



## **ENVIRONMENTAL MANAGEMENT APPROACHES TO IMPROVING THE ENVIRONMENTAL PERFORMANCE OF YOUR BUSINESS**

### **1.0 INTRODUCTION:**

This guide provides an introduction to current approaches for improving the environmental performance of industrial processes, products & services. Overall this is about effective Environmental Management. The aim of the guide is to introduce Environmental Management, the business benefits it provides and how to implement it in your business. The sections included are:-

- ⇒ [WHAT IS ENVIRONMENTAL MANAGEMENT?](#)
- ⇒ [THE BUSINESS CASE](#)
- ⇒ [HOW TO GET STARTED](#)
- ⇒ [PRACTICAL SUPPORTS & INFORMATION SOURCES](#)



## 2.0 WHAT IS ENVIRONMENTAL MANAGEMENT:

Environmental Management encompasses a range of approaches aimed at improving the environmental performance of industrial processes, products and services. The aim of Environmental Management approaches is to design, develop and operate industrial activities, products and services that **prevent or minimise environmental impacts** while still being **economically competitive**. Previous approaches to environmental protection focused on managing environmental impacts e.g. wastes and emissions to air and water after they were created. Modern approaches aim to prevent or minimise environmental impacts in the first place. This can bring business benefits in terms of **cost savings, competitiveness and market opportunities**.

**Effective Environmental Management** can be applied to the processes used in any industry as well as to the products and services provided. Some examples of what is considered in applying this include the following:-

**For production processes:**

conserving raw materials, water and energy; eliminating toxic and dangerous raw materials; reducing the quantity and toxicity of all emissions and wastes at source during the production process.

**For products and services:**

- incorporating environmental concerns into the design and provision of products and services;
- reducing the environmental, health and safety impacts of products over their entire lifecycle, from raw materials extraction, through production and use, to the end of life recovery and/or ultimate disposal of the product.

There are many concepts, methods and tools for implementing Environmental Management in industry. You are probably familiar with a number of these already. Some well known approaches used in industry include:-

- Environmental Management Systems
- Eco-efficiency
- Waste Management & Waste Minimisation
- Energy Efficiency
- Resource Productivity
- Ecodesign / Design for Environment.

**IS ENVIRONMENTAL MANAGEMENT ONLY FOR LARGE COMPANIES?  
NO.**

Environmental Management approaches apply to all businesses irrespective of size or industry sector. Small and Medium Sized Enterprises (SMEs) as well as large and



multinational corporations can gain business benefits and improve their environmental performance using these approaches.

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### 3.0 THE BUSINESS CASE:

Increasingly stringent legislation as well as market and financial drivers for demonstrating good environmental business practices are creating a strong business case for Environmental Management. Effectively managing environmental impacts can improve your company's profitability as well as environmental performance. Direct business benefits include:-

- Cost savings from reduced raw material and utility consumption;
- Reduced waste collection, treatment and disposal costs especially in the case of hazardous waste;
- Improved process control and product quality;
- Ongoing compliance with legal obligations and reduced liability associated with poor environmental performance;
- Improved relationships with key stakeholders e.g. customers, suppliers, shareholders, regulatory authorities and local communities;
- Improved opportunities for marketing features leading to increased sales;
- Expanding market opportunities;
- Improved competitiveness;
- Capability building;
- Improved corporate reputation.

Other less obvious benefits can include reduced insurance premiums, increased employee motivation and an improved working environment. All of these measures will cut costs. Whatever stage you are at, investigating what environmental management can bring to your business will both benefit your bottom line and improve your relationships with key stakeholders such as financial institutions, customers and local communities. Further information on the financial and market issues driving good environmental performance are outlined in the boxes below.



#### Financial issues

The more polluting the business, the higher the financial costs they will pay. These include increasing costs for utilities e.g. energy and the costs of waste collection,



recovery, reuse, recycling or disposal. This provides a significant financial motivation to reduce these costs through resource efficiencies and waste prevention or minimisation. Typically the cost of wasted raw materials, water and energy etc. is 10 times the cost of waste disposal - so action to improve resource efficiency will usually lead to cost savings. For example, by improving the efficiency with which a business uses water and raw materials, it can cut the amount and concentration of effluent they produce and reduce the amount of waste that must be disposed of. In terms of products, 80% of the environmental impacts as well as its costs are determined at the design stage. Therefore, there are real opportunities for building in environmental and cost efficiencies at source when designing your products and services.



### **Market Issues**

Pressure from customers to demonstrate good environmental performance is an increasing market driver for industry. This is particularly the case for Business to Business operations that experience this pressure from customers through the supply chain. Large organisations are increasingly requiring evidence of good environmental practices e.g. ISO14001 Environmental Management System certification from their suppliers, some specifying it as a prerequisite to doing business. Further, depending on the business, demonstrating sound environmental performance is key to maintaining a company's corporate reputation and market position.

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#### 4.0 HOW TO GET STARTED:

To help you get started this section outlines the **KEY STEPS** you should consider in improving your environmental performance. More detail on key steps can be found in existing or soon to be developed **Enterprise Ireland Environmental Best Practice Guidance Notes**: <http://www.envirocentre.ie/global/site/guides.asp?id=24>  
Click for **case examples**: <http://www.envirocentre.ie/global/site/guides.asp?id=25> ] of Environmental Management in Irish industry and the business benefits achieved.

##### **New or Existing Business?**

For new business, the prevention and minimisation of environmental impacts should be included as key criteria when designing your activities, products & services as well as the site infrastructure and buildings. Incorporating environmental considerations at this stage can prevent environmental problems and the high costs associated with end of pipe clean up approaches. For existing businesses, Environmental Management can be retrofitted into your activities, products and services as well as incorporated when developing new activities or expanding your facilities.

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#### 4.1 Key Steps:

### LAYING THE FOUNDATIONS

Gain commitment to managing your environmental issues from the most senior personnel in the company.

Nominate an environmental champion in the company to focus on environment.

If there is no environmental expertise in the company consider incorporating this through the use of external expertise e.g. environmental consultants on a temporary basis to prevent recreating the wheel and to transfer expertise into the company. This is particularly useful for initially identifying and understanding your environmental impacts and legal compliance obligations.

Incorporate environmental objectives to be achieved in the company policy and develop an environmental action plan for implementing them.

Involve company personnel from each department (e.g. finance, production, purchasing etc...) from the beginning to ensure buy in and commitment.

Conduct training sessions on your environmental issues to ensure awareness and understanding.



## IDENTIFYING SIGNIFICANT ENVIRONMENTAL IMPACTS

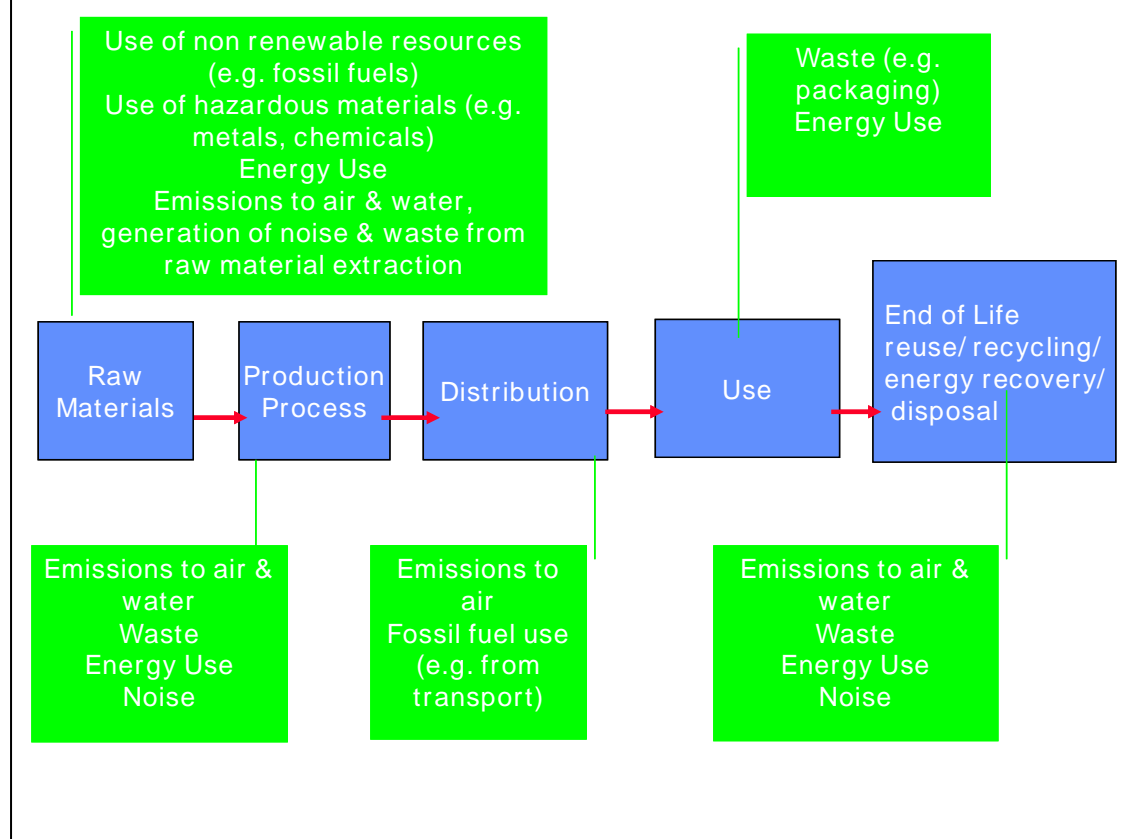
In order to manage your environmental impacts appropriately you first need to identify and quantify them. This can be achieved through an environmental audit. An environmental audit should identify the following:-

- key significant environmental impacts associated with your activities, products and services;
- specific environmental legal obligations as well as market and financial drivers for improving environmental performance relevant to your company.

Consider the environmental impacts associated with all your activities as well as the products and services you provide for each lifecycle stage (e.g. raw materials, production process, distribution, use and end of life reuse, recycling, energy recovery or disposal). Identify and quantify the inputs and outputs. Some examples of the issues to consider for each life cycle stage of a typical product manufacturing process are illustrated in **Figure 1** below.

Use the [Resource Loss Mapping and Process Loss Reduction Guidance Notes](http://www.envirocentre.ie/global/site/guides.asp?id=24) <http://www.envirocentre.ie/global/site/guides.asp?id=24> as a guide to identifying your inputs and outputs.

**Figure 1: Environmental impacts to consider for each lifecycle stage**



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## CLEAN PROCESSES, PRODUCTS AND SERVICES

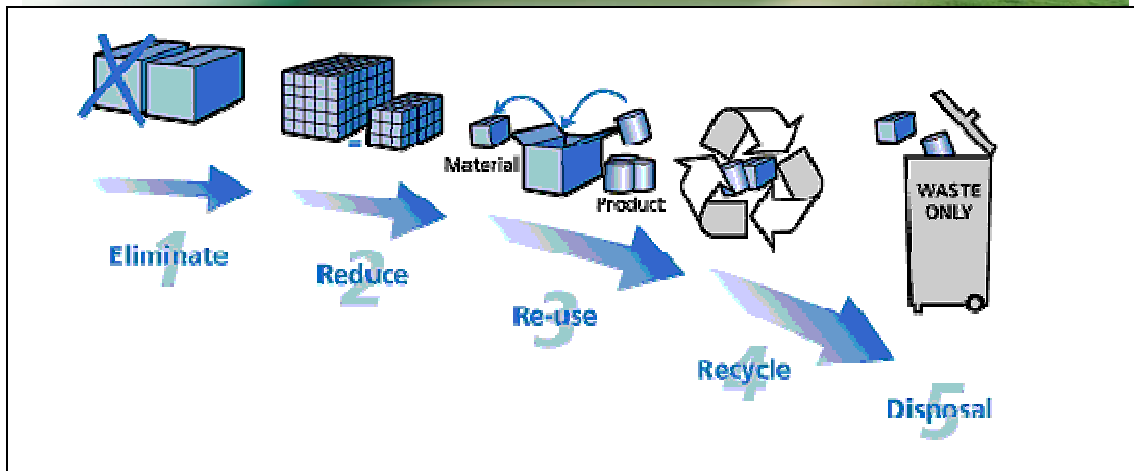
Once you understand your environmental impacts and your legal, market and financial drivers identify the opportunities for preventing and minimising your environmental impacts.

Set realistic objectives and targets for improving your environmental performance and an action plan with designated responsibility for achieving them.

Overall the hierarchy of options for managing your environmental impacts are described in **Figure 2** in order of priority of best environmental options. This is illustrated using waste as an example.

### **Figure 2: Hierarchy of options for managing your environmental impacts**

1. Eliminate, where possible at source, significant environmental impacts associated with activities, products and services e.g. waste, emissions to air/water and noise;
2. Where this is not possible, reduce environmental impacts through more efficient resource usage, waste minimisation or appropriate controls;
3. Aim to reuse production and end of life waste materials as raw materials where feasible;
4. Where waste cannot be reused, recycle it as a raw material for another product or as fuel for energy generation;
5. As a last option, appropriately dispose of waste using contractors with suitable licences or permits and maintain records.



Click for a [CHECKLIST](#) of issues to consider within this hierarchy for the overall design of products & services and for each lifecycle stage.

## CONTINUOUSLY MANAGING ENVIRONMENT IMPACTS

Environmental Management Systems (EMS) provides a formal specification or route map for continuously managing environmental impacts and improving your environmental performance. All of the key steps above are incorporated in an EMS. The ISO14001 standard and Eco-Management and Audit Scheme (EMAS) are EMS specifications to which companies can become certified. This certification provides a third party validation that your environmental impacts are being appropriately managed. Click here for further information on EMS

<http://www.envirocentre.ie/downloads/Legislation10EMSChapter.pdf>

## COMMUNICATION & REPORTING

Demonstrating and communicating good environmental performance is increasingly important for companies especially in certain industry sectors with recognisable environmental impacts. Environmental reporting is increasingly used to communicate information on environmental performance to stakeholders. Specific industrial activities e.g. those subject to Integrated Pollution and Prevention Control (IPPC) licences have legal reporting obligations e.g. Annual Environmental Reports. Outside of these more and more companies are including environmental performance in their annual reports or producing separate reports. The Global Reporting Initiative defines useful guidance on the content of environmental reports. See

<http://www.globalreporting.org/> for further information.

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## 5.0 PRACTICAL SUPPORTS AND INFORMATION SOURCES:

Information and some financial supports are available for improving the environmental performance of your business. Financial support is available from the following sources:-

- Environmental Protection Agency through their Cleaner Greener Production Programme [http://www.epa.ie/r\\_d/default.htm](http://www.epa.ie/r_d/default.htm)
- Enterprise Ireland  
<http://www.envirocentre.ie/global/site/envirocentre.asp?id=9>
- EU LIFE programme  
<http://www.environ.ie/DOEI/DOEIPub.nsf/enSearchView/C3948772C38EEF4680256D48003C8780?OpenDocument&Lang=en>

Click on the links below for further information sources on Environmental Management approaches to improving the environmental performance of your business.

### **Clean Technology Centre, Cork**

<http://www.ctc-cork.ie/>

### **EPA Cleaner Greener Production Programme previous projects**

<http://www.ctc-cork.ie/cgpp/>

### **European Integrated Pollution Prevention & Control Bureau**

<http://eippcb.jrc.es/>

### **International Network for Environmental Management**

<http://www.inem.org/>

### **Sustainable Energy Ireland**

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

### **United Nations Environmental Programme Cleaner Production initiative**

<http://www.unep.ie.org/pc/cp7/>

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**APPENDED CHECKLIST**

LIFECYCLE	ISSUES TO CONSIDER
<p><b>Design of products and services to be provided</b></p>	<p>Integrate environmental considerations into the design of your products and services in order to prevent or minimise their environmental impact while still meeting the required functionality.</p> <p>For product manufacturers, consider options e.g. leasing or renting products instead of direct sales and/or provision of product repair, upgrade or end of life recovery services. These options can have environmental and commercial benefits.</p>
<p><b>Raw Materials</b></p>	<p>Substitute hazardous materials with non hazardous alternatives e.g. water based vs. solvent based chemicals.</p> <p>Design products to have an extended working life instead of built-in obsolescence. This reduces waste. Use modular designs, upgradeable for new technology which can be repaired and maintained.</p> <p>Chose raw materials &amp; a design to facilitate eventual end of life disassembly, recovery, reuse or recycling.</p> <p>Choose renewable resources over non renewable resources (e.g. fossil fuels, metals, certain types of timber) where possible. Choose timber from sustainably managed sources e.g. those with Forestry Stewardship Council (FSC certification)</p> <p>Reduce the volume of raw materials used.</p> <p>Reduce use of utilities e.g. water and energy.</p> <p>Consider the impacts of raw material extraction when choosing raw materials e.g. metals, minerals, timber. Aim to choose those with a reduced impact.</p>
<p><b>Raw materials (Packaging)</b></p>	<p>Eliminate packaging where possible. For business customers eliminating packaging can be a cost saving to your customer.</p> <p>Use a packaging design and raw materials to minimise the layers of packaging required while still meeting the functionality required.</p> <p>Use one type of packaging material as distinct from mixtures as this facilitates collection of waste packaging for reuse, recycling or disposal</p>



	<p>Use reusable, returnable containers vs. one use disposal.</p> <p>Use bulk containers vs. portable</p> <p>Consider biodegradable packaging materials where long life packaging is not required e.g. food.</p>
<b>Production Process</b>	<p>Design production process to eliminate / minimise waste generation; noise; emissions to air and water.</p> <p>Use utilities e.g. energy and water as efficiently as possible. For high water users recover water for reuse.</p> <p>Use specific Cleaner Production technologies relevant to your industry sector (See BAT Refs or BATNEEC Guidance Notes for specific technologies per sector).</p> <p>Recover production waste for reuse as raw materials where feasible e.g. reuse of solvents.</p> <p>Where wastes cannot be reused on site, segregate &amp; collect for recycling or disposal.</p> <p>Only use waste contractors for collection, recovery or disposal with appropriate licenses or permits</p> <p>Maintain records of waste generated, collection and proof of final recovery or disposal.</p> <p>Monitor your emissions to air and water and the generation of noise at regular intervals based on legal obligations.</p>
<b>Distribution</b>	<p>Design storage, distribution and transport to prevent and minimise environmental impacts.</p> <p>Minimise fuel usage and emissions to air by optimising transport.</p>
<b>Use</b>	<p>Prevent or minimise adverse environmental impacts when a product is in use e.g. minimise energy usage of electronics goods.</p>
<b>End of Life</b>	<p>Minimise environmental impacts of products at their end of life by designing products with an extended product life and facilitate their disassembly, reuse and recycling at eventual end of life.</p>