NDP
National Development Plan 2007 - 2013

epa
Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Cleaner Greener Production Programme (CGPP)
Business Case Studies 2008-2012

Better Business in a Better Ireland

Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

epa BeGreen

CGPP
Cleaner Greener Production Programme

Environmental Protection Agency

The Environmental Protection Agency (EPA) is a statutory body responsible for protecting the environment in Ireland. We regulate and police activities that might otherwise cause pollution. We ensure there is solid information on environmental trends so that necessary actions are taken. Our priorities are protecting the Irish environment and ensuring that development is sustainable.

The EPA is an independent public body established in July 1993 under the Environmental Protection Agency Act, 1992. Its sponsor in Government is the Department of the Environment, Community and Local Government.

OUR RESPONSIBILITIES

LICENSING

We license the following to ensure that their emissions do not endanger human health or harm the environment:

- waste facilities (e.g., landfills, incinerators, waste transfer stations);
- large scale industrial activities (e.g., pharmaceutical manufacturing, cement manufacturing, power plants);
- intensive agriculture;
- the contained use and controlled release of Genetically Modified Organisms (GMOs);
- large petrol storage facilities;
- waste water discharges.

NATIONAL ENVIRONMENTAL ENFORCEMENT

- Conducting over 2,000 audits and inspections of EPA licensed facilities every year.
- Overseeing local authorities' environmental protection responsibilities in the areas of – air, noise, waste, waste-water and water quality.
- Working with local authorities and the Gardaí to stamp out illegal waste activity by co-ordinating a national enforcement network, targeting offenders, conducting investigations and overseeing remediation.
- Prosecuting those who flout environmental law and damage the environment as a result of their actions.

MONITORING, ANALYSING AND REPORTING ON THE ENVIRONMENT

- Monitoring air quality and the quality of rivers, lakes, tidal waters and ground waters; measuring water levels and river flows.
- Independent reporting to inform decision making by national and local government.

REGULATING IRELAND'S GREENHOUSE GAS EMISSIONS

- Quantifying Ireland's emissions of greenhouse gases in the context of our Kyoto commitments.
- Implementing the Emissions Trading Directive, involving over 100 companies who are major generators of carbon dioxide in Ireland.

ENVIRONMENTAL RESEARCH AND DEVELOPMENT

- Co-ordinating research on environmental issues (including air and water quality, climate change, biodiversity, environmental technologies).

STRATEGIC ENVIRONMENTAL ASSESSMENT

- Assessing the impact of plans and programmes on the Irish environment (such as waste management and development plans).

ENVIRONMENTAL PLANNING, EDUCATION AND GUIDANCE

- Providing guidance to the public and to industry on various environmental topics (including licence applications, waste prevention and environmental regulations).
- Generating greater environmental awareness (through environmental television programmes and primary and secondary schools' resource packs).

PROACTIVE WASTE MANAGEMENT

- Promoting waste prevention and minimisation projects through the co-ordination of the National Waste Prevention Programme, including input into the implementation of Producer Responsibility Initiatives.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE) and Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

MANAGEMENT AND STRUCTURE OF THE EPA

The organisation is managed by a full time Board, consisting of a Director General and four Directors.

The work of the EPA is carried out across four offices:

- Office of Climate, Licensing and Resource Use
- Office of Environmental Enforcement
- Office of Environmental Assessment
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet several times a year to discuss issues of concern and offer advice to the Board.

National Development Plan 2007 - 2013

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Cleaner Greener Production Programme (CGPP)
Business Case Studies 2008-2012

Better Business in a Better Ireland

EPA Environmental Research Programme
2007–2013

ENVIRONMENTAL PROTECTION AGENCY

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Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

BeGreen

Cleaner Greener Production Programme

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The personnel involved in the production and preparation of this report were Lisa Sheils, Sandra Kavanagh and Shane Colgan (EPA).

Cleaner Production

The Cleaner Production Section of the EPA STRIVE Programme addresses the need for research in Ireland to inform policymakers and other stakeholders on a range of questions in this area. The reports in this series are intended as contributions to the necessary debate on cleaner production and the environment.

Where can I get further Information...

EPA Cleaner Greener Production Programme:	*www.epa.ie/researchandeducation/research/cgpp/* *www.cleanerproduction.ie*
EPA BeGreen Programme:	*www.epa.ie/whatwedo/resource/begreen/*
EPA National Waste Prevention Programme:	*www.nwpp.ie*
Green Business:	*www.greenbusiness.ie*

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Foreword

The quality of Ireland's environment is centre to our economic recovery, to job creation and the health and well-being of the Irish people. On the economic and jobs front, environmental quality underpins key elements of our national recovery strategy. Good environmental quality is central to our reputation and growth potential in sectors such as food, drink and tourism.

There is growing demand both nationally and internationally, for environmentally sound products and services, with increased pressure from green consumers, legislative requirements, producer responsibility schemes and through stricter supply chain requirements from clients.

Irish organisations and companies are leading the way in environmental responsibility, showing their commitment by participating in programmes such as the EPA's Cleaner Greener Production (CGPP) & BeGreen programmes. Through these programmes, the EPA assists Irish enterprises and organisations to improve their environmental performance, resource efficiency and eco-innovation.

The CGPP is a competitive and successful programme and was highlighted as an Exemplar Programme by the European Commission in a review of Eco-Innovation. Alongside other State agencies, such as Enterprise Ireland, SEAI and IDA etc. the EPA continues to encourage the business sector to move towards cleaner greener production.

This report provides an overview of innovative and cost effective projects carried out across a range of Irish business sectors under the EPA's CGPP. I hope that other businesses will learn from these success stories and work towards the CGPP's overall objective: Better Business in a Better Ireland.

Laura Burke
Director General

Contents

Introduction

Europe 2020 is the EU's growth strategy for the coming decade, pushing the EU to become a smart, sustainable and inclusive economy. Under the Europe 2020 strategy the flagship initiative for a resource-efficient Europe points the way towards sustainable growth and supports a shift towards a resource-efficient, low-carbon economy. Sustainable consumption can transform environmental challenges into economic opportunities.

Ireland has an enviable track record in sustainable consumption and resource efficiency. In 2001, the Environmental Protection Agency (EPA) launched the Cleaner Greener Production Programme (CGPP) as a grant scheme to encourage Irish companies and organisations to implement cleaner, greener work practices. The CGPP is a competitive and successful programme and was highlighted as an Exemplar Programme in a European Commission review of Eco-Innovation.

The philosophy of the CGPP is that prevention is better than cure. The programme challenges organisations to produce goods and provide services in a more environmentally friendly way by using cleaner production methods to prevent environmental impact – rather than simply relying on end-of-pipe treatment. The objective is to achieve a balance between economic activity and environmental protection. Approximately 100 businesses, of varied sizes across a wide range of sectors, have benefitted from the CGPP to date. Since 2011, the CGPP has been integrated into the EPA's BeGreen initiative.

This report summarises the key findings from the CGPP over the last four years (2008-2012), presenting case studies that reiterate the practical outcomes of each project. The report highlights the win-win outcomes for Irish-based business and the environment, and shows that environmental improvements can form the basis for enhanced competitiveness.

Cleaner Production & Resource Efficiency – what is it all about?

Cleaner Production is the application of integrated preventive environmental strategies to processes, products and services to increase overall efficiency and reduce risks to humans and the environment. Using resources more efficiently has clear environmental and economic benefits for companies and organisations: it improves productivity, reduces costs and enhances competitiveness.

Key pillars in Cleaner Production are:

- **Production processes:** conserving raw materials and energy, eliminating toxic raw materials and reducing the quantity and toxicity of all emissions and wastes.
- **Services:** encouraging and supporting the development of higher environmental performance by incorporating environmental concerns into the provision of services in sectors including financial, transport, retail, education etc.

- **Products:** reducing negative impacts along the life cycle of a product, from raw materials extraction to its ultimate disposal.
- **Eco-Design:** developing new products with reduced environmental impact on a life cycle basis. Eco-Design is also intended to embrace such concepts as improved recyclability, ease of repair and re-use, and improved durability.

An important and crucial element to complement the above areas is ensuring that **people** are at the core of the cleaner production and resource efficiency initiatives. New attitudes, better environmental management and evaluating available technology options are all necessary requirements, to keep projects on-track and achieve vital savings. Training, raising awareness and participation of staff are 'musts' for any project to be successful.

The philosophy behind implementing Cleaner Production is to take good environmental practice to the stage where it is an inherent part of any business operation. Figure 1 summarises the benefits of CGPP participation, which is demonstrated in the examples reported and the individual detailed case studies.

Figure 1: *Benefits arising from CGPP participation*

Key Findings (2008-2012)

Between 2008 and 2012, 24 different projects were funded under the CGPP, across sectors such as food, IT, services and manufacturing. In total more than 50 companies and organisations were involved in these projects. When taking into consideration client and franchise roll-outs of the projects, these projects are now being implemented in almost 1,600 sites across Ireland.

The EPA committed approximately €2.2m in a once-off grant aid to the projects. In addition, the participating organisations committed their own funds towards the projects, this 'buy-in' demonstrating the commitment and vision of those involved. Thus, total investment in the projects amounted to €4.5m.

From this investment, the projects have delivered **annual savings** of approximately €2.9m over the duration. With a projected continuing benefit, and non-monetary gains such as improved corporate social responsibility and environmental credentials, these figures demonstrate the potential for impressive returns from this type of investment.

Key findings: Headline improvements

For the four year period under review, significant improvements (both environmental and economic) have been made – as summarised below:

Total Impact of CGPP projects funded between 2008 and 2012

Waste reduction in input & output streams (tonnes per annum)	4,169
Energy (kWh per annum)	15,038,754
Water (m^3 per annum)	49,414
Total Cost savings per annum	**€2,894,210**

(Please note the figures are actual savings and do not reflect the estimated recoverable savings in water of 13 million m^3/annum or of CO_2 savings of 40,000 tonnes per annum recorded in the FDT projects – see page 24.)

Putting some of these savings into context, we can see how these savings are more tangible on a day to day basis.

Energy Saved:

- The 24 funded projects returned a saving of: 15,038,754 kWh p.a.
- Average household consumption: 5,300 kWh p.a.
- Participating in CGPP resulted in savings equivalent to displacing 2,838 homes annually

Packaging Savings: Cardboard

- The 24 funded projects saved 1,326 tonnes of cardboard p.a.
- 1 tonne of cardboard is produced by felling 17 trees
- By participating in CGPP, the funded organisations prevented 18,500 mature trees being felled for packaging
- Additionally, as it takes 7,000 litres of water to produce a tonne of cardboard, 9,940m³ of water were also saved per annum.

Packaging Savings: Plastic

- Combined saving of 165 tonnes of plastic are made annually
- Each tonne of plastic is the equivalent of 4.2t CO_2
- Saving 693t CO_2 in total
- A medium Irish car produces 0.155 kg CO_2/km
- Participating in CGPP resulted in savings equivalent to taking 260 cars off the road for a year.

Key findings: New & Redesigned Products

In total, the programme resulted in 11 new and redesigned products – a sample of these eco-innovations is outlined below:

Larkin's Engineering	By applying the principles of eco-design and waste minimisation to the 120 litre jumbo bin, Larkin Engineering reduced resources and materials consumed per bin by 38%.
Dawn Meats	The application of eco-design principles to product packaging and implementation of reusable returnable packaging, there was a reduction of 166t (or 10%) of cardboard usage.
JFC	The equivalent of 26% less plastic is used in the new fast fill water trough for livestock, without compromising quantity or quality. Plastic clips have been designed into the new product making it 100% recyclable.
Tool and Plastic Ltd	Waste plastic from an existing manufacturing line is now converted into two new products.
Micropro Computers	The iameco touchscreen computer was designed and manufactured to achieve previously unattainable standards of energy efficiency, reusability and recyclability – demonstrating how eco-design can be practically and effectively applied to the development of an integrated desktop computer system.
ChipSensors (trading as Silicon Laboratories)	ChipSensors developed a prototype CO_2 sensor based on low-cost, metal oxide gas sensitive materials. The resulting state-of-the-art sensor is a low power, low cost product to meet mass market demand.
Green Isle	Redesigning the packaging for Goodfellas pizza boxes using eco-design principles resulted in major savings – cardboard savings of 460t p.a., 100% recycled board now used; shrink wrap saving of 73t p.a. (or 290t CO_2).

Key findings: New & Potential Markets sourced

Some participants have already started manufacturing in Ireland and elsewhere; while others have sourced new and potential new markets for their products.

Cuthberts Bakery	Two new products were developed and new markets have evolved for these new goods.
Crumb Rubber Ltd	Optimising the removal of steel and fibre contamination from rubber dust enabled the company to market the material – heretofore used as a filler – as a new high value product. A number of potential high value domestic and export markets have been identified for this very fine crumb rubber powder.

Key findings: Reductions in harmful materials and emissions

Many of the projects looked at their production process and aimed at reducing and eliminating the quantity and toxicity of their emissions and wastes.

Honeywell	100% reduction in VOC process emissions (achieved by removing the core in drying cycle).
Galco	The reduction in unwanted by-products in the flux bath is expected to reduce zinc consumption by approximately 63t p.a. Costs associated with exporting 130t of spent acid from the Dublin site will be eliminated.
Tech Group Europe	Dry-ice cleaning of tools reduced hazardous waste from aerosols by 70%.

Key findings: National & International Recognition

'Green Credentials' is fast becoming a valuable marketing tool for companies on a global scale. Achieving an independent award, or recognised standard, is considered the best way of proving these credentials.

Within the programme, 2 international and 6 national prizes were awarded to various participating organisations for their exemplar projects. Many others were shortlisted in awards such as IBEC Environmental Award, Green Awards and Small Firms Awards (SFA), for eco-design and environmental management.

Micropro Computers	International	The iameco touchscreen computer is the world's first desktop computer to secure the EU's coveted EcoFlower label for its exceptional standards of environmental sustainability in manufacture and use. iameco also was commended in the IBEC 2012 Product Awards.
Tech Group Europe	International	Environmental improvements introduced as a result of the project, combined with other plant wide achievements, helped Tech Group Europe win the Presidential Award for 2010 for 'Best Overall Performance' from their corporate parent West Pharmaceuticals.
Noonan	National	Chambers Ireland Environmental Corporate Social Responsibility Award for 2010.
***Cork Institute of Technology (CIT)**	National	Green Hospitality Awards – The College Canteen became the first third-level canteen in Ireland to receive the Green Hospitality Award.
	National	Green Hospitality Awards – the Department of Tourism & Hospitality at CIT received the Gold level award.
Larkin's Engineering	National	Larkin Engineering received the national runner up award for the 'How Green Is your Business Competition' run by Dublin Chamber of Commerce in 2011.
	National	Larkins also received the IBEC new Product Award in 2012.
Green Isle	National	Green Isle was named the Winner of Repak Best Packaging Prevention Initiative 2009.

** CIT is shortlisted for the 2012 Green Awards*

Key findings: Roll-out of successful elements to other sites

Several projects were undertaken by 'umbrella' organisations or, where the participating company represented a multi-branch organisation. Many projects were trialled in a small number of pilot sites within the company and when deemed successful started to roll out to other sites.

The CGPP proves that initiatives undertaken at one location can be successfully transferred to sister sites and to other organisations, as shown below:

Supermacs	The CGPP project in Supermacs looked at investigating environmental savings, with trials in 4 restaurants initially. Following this trial, successful project elements were rolled out to company restaurants and will be adopted across all 100 restaurants.
BIM	BIM introduced a pilot programme 'Green Seafood Business Programme' to 7 seafood companies looking at reducing environmental inputs and making savings. It is hoped that based on this study BIM can roll out the programme throughout the sector with 130 seafood processing establishments in Ireland.
SPecoServices Ltd	Under CGPP SPeco Services worked with a network of 12 companies to improve their environmental performance. The team held a number of workshops on energy and waste minimisation, overall equipment effectiveness and eco design principles so that all the participating companies could implement these initiatives into their own work environment.
FDT Consulting	Engaged with 6 different companies within the manufacturing sector, assessing the recovery & reuse of water and carbon dioxide from industrial waste streams.
Cork Institute of Technology (CIT)	CIT produced a Step by Step Guide on How to Green Your Campus or Workplace – this 'template' can be used in any organisation small or large.

Key findings: The importance of feasibility studies

Changes in processing, in technologies and production are challenging and may require very substantial capital investment, therefore, establishing the feasibility of such investments is paramount for any project. Many of the projects undertook 'pilot studies' or feasibility studies. Based on the outcomes from some of these studies, investment was forthcoming to expand or and others not. The important point to highlight here is that by undertaking such studies in the first instance, can prove invaluable to a company, on whether investment should be made that would result in major environmental & economic savings. The examples below reflect what many of the projects highlighted – **If you don't test it you won't know**.

Connacht Gold	The fuel substitution feasibility study explored three oil substitution options, namely tallow, wood chip and wood pellet manufacture. Tallow and wood pellet were deemed not feasible due to cost, capital investment requirements and seasonal demand. The wood chip option is currently being reviewed and assessed by the Board.
Honeywell	The project itself was successful but the new concept proved uneconomical at present to use in high volume production. The development time required for a new product can be longer than anticipated when development is happening in a continuous production environment, at present.
Organic Lens Manufacturing (OLM)/ Essidev	The membrane technology trial successfully recycled the process wastewater to the desired water quality standard, but due to challenges and costs associated with recycling efficiencies and treatment of wastewater concentrate arising from the recycling process, this strand of the project did not proceed any further.

The People Factor

The CGPP programme has consistently found that a critical part to a successful project is having a top management champion, working with a dedicated team, to drive the initiative.

People are at the core of the cleaner production and resource efficiency initiatives. Training, raising awareness and staff participation are 'musts' for any project to be successful. Between 2008-2012 approximately 8000 people were involved in cleaner production and environmental awareness raising training, within the organisations and various company client bases.

There was specific training undertaken in eco-driving lessons, eco-design, lean manufacturing, water, energy and waste management.

Networking and Sharing Experiences

In 2010, the participants from Phase 4 (CGPP), came together in Tullamore to a network workshop. The goal of the workshop was to share experience, on-going research and ideas on new cleaner greener business practices which reduce costs, protect the environment and improve bottom lines. The event proved extremely beneficial to a number of the participants who learned from each other's projects. Linkages were established and further collaborations between a number of the companies were followed on.

Participants at the Cleaner production network event

What did the CGPP participants think of the programme and was it all worthwhile?

In 2010 a study was undertaken by the Centre for Innovation & Structural Change NUI Galway. This study collected data from participants that took part in the first four phases of CGPP – spanning 2001-2010. The survey collected information on the impact of programme participation, focusing on technological changes, economic impacts and environmental improvements as well as organisational changes in the areas of changes to skills, knowledge and attitudes. As part of the 2010 survey data was also collected on the longer term impact of CGPP participation, asking previous participants about ongoing achievements in technological change, environmental awareness, as well as economic and resource savings.

69 organisations were surveyed ranging from the very early participants in 2001 up to the 2008 awardees. Findings were impressive and overall, tells a good story of efficient & sustainable resource consumption and usage, delivering significant environmental improvements:

The key findings & outcomes of the organisations that responded were…

- 65% identified improved competitive advantage from their CGPP project.
- 43% have extended their CGPP project post-funding.
- 33% have gone on to develop further initiatives.
- 81% see changed managerial environmental awareness.
- 71% saying environmental issues continue to be influential.
- 77% of managers always/often consider the environment in taking major decisions.
- 88% said that the programme met their expectations.
- 90% would participate in CGPP again.

Key Outcomes:

- Significant environmental improvements.
- Economic advantages – cost savings and revenue growth.
- Reputational improvements – national & international eco-business awards.
- Four companies have patented new innovations.
- Creation of new expertise and broadening of the technology base within organisations. re general business efficiency skills that were acquired.

The full report entitled: ''EPA Cleaner Greener Production Programme: Experiences, Impacts and Outcomes for Participant Organisations", Dr Rachel Hilliard, Dr Suchitra Pal and Valerie Parker Centre for Innovation & Structural Change, NUI Galway Ireland, can be downloaded from the EPA website at: *www.epa.ie/researchandeducation/research/*.

Manufacturing												
Tech Group Europe	Tech Group Europe	•			•	•	•	•	•	•	•	•
Tool and Plastic Industries Ltd	Achieving a Zero-Landfill Waste Facility at Tool and Plastic Ltd.	•	•		•	•	•	•	•		•	
Larkin Engineering Limited	Applying Eco-Design and World Class Manufacturing at Larkin's Engineering.	•	•	•		•	•		•			•
Galco Steel Ltd.	Implementation of an Environmentally Efficient Continuous Flux Treatment System	•					•	•				
Honeywell Turbo Technologies Ireland	Coreless Block Mould – The development of process technology to remove polystyrene core from the manufacturing process			•		•	•	•				
Organic Lens Manufacturing (OLM)/ Essidev	Recycling of Process water with Heat Recovery		•				•		•			
JFC Manufacturing Co. Ltd.	Investigation into energy reduction and recovery at JFC	•		•	•	•	•		•	•	•	
FDT Consulting Engineers & Project Managers Ltd	Water Recovery Feasibility Study		•		•		•					
FDT Consulting Engineers & Project Managers Ltd	CO_2 Recovery from Exhaust Gas & Processes for Re-Use		•		•		•					
Tech Group Europe	Cleaner Greener Production at Tech Group Europe	•		•	•		•	•	•	•		•
Crumb Rubber Ireland Ltd.	Eco-efficiency & Upcycling in Crumb Rubber Manufacture				•		•		•			
Services												
Cork Institute of Technology	CIT's Sustainable Campus Programme (CSCP)	•	•	•	•		•		•	•	•	•
Noonan Services Group	Cleaner Greener Cleaning Services		•	•	•		•	•	•	•		•
SPeco Services Ltd	Cleaner Greener Efficient Production Network	•	•		•	•	•	•	•			
COPE Galway	Resource Minimisation at COPE Galway in the charity sector	•		•	•		•		•	•		

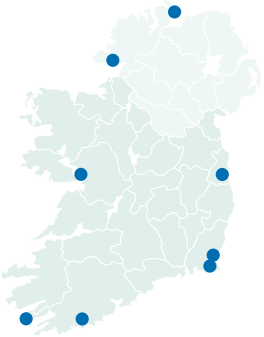
Table 1: *Index to the case studies – highlighted in their sectors, Food, Manufacturing, Information Technology and Services*

Organisation	Title	Waste	Water	Energy	GHG emissions	Eco-Design	Resource Efficiency	Packaging	Economic Savings	Staff Training	New CP activities	Reputation/Prizes
Food												
Rosderra Irish Meats Ltd	Project LYSIS	•		•			•			•		
Green Isle Foods Limited	Greening Green-Isle Manufacture and Delivery	•		•	•	•	•	•	•	•		•
Dawn Meats	Targeting water, energy and packaging – three environmental improvement projects at Dawn Meats.		•		•	•	•	•	•	•	•	
Connacht Gold Shannonside Facility	Waste reduction programme focused on process technologies at Shannonside	•	•	•	•		•		•	•	•	
Supermac's	Super-Sustainable: Biodegradable/compostable product packaging & overall improvement in environmental performance across all Supermac's	•	•	•	•		•	•	•	•	•	
Jack Cuthbert's Handmade Bread Ltd.	Logistics, Waste & Energy Optimisation Project	•	•	•	•		•		•	•	•	
Bord Iascaigh Mhara (BIM)	Green Seafood Business		•				•		•	•	•	
Information Technology												
ChipSensors Limited – trading as Silicon Laboratories	Low Cost, Battery-Powered, CO_2 and Toxic-Gas Detector System					•	•					•
Multimedia Computer Systems Ltd t/a MicroPro Computers	Iameco 2 – Low Carbon, Resource Efficiency and Long Life in PC Design	•			•	•	•					•

Food Sector

The Green Seafood Business Programme

Dun Laoghaire, Co. Dublin, Ireland – *www.bim.ie*



Bord Iascaigh Mhara (BIM) is the state agency with responsibility for the development of the seafood industry, including sea fishing, aquaculture and the seafood processing sector. The sector comprises 130 seafood processing establishments ranging from small artesian processors to large multi-million euro businesses, with a vast range of products.

In this project, BIM piloted an environmental improvement programme called the 'Green Seafood Business Programme' in seven seafood companies with the aim of reducing water and energy consumption. The programme involved environmental audits, installation of monitoring equipment and on-site awareness campaigns.

Key achievements:

- The pilot programme found that a company can expect to see a water consumption reduction in the order of 800m^3 to 6,400m^3 per year, making an annual savings of €1,000 to €14,500.
- The energy savings are in the thousands of euros in terms of improving energy management e.g. one participating company saved €1,000 a month on water charges simply by replacing a fault capacitor.
- Further work to expand this green programme is on-going with BIM members.

The key element to the project is being able to measure and hence monitor in order to in turn make savings in priority areas, such as water leakage and energy loss. BIM will be looking to further expand the programme in the future and sees the opportunity for the Irish Seafood Sector to promote this programme nationwide and to enhance the credentials of a **Clean Green and Sustainable sector**.

Waste Reduction Programme at Connacht Gold Dairy Ingredients (Shannonside)

Ballaghadereen,
Co. Roscommon, Ireland
www.connachtgold.ie

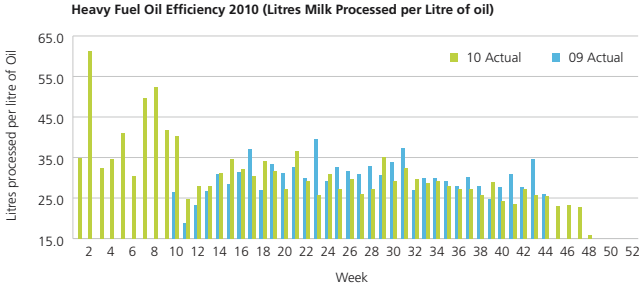
Connacht Gold Dairy Ingredients, part of the Connacht Gold Group, processes 167 million litres of milk annually at the modern and efficient dairy ingredients plant in Ballaghaderreen (also known as Shannonside). The extensive range of whole milk, skim milk and fat-filled milk powders produced is available in regular, instant, high-heat-heat-stable, fortified and coffee stable varieties.

The aim of the project was to determine the feasibility of a waste reduction programme, focusing on prevention opportunities arising from day-to-day milk processing activities. The project resulted in a feasibility study for oil substitution and accrued savings and environmental benefits in the areas of energy, water and oil consumption as well as a landfill waste reduction.

Key achievements:

- Reduction in heavy oil fuel use – 340,000 litres p.a. (savings of €196,000)
- Energy reduction of 1,059,400 kWh p.a. (savings of €118,652)
- Reusing 20,000m³ of hot water from evaporation condensate (savings of €21,000)
- €210,000 worth of milk powder product saved annually by eliminating product losses and improving efficiency
- Waste reduction of 259t in 2010 versus 2009.
- Total savings equate to 1,905t CO_2
- Major staff training and awareness campaigns.

Graph illustrating measuring & monitoring results of litres of milk processed per litre of oil consumed.



Logistics and energy optimisation for Jack Cuthbert's bakery

Jack Cuthbert's Bakery,
Midleton, Co Cork, Ireland

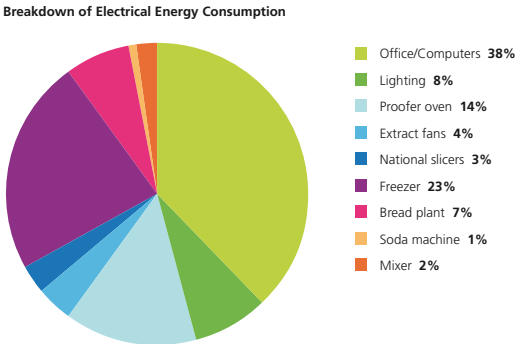
Jack Cuthbert's bakery has been baking many different types of handmade bread such as Artisanal breads, traditional Irish breads, French breads, Polish breads and health breads, for many years in Cork. The company currently employs 25 people at its base in Midleton, Co. Cork.

With the aim of making significant environmental savings the company focussed on energy reduction, waste minimisation, water conservation and logistics optimisation. Through the project, economic savings in excess of €47,000 were achieved.

Key achievements:

- Energy: 0.03kW of electricity saved per unit of bread produced, equating to 18.5% reduction in electricity consumption between 2010 and 2011.
- Logistics optimisation: optimisation resulted in saving of 13.48t CO_2 (or €41,800) p.a.
- Waste: 24t waste diverted from landfill p.a. (savings €3,800)
- New products: two new products developed, with new markets.
- Water: reduction of 433m³ of water per annum.
- Staff training & awareness: increased staff awareness and involvement in environmental improvements within the day to day operations of the company.

Graph illustrating the energy consumption in Cuthbert's Bakery



Targeting water, energy and packaging at Dawn Meats

Clare Road, Ballyhaunis,
Co. Mayo, Ireland
www.dawnmeats.com

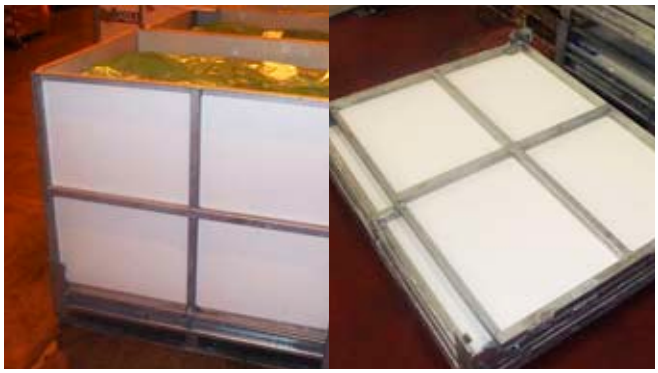
Dawn Meats, part of the Queally Group, is one of the largest suppliers of Irish and British beef, Irish and British pork, Irish and British lamb. The group processes in excess of 500,000 cattle and 750,000 lamb per year, from which it produces 200,000 tonnes of added value meat products.

Between 2008 and 2010, a cross-functional team at the Dawn Meats plant in Ballyhaunis, Co Mayo targeted water, energy and packaging savings.

Key achievements:

- Over 10,000 m^3 p.a. reduction in water consumption across the site (34% saving)
- €25,000 reduction in oil consumption, due to water reuse & conservation and refrigeration heat recovery
- A reduction of 166t (or 10%) of cardboard usage, by applying eco-design principles to product packaging and implementation of reusable returnable packaging
- Logistics – reduction of up to 85 truck journeys due to packaging redesign
- Staff were trained in eco-design techniques for packaging and water minimisation
- Packaging minimisation and energy saving initiatives have been rolled out to other company sites

The photographs below show new returnable packaging units in use – the first shows the packaging full of product and the second in its collapsed form ready for return to Dawn Meats for refill.



Greening Green-Isle Manufacture and Delivery

Green Isle Foods Ltd.
Naas, Co Kildare, Ireland

Green Isle Foods, employing over 1,100 in Ireland, produces a range of branded frozen pizzas at its factory in Naas, Co. Kildare. Green Isle is renowned for brand development and its Irish made 'Goodfellas' frozen pizza now commands 30% of all frozen pizza retail sales in the UK.

The project's aim of reducing packaging waste at its Naas branch – focused on raw material use and production processes.

Key achievements:

- Packaging reduction & eco-design: cardboard savings of 921t over 24 months; supply altered to 100% recycled cardboard; plastic shrink wrap saving of 73t p.a. (or 290t CO_2); 123 truck journeys no longer needed (or 49t CO_2)
- Bakery waste reduction: optimisation prevented over 1,350t of bakery waste (average kg loss reduced from 2,092kg per week to 319kg per week, or 84.7% improvement)
- Energy efficiency: 33% reduction per pizza manufactured
- Training was delivered to key staff on eco-design and environmental awareness.

Awards:

Green Isle was named the **Winner** of **Repak Best Packaging Prevention Initiative 2009**.

Project Lysis: Exploring the use of Proteolytic enzymes to reduce the weight of bone waste

Clara, Co Offaly, Ireland
www.rosderra.ie

Rosderra Irish Meats Group is a leading Irish food company, based in the Midlands accounting for approximately 50% of the Irish pigmeat industry. It is a major global supplier to the retail and food processing sector. The preparation of pork meat requires the carcasses to be deboned. The bones that are removed have meat attached and these are sent to the Clara plant to undergo another deboning operation which results in a waste stream called "bone cake". This waste is currently sent to rendering plants. Rosderra collective research into enzyme hydrolysis has opened up other ways to apply enzymes to the whole area of meat factory waste stream management.

Key Achievements:

- 30% of waste bone is turned into useful "protein rich" products and high quality fat.
- Reduction of skull bone waste, tonnage by 750 tonnes per annum.
- Energy Reduction: This was achieved with a heating process which uses approximately 17% less energy than conventional rendering.
- This CGPP project has linked directly with the Groups ethos of promoting a greener workplace with an emphasis on educating the employees in the achievement of greener processes and procedures.

Bone After Hydrolysis

Super-Sustainable at Supermac's

Ballybritt, Galway, Ireland
www.supermacs.ie

Supermac's is Ireland's largest and fastest-growing indigenous fast food group. From the first Supermac's restaurant in Ballinasloe in 1978, Supermac's now employs 2,500 people in over 100 branches.

The CGPP project in Supermac's investigated and piloted environmental savings in the areas of energy, water, waste and staff training in four restaurants initially. Following this trial, successful project elements continue to be rolled out and adopted across all 100 restaurants.

Key achievements:

- €99,000 p.a. saved, due to environmental improvements
- Reduction of 68t of plastic and cardboard packaging
- Reduction of 2,984kg of waste to landfill
- Displacement of 300 litres of chemical cleaning agents by using chemical-free alternatives
- Reduction of 50,000 litres of cooking oil p.a.
- 210,000 litres of cooking oil reused for bio-diesel
- Energy savings of 58,335kWh p.a.
- 23% saving on refrigeration load (22t CO_2)
- 4,700 m^3 of water saved p.a.
- 390 staff trained

Example of 'Environmental Facts' Tray Mat for Supermacs

Information Technology Sector

Low Cost, Battery Powered, CO_2 and Toxic Gas Detection System

ChipSensors Limited (now trading as Silicon Laboratories), Limerick, Ireland
www.silabs.com

ChipSensors – a division of US multinational Silicon Laboratories Inc. of Austin, Texas – develop novel sensor technologies for a wide range of target markets such as thermostats, automotive climate control and printers, among others.

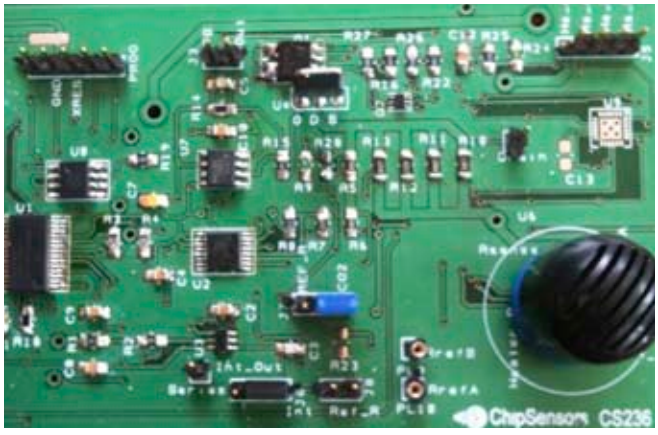
Historically, sensors have been manufactured using specialised materials and manufacturing processes that demand external support circuitry and post-assembly calibration. ChipSensors' proprietary technology enables the sensor to be integrated with and calibrated on a CMOS IC. These highly integrated devices provide a cost-effective solution to precision sensing for high-volume applications.

The aim of this project was the design and development of a CO_2 sensor system based on proprietary metal oxide materials.

This project has developed a prototype CO_2 sensor based on low-cost, metal oxide gas sensitive materials. By combining state of the art gas-sensitive metal-oxide materials with semiconductor manufacturing, ChipSensors has produced a low power, low cost sensor to meet this mass market demand.

Results show that the technology is very suitable to CO_2 sensing for indoor air quality, with further applications for direct gas sensing in combustion exhaust systems.

Generic Microcontroller PCB with CO_2 gas sensor



iameco – low carbon, resource efficiency and long life in PC design

MicroPro Computers Rathfarnham, Dublin, Ireland
www.iameco.ie

MicroPro was formed in 1991, inspired by a strong environmental ethos. MicroPro is based in Rathfarnham, Dublin and is a wholly Irish owned SME employing 24 staff, mainly qualified engineers.

The aim of the iameco project was to research, design and manufacture a prototype desktop computer – demonstrating how eco-design can be practically and effectively applied to the development of an integrated desktop computer system.

The result is the iameco touchscreen computer – designed and manufactured by MicroPro Computers in Ireland.

The iameco computer achieves previously unattainable standards of energy efficiency, reusability and recyclability on the market. It consumes one third of the power usage of other desktop computers – and incorporates the most environmentally benign components in a fully reusable and ultimately recyclable chassis and housing with a design life of up to 10 years. The iameco computer is an entirely new market offering and is manufactured in Ireland.

Awards:

This is the world's first desktop computer to secure the **EU's coveted EcoFlower label** for its exceptional standards of environmental sustainability in manufacture and use.

At the official launch of iameco 3 Paul Maher & Jose Ospina Micropro with Laura Burke DG EPA and President Micheal D. Higgins

Manufacturing Sector

Eco-efficiency & Upcycling in Crumb Rubber Manufacture

Crumb Rubber Ireland Ltd,
Dundalk, Co. Louth, Ireland
www.crumbrubber.ie

Crumb Rubber Ireland Ltd. is the only facility producing a full range of rubber granulate and matting products in Ireland. At the Dromiskin factory, mechanical processes transform used tyres into crumb rubber to produce eco-innovative products for many industrial sectors, including agriculture and construction.

Crumb Rubber Ireland Ltd. used CGPP to improve the environmental performance of their activities, focussing on process optimisation and energy in particular.

Key achievements:

- Improving the steel cleaning process: refining the operation to maximise recovery of 'clean' steel. Potential savings – combined with additional revenues – ca. €35,000 per month.
- Improving the quality of the crumb rubber fines: trials have been conducted to reduce dust contamination, with the potential for the material to be sold as a new high value product.
- Implementation of an energy and resource tracking programme: On-going monitoring continues on-site, with carbon footprint determined for 2010 and 2011
- Embedding of cleaner production ethos within the company

Recovered steel after processing.

Recycling of Process Water with Heat Recovery

Organic Lens Manufacturing (OLM) (Essidev S.A.),
Ennis, Co. Clare, Ireland
www.essilor.com

Organic Lens Manufacturing (OLM), a branch of Essilor International, is a leading manufacturer of plastic ophthalmic lenses for the European market. The company is strongly committed to the concept of sustainable development and is attempting through the CGPP to decouple business expansion from resource consumption. OLM currently employs 320 people over 3 shifts, 5 days per week.

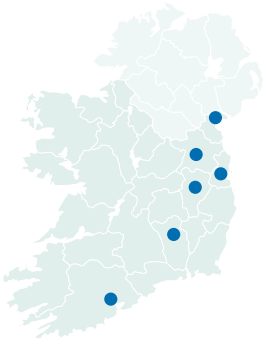
The main aim of the CGPP project was to carry out a process water recycling trial, using membrane technology, with the aim of significantly reducing water consumption. The technology successfully recycled the process wastewater to the desired water quality standard but – due to challenges associated with recycling efficiencies and treatment of wastewater concentrate arising from the recycling process – this strand project did not proceed any further.

The successful outcome of this project for OLM was the installation of an over ground rainwater harvesting system. Three 10,000 litre tanks were installed and are now used to feed 22 toilets within the facility. This will reduce consumption of municipal mains water by approximately 11%, with cost savings of €4,000 per annum

Rainwater harvesting installation at OLM

Recovery & Reuse of Water and Carbon Dioxide from Industrial Waste Streams

FDT Consulting Engineers & Project Managers Ltd, Churchtown, Dublin, Ireland
www.fdt.ie



FDT is a 100% Irish-owned, independent process engineering consultancy, based in Dublin, serving clients in Ireland, the UK, Europe and Africa. Formed in 1991, the company has a highly skilled team of engineering consultants with professional qualifications and strong technical experience that provide an in-depth knowledge of process, utilities & packaging plant. FDT serve a range of sectors, such as Brewing, Food and Dairy, Pharmaceutical, Healthcare and Chemical industries, with a variety of process engineering solutions and consulting services. The company has strong sustainability and resource efficiency capabilities which help to reduce our client's operating costs and meet their compliance obligations. Initially 2 projects were undertaken separately but as the projects progressed it was agreed with EPA to combine both. Hence in this project the feasibility of recovering water and carbon dioxide from industrial waste streams in Ireland was assessed.

Six facilities, from the brewing, dairy ingredients, liquid milk, snack foods and pharmaceutical industries, were examined and the potential for recovery and reuse of water and carbon dioxide was assessed. The companies involved Diageo in Kilkenny and Dundalk, Dairygold in Mitchelstown Cork, Glanbia in Ballitore, Kildare, Rottapharm Madaus, Mulhuddart and Largo Foods in Ashbourne, Meath. The results were then extrapolated across similar facilities in each industry to quantify the potential for recovering water and carbon dioxide in Irish industry as a whole.

Water: It was estimated that 34% of water supplied to IPPC licensed companies is recoverable from individual waste water streams. This equates to 13.9 million m^3/annum. If mains distribution losses are taken into account, which are approximately 44%, the gross savings to the water supply network could be as high as 20.1 million m^3/annum. Current water prices do not incentivise water recovery and, from the four facilities examined, four opportunities for waste water recovery using membrane filtration were identified as being financially viable.

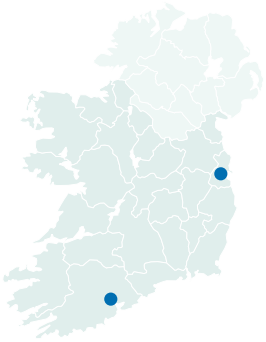
CO_2: CO_2 recovery opportunities were identified which could reduce CO_2 emissions from industry in Ireland by an estimated 3.2% but these opportunities are limited by the CO_2 sinks available. Identification of applications for recovered CO_2 will be important in making these projects feasible. One sink which has potential for many sites is the use of CO_2 for neutralisation of waste water effluent. Carbon credits can substantially improve feasibility of emissions reduction projects.

Permeate from Trials

Laboratory Test for Membrane Trials

Implementation of an Environmentally Efficient Continuous Flux Treatment System

Galco Steel Ltd.,
Walkinstown, Dublin,
Ireland
www.galco.ie



Galco Steel Ltd. is the largest hot dip galvaniser in Ireland with plants located in Dublin, Cork, Waterford, Derry and Tynagh (Galway). Galco Steel Ltd employs approximately 340 between the five sites, with the principle operation in Dublin employing 175 people. Galco also produce a range of access covers and drainage systems.

The aim of this project was to research and implement an environmentally efficient continuous flux treatment system.

Key achievements:

- Two treatment units were installed, one in each of the Dublin and Cork plants.
- The system chosen removes dissolved iron from the flux solution continuously – the system reduces the iron content with a resultant reduction of unwanted by-products and waste
- The system installed in Dublin also allows for the treatment of spent hydrochloric acid, further reducing the waste exported off site
- Zinc consumption is expected to reduce by 63t p.a.
- Annual net savings generated by the on-site treatment of flux amount to over €122,000 per annum.
- In addition to the above financial benefits, a noticeable improvement in product quality has also been realised.

The flux treatment unit installed in the Dublin plant

Coreless Blockmould Project

Honeywell Turbo Technologies,
Waterford, Ireland
www.honeywell.com

Honeywell Turbo Technologies, located on the IDA Industrial estate in Waterford City and with 450 employees, manufactures 9.5 million aluminium compressor wheel and superalloy turbine wheel units per year, for supply to Honeywell "Garrett" Turbo's worldwide facilities. In turn these are for use in turbochargers in the automotive industry.

The project aim was to design and develop a new plaster mould design for the manufacture of aluminium castings without the use of polystyrene component in the mould.

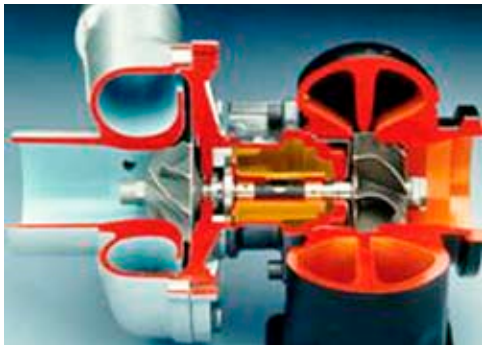
The elimination of this polystyrene component would lead to the following:

- 100% reduction in VOC process emissions
- 60% (or 8m kWh) annual compressed wheel gas savings
- 30% reduction in waste generation, achieved by 30% less plaster in the plaster block
- Sulphate reduction – achieved by less plaster usage
- Reduced water usage of 1000 litres/day, due to less water in block.

The economic benefits from savings could be in excess of €500,000 annum as volumes increase and this reduction along with other cost improvements can help secure compressor wheel manufacture in Ireland.

The project was successful but the new concept proved uneconomical to use in high volume production, at present. The work is still on going to develop a new concept.

Garrett Turbocharger



Investigation into energy reduction and recovery at JFC

JFC Manufacturing,
Tuam, Co. Galway, Ireland
www.jfc.ie

JFC manufacturing was set up in 1987 to supply specialised plastic products to the agricultural industry. The company has since grown to employ over 200 people, with 90 of those in the Tuam plant.

JFC Manufacturing has implemented a number of environmental initiatives as a result of participating in CGPP, focussing on energy, eco design and waste management. Total combined savings of €63,362 were made as a result.

Key achievements:

- 8% reduction in gas consumption by sealing oven doors.
- Compressed air audits achieved a saving of 14,815kWh (7t CO_2 or €2000 p.a.)
- Timers and switching off machines brought in savings of 6,035 kWh (3t CO_2 or €844 p.a.)
- Electricity per kg of pipe manufactured has reduced by 27%
- 73t of waste has been diverted away from landfill
- 26% less plastic used on the new fast fill water trough while maintaining same quantity
- End of life of the product has improved due to elimination of metal components.
- Plastic clips make the new product 100% recyclable
- Labels are now etched into the product
- Key JFC staff trained in environmental awareness

The new fast fill water trough

Applying Eco-Design and World Class Manufacturing

Larkin Engineering,
Tuam, Co. Galway, Ireland
www.larkin-eng.com

Larkin Engineering manufactures a range of products and are specialists in the design of litter bins, recycling units and street furniture. The plant in Tuam, Co Galway currently employs 25 people. The company is renowned for its products and is now the main supplier of street furniture both in Ireland and the UK.

Larkin Engineering have introduced a number of initiatives to become more environmentally, targeting eco-design, water minimisation and energy efficiency in particular. As a result of the project the company saved in excess of €30,000 in cost of labour, raw materials, and consumables.

Among many achievements, the manufacture of a new 120 Litre Jumbo bin using 38% less material is typical:

- Eco-design: 38% raw material saving; product take-back scheme initiated
- Energy: electricity reduced by 9,000 kWh per month
- Waste: 40% reduction in metal sent for recycling
- Water: rain water harvesting allowed the manufacturing to become self-sustainable

Awards:

Larkin Engineering received the national runner up award for the How Green Is your Business Competition run by Dublin Chamber of Commerce in September 2011.

Larkin also received the IBEC award for new 'Product Award in 2012'.

Noel Larkin, MD Larkin Engineering and Bobby Kerr 'Dragons Den' Judge.

Waste Minimisation at Tool and Plastic Ltd.

Longford, Ireland
www.toolandplastic.ie

Tool and Plastic Ltd. is a well-known name in contract injection moulding in Ireland. First established in 1968 in Longford Town, the company relocated to a purpose built facility with white room manufacturing, cleanroom, fully equipped quality, metrology and product testing laboratory in 2007. With over 70% of the company's customers in the medical/healthcare industry sectors, in excess of 35% of all product manufactured at the Irish facility is exported.

A review of energy, waste and water consumption identified a number of opportunities to implement environmental and economic cost savings initiatives.

Key achievements:

- Extensive staff training and equipment efficiency upgrades that achieved significant energy, CO_2 and cost savings
- Total of €56,500 saved in energy costs (or 185t CO_2)
- Reuse of plastic waste to manufacture two new products
- €55,400 saved by preventing packaging waste
- Packaging return schemes, plastic waste reuse and real time online production monitoring achieved significant waste reductions including, for example, 0.5t of paper saved p.a.
- 50% waste diverted from landfill
- Rainwater harvesting showed 200m^3 of water saved annually

The new returnable corri-board packaging

Cleaner Greener Production at Tech Group Europe

Tech Group Europe,
Mulhuddart, Dublin, Ireland
www.techgroup.com

Tech Group Europe is a manufacturer of choice for medical devices, drug delivery systems, pharmaceutical components and targeted value-add consumer products. The company employs 200 staff and has five clean rooms that run 24 hours a day, 360 days per year.

For this project, the team focussed on delivering environmental savings through initiatives in packaging, energy, eco-design, manufacturing and scrap reduction, making good use of the Lean Six Sigma programme.

Key achievements:

- Energy: savings of €108,000 p.a. by humidity control and process optimisation
- Efficient lighting: saved 58,384kWh – return on investment of 0.48 years
- Humidity control: electricity consumption reduced (saving €77,000 p.a.)
- Heat recovery: reduces the boiler load saving €20,000 p.a.
- Insulating the injection mould barrel: saved €20,000 p.a.
- Air handling saving €10,000 p.a. (110,000kWh or 49t CO_2)
- Packaging: 86 truck journeys eliminated by introducing returnable packaging
- Dry-ice cleaning of tools reduced hazardous waste from aerosols by 70%, saving €35,000
- Training: 80 staff on CGPP, with 30 receiving additional Lean Six Sigma skill. Eco-Design training provided for key engineers.

The Clean Room Operations in Tech Group Europe, Dublin

Service Sector

CIT's Sustainable Campus Programme

Cork Institute of Technology (CIT), Cork, Ireland
www.greencampuscit.ie

With over 12,000 registered students and 1,544 staff, Cork Institute of Technology (CIT) caters for both full and part-time study as well as many evening and weekend courses. For this project, CIT established a sustainable campus programme at its Bishopstown campus.

The success of the project led to the publication of a guide book **"How to Green Your Campus or Workplace – A Step by Step Guide"** which was disseminated widely downloadable at: *www.greencampuscit.ie* and *www.cleanerproduction.ie*.

Key achievements:

- Total combined economic savings of €472,382
- Water consumption decreased by almost 4%
- Solid waste reduced by 12%
- Installation of a digester
- CIT's gas bills reduced by €4624
- Campus BER rating improved by a full grade from a D1 to C1;
- CHP installed for the older campus building
- Installation of an Electrical Vehicle Point

Awards:

The College Canteen became the first third-level canteen in Ireland to receive the Green Hospitality Award and the Department of Tourism & Hospitality received the Gold Level award.

CIT receiving one of the Green Hospitality Awards

Resource Minimisation at COPE Galway in the charity sector

COPE Galway, Galway, Ireland
www.copegalway.ie

COPE Galway is a local Galway charity that provides services to those isolated in the community – including sustenance and social supports for older people, a refuge for women and children affected by domestic violence and accommodation for men and women experiencing homelessness.

The CGPP project at COPE Galway focused on reducing the overall energy and waste consumption of the charity's facilities through a programme of monitoring and measuring. In addition, an emphasis was also placed on increasing environmental awareness among staff.

Key achievements:

- Total reduction in oil and electricity per annum: 84,225 kWh (saving of €6581)
- Total saving of 30.5 tonnes of CO_2.
- 1,200kg of waste per annum diverted from landfill.
- Use of green chemical alternatives: Reduces toxic pollutants and waste from excess packaging.
- Eco labelled chemicals are on trial at three of the facilities. A smart dose system as seen below is been used. This will reduce transportation of chemicals and packaging of chemicals.
- 100 staff training on eco driving techniques and 60 on energy and waste minimisation.

The smart dose system that eliminates the need to gauge or guess dilutions therefore reduces waste

Noonan powers ahead with Cleaner Greener Business Approach'

Noonan, Swords,
Co. Dublin, Ireland

Noonan is the market-leading supplier of facility management services in Ireland and the UK – a reputation based on over two decades of consistent growth and the highest quality service. From its origins in contract cleaning, Noonan's 8000 staff now deliver a wide range of integrated facility services to over 1500 clients, among them many of the best-known names in the world of business.

Noonan used the two year CGPP project to evaluate consumption of water, electricity, energy, chemicals and waste associated with the provision of cleaning services.

Key achievements:

- Reducing transport emissions by 7%. Fleet emissions reduced by 82t CO_2 p.a.
- Savings of €20,000 in diesel across fleet annually following purchase of fuel efficient vehicles
- Electricity savings of 130,000kWh (or €13,000) p.a.
- Water savings of over 7000m³ (or €3,200) p.a.
- Cardboard and plastic packaging reductions of 88% and 97% respectively
- Training on CGPP and environmental awareness was delivered to over 7,000 staff

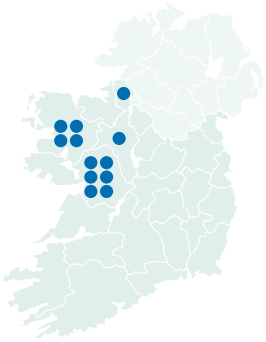
Awards:

The company won the Chambers Ireland **Environmental Corporate Social Responsibility Award** for 2010.

CGPP team winning Chambers Ireland award

Cleaner Greener Efficient Production Network

SPeco Services, Oranmore,
Galway, Ireland
www.speco.ie



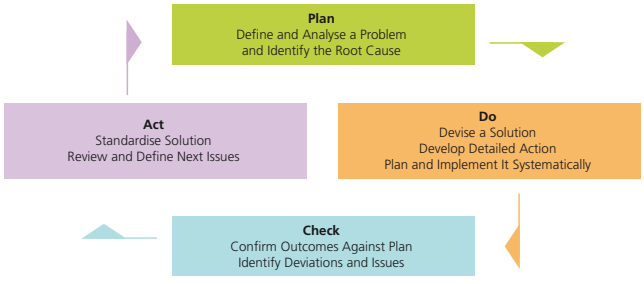
SPeco Services Ltd offers a comprehensive range of environmental and health & safety consultancy services, working closely with clients to identify, design and evaluate cost-effective environmental resource savings.

SPeco Services established a Cleaner Greener Efficient Production Network. The aim of the network was to assist and provide guidance to companies on methods of improving their environmental performance. Twelve companies engaged and, by sharing knowledge and best practice among participants, identified opportunities for cost-saving, environmentally friendly initiatives.

Key achievements:

- Energy workshop organised for the network, with savings opportunities in excess of €30,000 identified
- Training provided on overall equipment effectiveness, with four companies now using this as a KPI to drive production efficiency
- Training provided on waste prevention methods and maximising recycling opportunities
- Training on eco-design was delivered and tools to calculate carbon footprints were demonstrated
- Landfill diversion in excess of 60t achieved by network participants
- 140,000 kWh saved by participants, using improvements in compressed air and energy management
- Two participating companies redesigned products to reduce raw material usage

Diagram illustrating the principles for improving environmental performance



An Ghníomhaireacht um Chaomhnú Comhshaoil

Is í an Gníomhaireacht um Chaomhnú Comhshaoil (EPA) comhlachta reachtúil a chosnaíonn an comhshaol do mhuintir na tíre go léir. Rialaímid agus déanaimid maoirsiú ar ghníomhaíochtaí a d'fhéadfadh truailliú a chruthú murach sin. Cinntímid go bhfuil eolas cruinn ann ar threochtaí comhshaoil ionas go nglactar aon chéim is gá. Is iad na príomh-nithe a bhfuilimid gníomhach leo ná comhshaol na hÉireann a chosaint agus cinntiú go bhfuil forbairt inbhuanaithe.

Is comhlacht poiblí neamhspleách í an Ghníomhaireacht um Chaomhnú Comhshaoil (EPA) a bunaíodh i mí Iúil 1993 faoin Acht fán nGníomhaireacht um Chaomhnú Comhshaoil 1992. Ó thaobh an Rialtais, is í an Roinn Comhshaoil, Pobal agus Rialtais Áitiúil.

ÁR bhFREAGRACHTAÍ

CEADÚNÚ

Bíonn ceadúnais á n-eisiúint againn i gcomhair na nithe seo a leanas chun a chinntiú nach mbíonn astuithe uathu ag cur sláinte an phobail ná an comhshaol i mbaol:

- áiseanna dramhaíola (m.sh., líonadh talún, loisceoirí, stáisiúin aistrithe dramhaíola);
- gníomhaíochtaí tionsclaíocha ar scála mór (m.sh., déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta);
- diantalmhaíocht;
- úsáid faoi shrian agus scaoileadh smachtaithe Orgánach Géinathraithe (GMO);
- mór-áiseanna stórais peitreail;
- scardadh dramhuisce.

FEIDHMIÚ COMHSHAOIL NÁISIÚNTA

- Stiúradh os cionn 2,000 iniúchadh agus cigireacht de áiseanna a fuair ceadúnas ón nGníomhaireacht gach bliain.
- Maoirsiú freagrachtaí cosanta comhshaoil údarás áitiúla thar sé earnáil – aer, fuaim, dramhaíl, dramhuisce agus caighdeán uisce.
- Obair le húdaráis áitiúla agus leis na Gardaí chun stop a chur le gníomhaíocht mhídhleathach dramhaíola trí comhordú a dhéanamh ar líonra forfheidhmithe náisiúnta, díriú isteach ar chiontóirí, stiúradh fiosrúcháin agus maoirsiú leigheas na bhfadhbanna.
- An dlí a chur orthu siúd a bhriseann dlí comhshaoil agus a dhéanann dochar don chomhshaol mar thoradh ar a ngníomhaíochtaí.

MONATÓIREACHT, ANAILÍS AGUS TUAIRISCIÚ AR AN GCOMHSHAOL

- Monatóireacht ar chaighdeán aeir agus caighdeáin aibhneacha, locha, uiscí taoide agus uiscí talaimh; leibhéil agus sruth aibhneacha a thomhas.
- Tuairisciú neamhspleách chun cabhrú le rialtais náisiúnta agus áitiúla cinntí a dhéanamh.

RIALÚ ASTUITHE GÁIS CEAPTHA TEASA NA HÉIREANN

- Cainníochtú astuithe gáis ceaptha teasa na hÉireann i gcomhthéacs ár dtiomantas Kyoto.
- Cur i bhfeidhm na Treorach um Thrádáil Astuithe, a bhfuil baint aige le hos cionn 100 cuideachta atá ina mór-ghineadóirí dé-ocsaíd charbóin in Éirinn.

TAIGHDE AGUS FORBAIRT COMHSHAOIL

- Taighde ar shaincheisteanna comhshaoil a chomhordú (cosúil le caighdéan aeir agus uisce, athrú aeráide, bithéagsúlacht, teicneolaíochtaí comhshaoil).

MEASÚNÚ STRAITÉISEACH COMHSHAOIL

- Ag déanamh measúnú ar thionchar phleananna agus chláracha ar chomhshaol na hÉireann (cosúil le pleananna bainistíochta dramhaíola agus forbartha).

PLEANÁIL, OIDEACHAS AGUS TREOIR CHOMHSHAOIL

- Treoir a thabhairt don phobal agus do thionscal ar cheisteanna comhshaoil éagsúla (m.sh., iarratais ar cheadúnais, seachaint dramhaíola agus rialacháin chomhshaoil).
- Eolas níos fearr ar an gcomhshaol a scaipeadh (trí cláracha teilifíse comhshaoil agus pacáistí acmhainne do bhunscoileanna agus do mheánscoileanna).

BAINISTÍOCHT DRAMHAÍOLA FHORGHNÍOMHACH

- Cur chun cinn seachaint agus laghdú dramhaíola trí chomhordú An Chláir Náisiúnta um Chosc Dramhaíola, lena n-áirítear cur i bhfeidhm na dTionscnamh Freagrachta Táirgeoirí.
- Cur i bhfeidhm Rialachán ar nós na treoracha maidir le Trealamh Leictreach agus Leictreonach Caite agus le Srianadh Substaintí Guaiseacha agus substaintí a dhéanann ídiú ar an gcrios ózóin.
- Plean Náisiúnta Bainistíochta um Dramhaíl Ghuaiseach a fhorbairt chun dramhaíl ghuaiseach a sheachaint agus a bhainistiú.

STRUCHTÚR NA GNÍOMHAIREACHTA

Bunaíodh an Ghníomhaireacht i 1993 chun comhshaol na hÉireann a chosaint. Tá an eagraíocht á bhainistiú ag Bord lánaimseartha, ar a bhfuil Príomhstiúrthóir agus ceithre Stiúrthóir.

Tá obair na Gníomhaireachta ar siúl trí ceithre Oifig:

- An Oifig Aeráide, Ceadúnaithe agus Úsáide Acmhainní
- An Oifig um Fhorfheidhmiúchán Comhshaoil
- An Oifig um Measúnacht Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáide

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag ball air agus tagann siad le chéile cúpla uair in aghaidh na bliana le plé a dhéanamh ar cheisteanna ar ábhar imní iad agus le comhairle a thabhairt don Bhord.

ENVIRONMENTAL PROTECTION AGENCY

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