ENTERPRISE IRELAND
where innovation means business

FIRST STEPS TO GREEN COMPETITIVENESS GUIDEBOOK

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1.0 Introduction

Enterprise Ireland's core mission is to work in partnership with its client companies to develop a sustainable competitive advantage leading to a significant increase in profitable sales, exports and employment. There is increasing recognition that good environmental performance makes good business sense. In the current economic climate, companies are adopting greener strategies in areas such as, resource efficiency (energy, waste and water) and reduction in carbon footprint, which will impact current performance and provide improved efficiencies.

Many companies find it difficult to incorporate environmental improvements into the day to day running of their businesses. However, it is possible for a business to put a simplified environmental management system in place thereby introducing better environmental performance without requiring a major commitment in time and resources. When such a system is in place, its practices become second nature and can be developed over time to a more sophisticated level.

The system outlined in this guidebook includes templates for the installation of an **Environmental Policy Statement** and provides a foundation for the basic management of a business's environmental impacts. The policy statement demonstrates that good environmental practice is in place throughout the business. The management system will lead to an increased level of environmental awareness in relation to regulatory requirements and performance. An increased environmental performance will help a business achieve improved competitive advantage through greater resource efficiency (energy/water/waste costs), compliance requirements and a greater market share through enhanced environmental/green credentials in an ever-changing and competitive business environment.

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2.0 Environmental Policy Statement

An Environmental Policy Statement is a document that sets out a company's commitment to managing its environmental impacts. It indicates its commitment to comply with environmental regulations. In addition, where its business operation impacts on the environment, in areas such as, waste, water use, effluent, air, energy and noise, it will endeavour to manage those impacts in the best possible way. The statement should indicate that the company communicates its Environmental Policy, as appropriate, with relevant stakeholders such as, the EPA, local authorities, local communities and customers. It should also aim to communicate that staff have been adequately trained in awareness of the company's Environmental Policy and that the company is striving towards continual improvement with regard to environmental issues.

A statement can also include sector specific information regarding reduction of carbon footprint, reduced packaging, reduced transportation, use of hazardous chemicals or use of sustainable raw materials.

A typical example statement follows, showing how it is laid out, on company headed paper and signed off by the Managing Director. This indicates senior management commitment to the process.

This is a generic example and can be modified to suit a company's needs. However, as a minimum, the statement should refer to the areas covered in the first section in black type (A). The second part, in italic type (B), gives optional statements which may be included/omitted, as appropriate.

Example : **Environmental Policy Statement**

ACME ENTERPRISES

(A)

Acme Enterprises (change to company name) is aware that its business activities impact upon the environment and is committed to ensuring these activities have the least possible detrimental effect.

We are committed to:

- Complying fully with all relevant legal requirements, codes of practice and regulations.
- Assessing the environmental impacts of our operations, continuously seeking to reduce pollution and improving our resource efficiency through reduction of energy use and waste.
- Promoting environmental and energy awareness in our employees through participation and training.
- Working with our customers to make more environmentally sensitive choices.
- Monitoring our progress to ensure ongoing improvements in our environmental performance.
- Communicate this policy to stakeholders and the public and work with our neighbours to reduce the visual impact of our operations.

These commitments will be carried out in line with our environmental policy

J. Jones
Managing Director

(B)

Other specific issues related to your company can be included, such as:

Energy

- *Reducing our carbon footprint as part of a carbon management strategy.*
- *Optimise energy efficiency and conservation in all operations.*
- *Controlling and managing energy efficiency in our business and promoting energy efficiency.*
- *Reducing the impact of transportation of our goods.*

Waste

- *Actively promote reuse and recycling both internally and amongst our suppliers and customers.*
- *Minimising waste generation by applying reuse and recycle options where possible.*
- *Minimise waste generation and unnecessary resource usage during the stages of planning, design , commissioning and operation of new and existing processes, plant and equipment.*
- *Reducing packaging on all our products where feasible.*

Continuous Improvement

- *Setting specific improvement targets, monitoring progress and communicating results internally.*
- *Continual improvement through the development of environmental performance evaluation procedures and associated indicators.*
- *Develop specific objectives to continually improve our environmental performance.*
- *Set objectives and targets for continuous improvement. Measure and review our performance regularly and communicate the results.*
- *Continual performance improvement in minimising environmental impacts of our business.*
- *Promoting continuous improvement by setting, monitoring and reviewing our environmental targets and objectives.*

Procurement

- *Choosing suppliers and contractors that adopt best environmental practices and make this the procurement policy of our company.*
- *Purchasing products and services that have the least environmental impact, where this is feasible.*
- *Encouraging suppliers and contractors to implement sustainable environmental systems.*
- *Minimizing the use of hazardous chemicals and solvents.*
- *Using timber from sustainable sources.*

Awareness/Training

- *Encouraging environmental awareness among our employees through appropriate communication and training programmes.*
- *Promoting environmental awareness throughout our business.*
- *Ensure that all employees understand our environmental policy and conform to its standards.*
- *Continuous training of all staff in all environment related issues.*
- *Informing and motivating all of our staff and encouraging them to play an active role in committing to our environmental policy*

3.0 Environmental Management Programme

An Environmental Management Programme is a system which assists companies in managing their environmental impacts. It helps identify areas in the business where savings can be made by addressing resource loss and indicates any issues arising in regard to environmental regulations. The programme is based on a systematic method of recording environmental data called “EcoMaps”. These cover various areas of the operation where issues can arise and provide a visual tool which illustrates the contributing sources of the environmental impacts and a record of issues as they arise.

1 Environmental impact areas covered;

- Water/Wastewaters
- Air/Noise/Dusts
- Wastes
- Storage
- Energy

Each EcoMap incorporates a space to provide a visual overview of the business process and a record of relevant data and issue, as they arise. The Eco Map also includes a table where observations from site assessments and relevant information are recorded. A worked example has been added for guidance. Records of water bills, fuel bills, boiler service records, waste collection invoices etc should be filed with the relevant EcoMap.

2 Preventative/Corrective Action Sheet

This is a basic record sheet where issues are recorded together with the person responsible for overseeing correction and the date.

3. Record of Savings

This is record sheet to identify savings made as a result of preventative/corrective actions taken.

4. Micro - Report

This report summarises the findings from the various EcoMaps and Action Sheet.

4.0 Water and Wastewater EcoMap

Draw your site here & highlight areas where there may be problems

Requires immediate attention

Requires attention

Requires Monitoring

WHAT TO LOOK FOR:

- Where is there a high level of water consumption?
- Where are hazardous substances poured into the sewer?
- Possibilities for product substitution
- Possible accidents
- Wastage & bad habits
- Potential for cost savings
- Identify major release of domestic, process cooling water

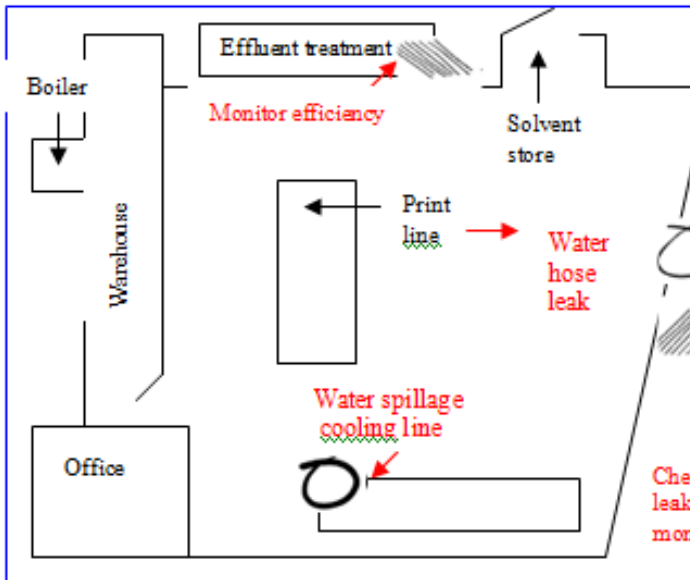
Problems are always linked to activities

- High pressure cleaning & drains without oil separator – waste water
- Floor cleaning with hoses – excessive water consumption
- Cleaning with detergents – waste water
- Maintenance – blocked pipes

Observe & Locate	Collect information	Evaluate & Estimate	Indicators & Reporting
Areas where harmful liquids are poured	Annual water bills	Wastage	**Major source of consumption (% domestic, process, cooling etc.)**
Leaks in piping & drainage system	Licence for discharge of wastewater	Activities which require water use	**Results of monitoring of discharge**
Existing treatment equipment	Licence for pumping of groundwater	Pollutants & impacts	**Cost of water consumption (€)**
Major areas of consumption (washing machines, cooling water, washdown)	Plan of sewage system	Measurement of discharge (process, domestic)	
	Technical description of effluent treatment from supplier	**Proper functioning of water treatment equipment & quantity treated**	

Water and Wastewater EcoMap – Example

Draw your site here & highlight areas where there may be problems



WHAT TO LOOK FOR:

- Where is there a high level of water consumption?
- Where are hazardous substances poured into the sewer?
- Possibilities for product substitution
- Possible accidents
- Wastage & bad habits
- Potential for cost savings
- Identify major release of domestic, process cooling water

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Requires Monitoring

Problems are always linked to activities

- High pressure cleaning & drains without oil separator – waste water
- Floor cleaning with hoses – excessive water consumption
- Cleaning with detergents – waste water
- Maintenance – blocked pipes

Observe & Locate	Collect Information	Evaluate & Estimate	Indicators & Reporting
Areas where harmful liquids are poured *Solvent storage*	Annual water bills *In file*	Wastage *Excess washdown not recycled. 400 litres/ day*	**Major source of consumption (% domestic, process, cooling etc.)** ***Cooling 70%***
Leaks in piping & drainage system *Water hose at back of plant*	Licence for discharge of wastewater *In file*	Activities which require water use *Cooling line* *Floor wash*	**Results of monitoring of discharge** ***220m3 p/d***
Existing treatment equipment *Effluent treatment plant back of plant*	Licence for pumping of groundwater *In file*	Pollutants & impacts	**Cost of water consumption (€)** ***1,200***
Major areas of consumption (washing machines, cooling water, washdown) *Cooling line*	Plan of sewage system *Settlement tank, pH adjustment*	Measurement of discharge (process, domestic)	
	Technical description of effluent treatment from supplier	**Proper functioning of water treatment equipment & quantity treated**	

5.0 Air, Noise, Dust EcoMap

Draw your site here & highlight areas where there may be problems

WHAT TO LOOK FOR:

- Odours & air quality resulting from company operations
- Do you pay attention to sources of noise, complaints from local residents?
- Are filters replaced regularly?
- When was maintenance work last carried out on your boiler?

Problems are always linked to activities

- Air extraction with old filters – air pollution
- Painting with airgun – noise, odours, VOCs
- High pressure air cleaning – noise, dust
- Painting booths with bad ventilation - VOCs

Requires immediate attention

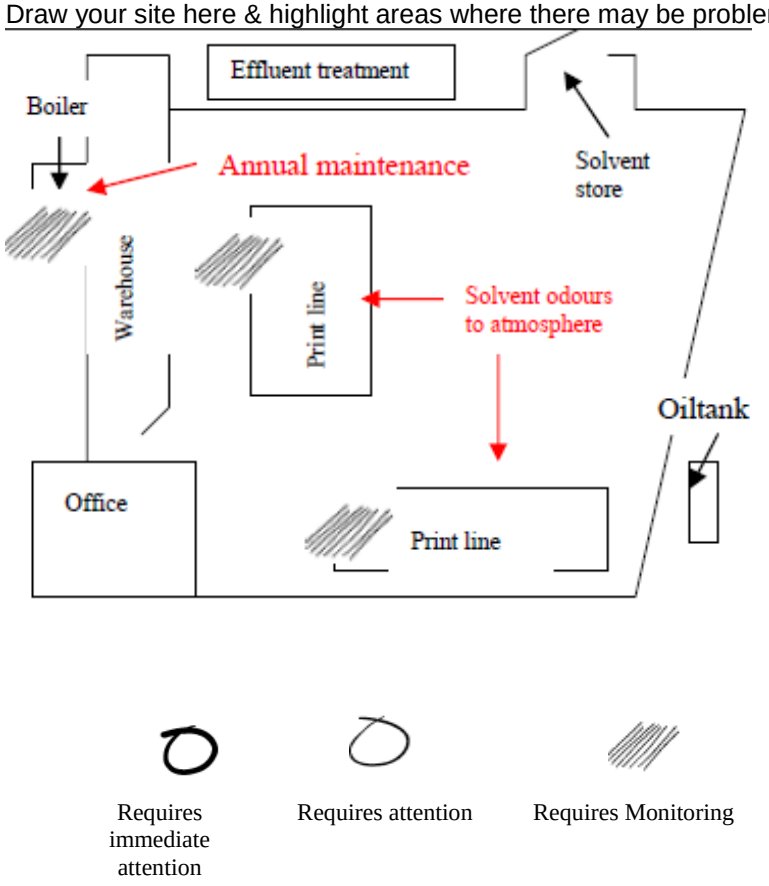
Requires attention

Requires Monitoring

Observe & Locate	Collect Information	Evaluate & Estimate	Indicators & Reporting
Openings in roofs & ventilation	Maintenance records, solvent regulations compliance certificate	Work procedures	**Volume of volatile pollutants in litres**
Main points of emissions	Technical instruction sheets	Condition of filters & ducts	**Noise levels (dB(A)) inside & outside**
Filtration system	Product safety sheets	Disturbance & frequency of odours, dust & noise	**Frequency of analysis & maintenance**
Noise reduction systems	Measurement of air flows, gases etc	Neighbours' complaints re noise, air, dust, odours	**Results of monitoring (CO_2, NO_x, SO_2, VOCs)**
	Emission limits		

Air, Noise, Dusts EcoMap – Example

Draw your site here & highlight areas where there may be problems



WHAT TO LOOK FOR:

- What is the air quality inside your company?
- Do you pay attention to sources of noise, complaints from local residents?
- Are filters replaced regularly?
- When was maintenance work last carried out on your boiler?

Problems are always linked to activities

- Air extraction with old filters – air pollution
- Painting with airgun – noise, odours, VOCs
- High pressure air cleaning – noise, dust
- Painting booths with bad ventilation - VOCs

Observe & Locate	Collect Information	Evaluate & Estimate	Indicators & Reporting
Openings in roofs & ventilation *Skylights*	Maintenance records, solvent regulations compliance certificate *In file*	Work procedures	**Volume of volatile pollutants in litres** ***800***
Main points of emissions *Boiler stack*	Technical instruction sheets	Condition of filters & ducts *Annual audit*	**Noise levels (dB(A)) inside & outside** ***55 dB(A)outside***
Filtration system	Product safety sheets *In file*	Disturbance & frequency of odours, dust & noise	**Frequency of analysis & maintenance** ***Annual audit***
Noise reduction systems ***Noise barrier at site boundary***	Measurement of air flows, gases etc *Annual check*	Neighbours' complaints re noise, air, dust, odours *2 complaints re noise – barrier put in place 15/3/11*	**Results of monitoring (CO_2, NO_x, SO_2, VOCs)** ***In file & on raw materials sheet***
	Emission limits ***None***		

6.0 Wastes EcoMap

Draw your site here & highlight areas where there may be problems

WHAT TO LOOK FOR:

- What are the levels of recycling?
- What waste prevention measures have been taken?
- Are your suppliers obliged to take back materials & packaging?
- Are your suppliers members of Repak?

Requires immediate attention

Requires attention

Requires Monitoring

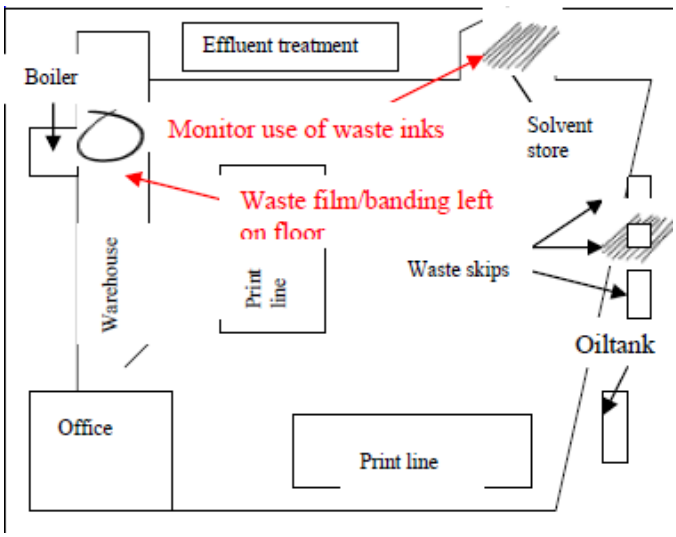
Problems are always linked to activities

- Waste separation – mix of household/non-Hazardous and hazardous waste
- Waste generation during painting – hazardous waste
- Outside waste storage – uncontrolled waste flow
- Product delivery – packaging waste

Observe & Locate	Collect Information	Evaluate & Estimate	Indicators & Reporting
Bins & containers	Waste collection permit from waste management company	Level of recycling (%)	**Kilos of waste disposed, category/year (paper, plastic, toner, hazardous etc)**
Direction of waste flows	Annual bills	Prevention measures	**Waste charges per year (€)**
Incorrect waste storage areas	Assessment & management	Frequency of waste disposal	**Variety of waste streams**
Location of waste production & storage		**Reuse of waste**	

Wastes EcoMap – Example

Draw your site here & highlight areas where there may be problems



Requires immediate attention

Requires attention

Requires Monitoring

WHAT TO LOOK FOR:

- What are the levels of recycling?
- What waste prevention measures have been taken?
- Are your suppliers obliged to take back materials & packaging?
- Are your suppliers members of Repak?

Problems are always linked to activities

- Waste separation – mix of household/non-Hazardous and hazardous waste
- Waste generation during painting – hazardous waste
- Outside waste storage – uncontrolled waste flow
- Product delivery – packaging waste

Observe & Locate	Collect Information	Evaluate & Estimate	Indicators & Reporting
Bins & containers *20 x midi skips* *30 x 300 litre bins*	Waste collection permit from waste management company *In file*	Level of recycling (%) *75%*	**Kilos of waste disposed, category/year (paper, plastic, toner, hazardous etc)** ***Paper 100kg, plastic 200kg, hazardous 2000 litres***
Direction of waste flows *40% landfill, 10% reused, 50% recycled*	Annual bills *In file*	Prevention measures *Segregation and monthly spot check*	**Waste charges per year (€)** ***1,000***
Incorrect waste storage areas *N/A*	Assessment & management *Overseen by Operations Manager*	Frequency of waste disposal *Weekly*	**Variety of waste streams** ***Paper, plastic, hazardous***
Location of waste production & storage ***West side wall of plant***		**Reuse of waste** ***10%***	

7.0 Storage EcoMap

Draw your site here & highlight areas where there

Obs & Locate	Collect Infor n	Evaluate & Estimate	Indicators & Reporting
Storage areas & rooms	Data safety sheets on products	Analyse condition of old tanks	**Watertight surfaces in m^2**
Tanks	Layout of tanks	Impermeability of soil	**Permanent stock of inflammables & toxic materials in litres**
Drums, containers, contaminated pallets etc	Areas of water collection	Condition of storage of hazardous products	**Capacity of tanks in litres**
Impermeable surfaces	Bund integrity test & security reports	Types of products stored in tanks & drums	**Number of leaks incidents per year**
Secondary containment		Record of oil & chemical leakages	

Requires immediate attention

Requires attention

Requires Monitoring

may be problems

WHAT TO LOOK FOR:

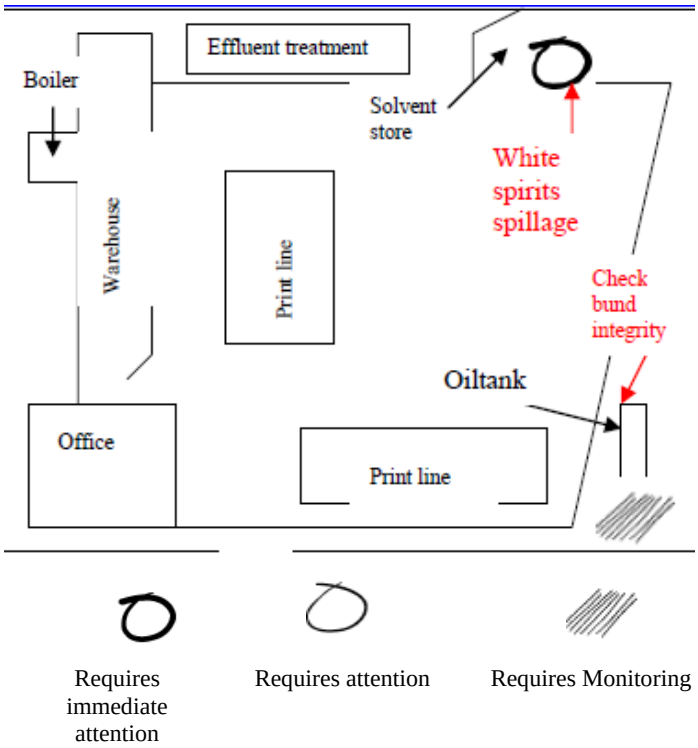
- Is there a threat to groundwater in the case of accident?
- Where are your old oil tanks?
- Where is there potential for soil pollution?
- Procedures in case of accidentsDo storage areas have concrete floors, are they partitioned off? Are they bunded?

Problems are always linked to activities

- Fuel & chemical storage in area without retention system – potential soil pollution
- Refilling of fuel for heating in oil tank risks of spillages, soil & groundwater pollution
- Product delivery – spillages
- Outside storage of drums & bin uncontrolled waste

Storage EcoMap – Example

Draw your site here & highlight areas where there may be problems



Requires immediate attention | Requires attention | Requires Monitoring

WHAT TO LOOK FOR:

- Is there a threat to groundwater in the case of accident?
- Where are your old oil tanks?
- Where is there potential for soil pollution?
- Procedures in case of accidents
- Do storage areas have concrete floors? Are they partitioned off? Are they bunded?

Problems are always linked to activities

- Fuel & chemical storage in area without retention system – potential soil pollution
- Refilling of fuel for heating in oil tank risks of spillages, soil & groundwater pollution
- Product delivery – spillages
- Outside storage of drums & bin uncontrolled waste

Observe & Locate	Collect Information	Evaluate & Estimate	Indicators & Reporting
Storage areas & rooms *Solvent store back of main building*	Data safety sheets on products *See master file*	Analyse condition of old tanks *Annual audit*	**Watertight surfaces in m^2** ***2000***
Tanks *Fuel oil tank in yard east side of plant*	Layout of tanks *Yard on east side of plant away from parking area*	Impermeability of soil	**Permanent stock of inflammables & toxic materials in litres** ***2500 litres***
Drums, containers, contaminated pallets etc *Waste collection point side gate*	Areas of water collection	Condition of storage of hazardous products *Solvent store, see inventory Annual audit*	**Capacity of tanks in ltrs** ***2000 litres – fuel oil*** ***50 litres – solvents see inventory***
Impermeable surfaces *Concrete surface to boundary fence*	Bund integrity test & security reports *Annual bund test in file*	Types of products stored in tanks & drums *Solvents, MEK, White Spirits, Acetone*	**Number of leaks incidents per year** ***None***
Secondary containment *None*		History of oil & chemical leakages *1 leak 28/8/13 – small spillage from split Acetone container. 10 litres cleaned up*	

8.0 Energy EcoMap

Draw your site here & highlight areas where there may be problems

WHAT TO LOOK FOR:

- Where are areas of electricity/fuel wastage?
- Compliant electrical installations
- Where do heat losses occur?
- Check compressed air for leaks
- Turn of IT equipment & lights in offices & factory

Problems are always linked to activities

- Lighting of storage rooms - electricity
- Air compressing for pneumatic tools on oversized machinery - electricity
- Open doorways – loss of energy
- Running & maintenance of boilers – electricity/fuel

Requires immediate attention

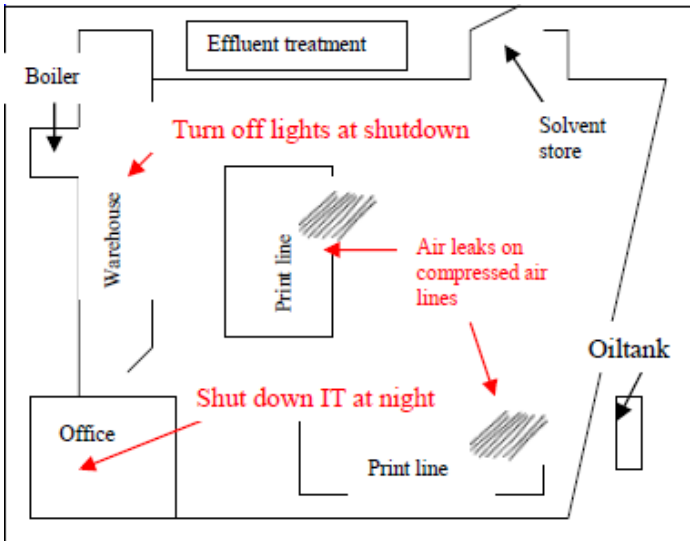
Requires attention

Requires Monitoring

Observe & Locate	Collect Information	Evaluate & Estimate	Indicators & Reporting
Location of heavy machinery	Maintenance certificates for heating systems	Type & use of electricity	**Consumption kWh (IT, admin, lights, cooling, heating, process & machinery**
Poor/too much lighting	Technical instruction sheets for machinery	Insulation	**Cost of electricity, gas & fuel consumption (€)**
Areas of heat loss	Bills	Energy efficiency (good/bad/ok)	
	Audit reports of energy efficiency	Oversize machinery	
		Heating installation efficiency	
		Correct use of equipment & analysis of wastage	

Energy EcoMap – Example

Draw your site here & highlight areas where there may be problems



Requires immediate attention

Requires attention

Requires Monitoring

WHAT TO LOOK FOR:

- Where are areas of electricity/fuel wastage?
- Compliant electrical installations
- Where do heat losses occur?
- Check compressed air for leaks
- Turn off IT equipment & lights in offices factory

Problems are always linked to activities

- Lighting of storage rooms - electricity
- Air compressing for pneumatic tools on oversized machinery - electricity
- Open doorways – loss of energy
- Running & maintenance of boilers – electricity/fuel

Observe & Locate	Collect information	Evaluate & Estimate	Indicators & Reporting
Location of heavy machinery *Main assembly plant, east section of plant*	Maintenance certificates for heating systems *In file*	Type & use of electricity *Process drives, motors, IT equip, electric heating*	**Consumption kWh (IT, admin, lights, cooling, heating, process & machinery** ***850,000***
Poor/too much lighting *Poor lighting in warehouse*	Technical instruction sheets for machinery *In file*	Insulation *Roof*	**Cost of electricity, gas & fuel consumption (€)** ***100,000***
Areas of heat loss *Main service doors*	Bills *In file*	Energy efficiency (good/bad/ok) *ok*	
	Audit reports of energy efficiency *SEAI audit in file*	Oversize machinery	
		Heating installation efficiency *None*	
		Correct use of equipment & analysis of wastage ***BMS control***	

9.0 Summary Report

EcoMap	Action	Person Responsible	Date

10.0 Record of Savings

EcoMap	Action	Q_1 Savings	Q_2 Savings	Q_3 Savings	Q_4 Savings

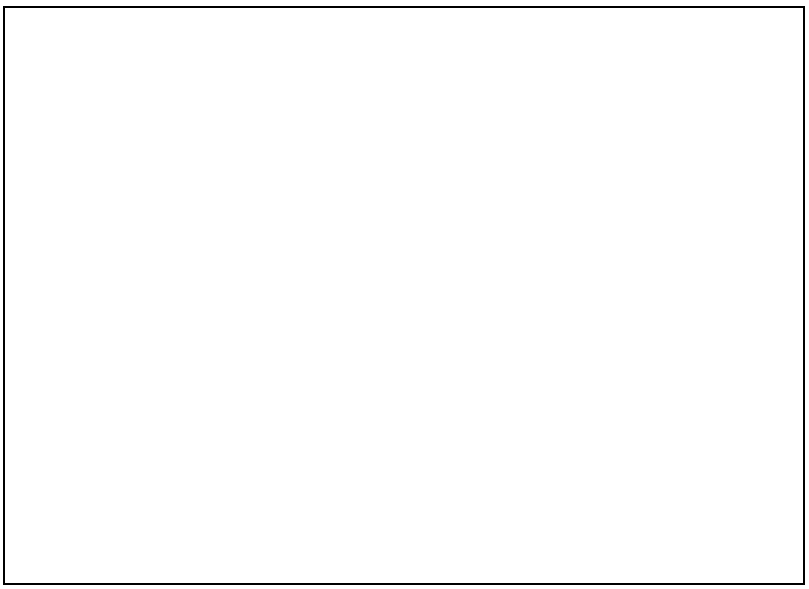
11.0 MICRO Environmental Report & Declaration

Company Name: **Website:**

Address: **Date:**

Phone: **Fax:**

Contact Person **Email:**



EcoMap	Actions	Person Responsible	Date

Completed by: _____

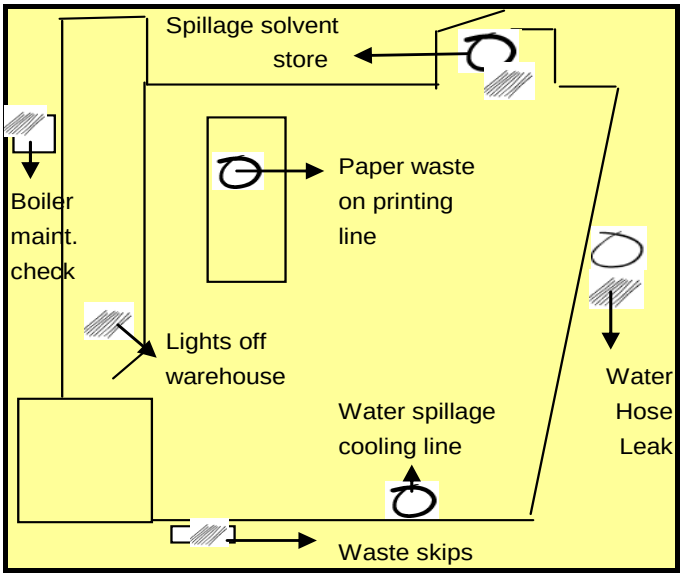
Micro Environmental Report & Declaration (Example)

Company Name: **Website:**

Address: **Date:**

Phone: **Fax:**

Contact Person **Email:**



EcoMap	Actions	Person Responsible	Date
Water	Spillage from Cooling Line – leak sourced and repaired	T. Brady	12/6/2011
	Leak waste pipe at rear of premises – leak repaired	M. Hoey	16/8/2011 Check as part of routine audit - ongoing
Energy	Boiler annual maintenance report showed 80% efficiency – Burner jet cleaned	Murphy Boiler Service	10/11/2011
	Warehouse Lights – Check each evening	T Brady	Ongoing
Air	Solvent spillage in Store Room – Rear doors opened to vent, floor cleaned	T. Brady	2/3/2011 Check as part of routine audit – ongoing
Waste	Incorrect materials in Recycle Skip – monitor monthly	A. Lynch	Ongoing

Completed by: _____

12.0 Operational Excellence Offers

Green Offer

As part of assisting client companies achieve improved export growth, the Enterprise Ireland Green Offer facilitates the incorporation of sustainable practices into the day-to-day running of the business. This is a two tiered offer based around building capability within companies to improve environmental best practice:

- GreenStart
- GreenPlus

Areas covered by the offer include: Environmental Management Systems, Energy Management Systems, Carbon Management Systems, Water Stewardship and Life Cycle Assessment.

Better environmental performance leads to improved resource efficiency and direct cost savings and can also increase access to customers who are increasingly demanding more environmentally friendly products and services.

For further information please contact:

Kathleen O'Regan
Operational Excellence Department
Tel: +353 61 777 072
Email: green@enterprise-ireland.com

Lean Offer

Enterprise Ireland's Lean Business Offer is designed to encourage clients to adopt Lean business principles in their organisation to increase performance and competitiveness.

Lean tools and techniques are helping companies across the globe to address competitiveness issues within their businesses by building the capability of their people to identify problems and improve operations.

The Lean Business Offer is not just for manufacturing companies. Software and internationally traded services companies can avail of funding under the Lean Offer to drive improvements and efficiencies in their business.

The Lean Business Offer is made up of three levels of support:

- LeanStart
- LeanPlus
- LeanTransform

Each level of support is characterised by increasing levels of capability in implementing Lean business principles and other best practice approaches to drive company awareness, adoption and integration of Lean tools and techniques.

For further information please contact:

Stephen Reid
Operational Excellence Department
Tel: +353 1 727 2370
Email: lean@enterprise-ireland.com

Operational Excellence

The aim of the Operational Excellence offer is to support established companies (SME and Large) to address their competitive challenges and growth opportunities through a transformation project that would include investment in:

- Business Innovation: the implementation of new and innovative production, delivery or organisational methods
- Capital equipment
- Capability building through training

The identifiable project around which the growth plan is structured should involve a significant change in how the company does business and should not be focused on routine operational changes. Examples could include:

- a manufacturing company investing in new equipment and integrated software systems to implement a new production method using lean principles and training of staff
- a services company providing bespoke creative design services implementing a new production method, involving new standardised process design, automation of parts of the process and training of staff in lean principles
- company implementing new methods of doing business with suppliers and partners, including investment in new equipment, software development and training of management and staff

For further information please contact:

Financial Products Helpdesk
Tel: +353 1 727 2799
Email: Financial.products@enterprise-ireland.com

Benchmarking Company Competitiveness - Company Health Check (CHC) – Benchmarking for Success

Competitiveness is a measure of a business' ability to survive in the market place. Although a number of external factors can impact on a company's competitiveness position such as oil prices, exchange rates etc, many factors are within the control of the management team and employees. Your competitiveness is dependent on having the right design of products, making them well, selling them efficiently and supporting the customer after the sale. It requires being as effective and as efficient as the best in the world. Many companies use the Enterprise Ireland Company Health Check to identify and prioritise problem areas in their business. Enterprise Ireland can support you to benchmark your company against a database of European companies in your sector by working with you to undertake a Company Health Check (CHC). Following a programme of activities to address issues identified in the Company Health Check, you can repeat the benchmarking process to monitor improvements in performance.

For further information please contact:

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