribution business serving 3,000 retail partners in Ireland, the UK and Spain.*

*Its new sustainable head office building has delivered operating cost savings of around 40% a year.*

Throwing out a conventional office proposal and committing to an energy efficiency-led design approach allowed retail group Musgrave to bring energy costs down by almost 40% at its new Group Head Office in Cork.

Not only is the 2000m<sup>2</sup> building very energy efficient, it features solar-thermal water heating and a geothermal heating and cooling system that prevents the need for air conditioning. Instead, the primary energy source for space heating is the renewable thermal energy of ground water on site.

These renewable energy systems proved to be a winning combination for the Musgrave Group, which collected SEI's Renewable Energy Project Award for 2006.

Other key features of the office building:

- Increased insulation of exterior cladding and high-specification glazing
- Intelligent lighting, including occupancy and daylight level sensors
- An energy management system to optimise energy use
- Alignment of the building to make the most of shelter from prevailing winds
- Central atrium and internal layout that maximise ambient daylight

Musgrave had corporate environmental and energy commitments in place prior to this project, and decided to bring them to bear at an early stage of design work. Through iterative re-working of the original proposal, the total energy load was reduced by 75%, with CO<sub>2</sub> emissions savings of 65%.

*'As our head office, the building should articulate our values and promote sustainability by example.'*

*John Curran, Group Environment Executive, Musgrave Group*

# sustainable energy ireland

## programmes for business

### **Taking Action**

From the smallest to the largest, savings are available to any business that tackles its energy use. Any response should start with a look at current energy use - where is it being used and why. Action should start in the place where most energy is being used and where most savings are to be found.

SEI offers supports to all kinds of business interested in tackling energy costs. From free advice to advanced training, from where to start looking to how to reach the highest standard of efficiency.

For information on any aspect of SEI's services for business, contact the Industry team at:

T: 01-8082087

E: [business@sei.ie](mailto:business@sei.ie)

[www.sei.ie/business](http://www.sei.ie/business)

Power of One at Work offers tips for employees and employers, as well as awareness materials to download and use in your workplace. Visit

[www.powerofoneatwork.ie](http://www.powerofoneatwork.ie)



## Energy MAP

Energy MAP (Energy Management Action Programme) is a comprehensive yet practical approach to energy management.

It offers a step by step structure that is easy to follow and implement, as well as specific tips on a range of energy technologies and ideas. Guidance and tips are available for all businesses, regardless of size or energy management experience.

Advice on good energy management for all types of business is available on the Energy MAP website, [www.sei.ie/energymap](http://www.sei.ie/energymap)

## Programmes for Small Business

### *Energy Assessments*

SEI offers firms free assessments to analyse current energy use and identify immediate opportunities for savings. Advice on appropriate monitoring and management is also provided.

Firms register with SEI and are matched with one of our energy experts, who will contact them and talk through their issues first by phone and then, if appropriate, on-site, conducting an assessment of savings opportunities.

The expert will recommend the best actions for the firm and maintain contact over time to encourage the firm to act on these recommendations.

### *Energy Management Training*

SEI runs a range of flexible training courses (half-day, one-day or three-day) offering an introduction to energy management. Content is tailored to each audience's needs and many courses include on-site assessments for participating firms.





### **Sustainable Energy Awards**

The Sustainable Energy Awards encourage, recognise and reward excellence in energy management in the industrial, commercial and public sectors in Ireland. The awards focus on individuals, groups and organisations who demonstrate a strong commitment to including energy management as part of their overall management structure.

### **Programmes for Large Energy Users**

#### ***Energy Agreements Programme***

SEI's Energy Agreements programme provides support to firms to apply a structured approach to reducing costs through the Irish Energy Management Standard, IS 393.

IS 393 structures energy management in a firm to deliver a strong system that can deliver significant savings.

#### ***Large Industry Energy Network***

The LIEN is a networking and information programme for large energy using companies interested in cutting energy costs. Currently there are over 80 members comprising many of Ireland's largest industrial companies and energy users, and together accounting for over half of all energy spend in Irish industry.





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