

**Race against  
Waste**

**WORK**

**ACTION AT**

**A guide for large  
organisations to  
reduce, reuse and  
recycle**

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**Dick Roche, TD**  
Minister for the Environment,  
Heritage & Local Government

## Welcome to the Race Against Waste

**Congratulations on joining the Race Against Waste. Our aim with this programme is to help your organisation to reduce, reuse and recycle with the ultimate aim of meeting environmental objectives and minimising your waste disposal costs.**

Waste management is one of the most problematic and challenging environmental issues we face in Ireland today with the growth in consumption leading to increased levels of waste in the workplace and at home.

While the obvious way of overcoming this problem is to produce less waste, many organisations do not know where to start or get stalled half-way through the process. Action at Work has been developed by the Department of the Environment, Heritage & Local Government, in consultation with 26 public and private sector organisations, to show you how to take the first steps in addressing waste in your organisation or to improve what you are already doing. Indeed, there are a number of excellent case studies throughout the document from some of the stakeholders with whom we have consulted to show you how they are implementing reduce and recycle practices in their organisations.

This guide will explain how to

- set up a team to develop a waste management programme;
- identify the types and amounts of waste produced;
- deal with a waste contractor;
- comply with legislation that might be relevant to your organisation.

There are plenty of practical tips on how to reduce and minimise the amount of waste your organisation produces. There are also case studies of organisations that have successfully implemented a waste management strategy.

The flow diagram overleaf gives an overview of the overall process of developing Action at Work in your workplace.

In addition to this guide, Action at Work includes

- a CD-ROM containing a PowerPoint training presentation for you to deliver to staff along with all the relevant legislation;
- leaflets for staff and the public explaining what being in the Race Against Waste means for your organisation;
- a series of sector specific seminars around the country where organisations can receive further practical advice and support, including a demonstration on how to use this guide and a clinic for participants to ask specific waste management questions;
- posters to remind and inform people how to separate their waste;
- an information phone line, 1890-667639;
- a website, [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie).

We all need to reduce, reuse and recycle more items, more often at home and at work if we are to win the Race Against Waste.

You have taken a big step in helping Ireland to win the race by signing up to this programme and I wish you every success in implementing it. I look forward to seeing the results in reduced amounts of waste going to landfill.

**Dick Roche, TD**  
Minister for the Environment, Heritage & Local Government

February 2005

# How to use this Guide

## Option 1

### Get management approval

(See Section 2 on how to get management approval)

### Set up Environmental Team

(See Section 3 on how to set up your Environmental Team)

### Carry out Preliminary Review

(See Section 4 on how to carry out a preliminary review)

### Report back to management and Environmental Team with results of preliminary review

(See Section 4 for sample report on preliminary review)

## Option 2

### Set up Environmental Team

(See section 3 on how to set up your Environmental Team)

### Carry out Preliminary Review

(See Section 4 on how to carry out a preliminary review)

### Report back to management and Environmental Team with results of preliminary review

(See Section 4 for sample report on preliminary review)

### Get management buy-in

(See Section 2)

Carry out detailed waste review / audit - see Section 4 for details

Assess knowledge base of staff - see Section 6 for details

Report back to Environmental Team with results on detailed waste review / audit and assessment of knowledge base of staff - see Section 3 on meeting 2 with Environmental Team

Check out the relevant legislation on the attached CD or online at [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie)

Check out the tips on how to Reduce, Reuse and Recycle throughout this guide. Also pay attention to the specific information for various waste streams in Section 11 of this guide

Set up your Plan of Action - see Section 5 for details and Section 10 for blank worksheets

Communicate your Plan of Action to your staff and Make That Change! See Section 6 on Communicating with Staff

Section 9 provides useful contacts for various organisations that may be of assistance to you

If you need more information or help contact Race Against Waste at [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie) or LoCall 1890 667639

**WHY**

do we need  
to reduce, reuse  
and recycle?

## Learn about why we need to reduce, reuse and recycle; what is the Waste Hierarchy; Irish and European waste management strategy and policy

### 1. WHY RACE AGAINST WASTE?

Waste issues are becoming increasingly significant to organisations these days. Three key areas forcing organisations to address waste management include:

- Economic Motivation
- Environmental Impact
- Compliance Requirement.

#### Economic Motivation

The cost of waste disposal has significantly increased in recent times. Factors responsible for the increasing cost of waste disposal include

- lack of landfill capacity;
- increasing costs of waste disposal due to the higher environmental standards now being applied to landfills sites.

It is unrealistic to expect waste disposal costs for your organisation to decline if current practices with regard to waste management continue. Thus, there is a strong incentive for all who produce waste to minimise it by reducing, reusing and recycling.

#### Environmental Impact

Waste should be managed responsibly because:

- materials that are limited in supply should be treated with care to ensure that valuable resources are not exhausted;
- landfilling is unsustainable - we can not continue to bury the problem.

All waste management options (from recycling to landfill), impact on the environment.

There is increased public concern about environmental and health impacts of landfills and incinerators. The European Landfill Directive limits or bans the disposal to landfill of certain waste and that of some organic waste, yet the volume of waste we generate in our homes and places of work is continuing to increase. Minimising the production of waste in the first place is the only way of ensuring there is no environmental impact.

#### Compliance Requirement

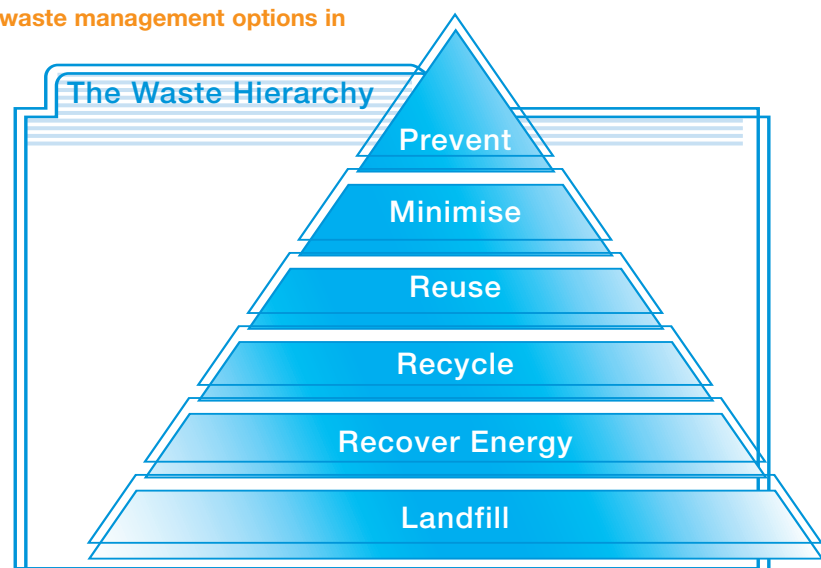
Since the mid 1990s, Ireland has introduced a range of policy and legislative changes in order to modernise all aspects of our waste management. Legislation places responsibilities on all parties to deal with their waste in a responsible manner. Leaving aside cost issues, fines and other enforcement procedures – for lack of compliance – mean that organisations must take waste management seriously.

### 2. WASTE MANAGEMENT HIERARCHY

A core principle of waste management is the Waste Management Hierarchy (see fig. below). The hierarchy prioritises waste management options in terms of environmental impact and is the guiding principle for waste management throughout the EU, thus ensuring that preventing, reducing and recycling waste is the priority. This ensures that as much waste as possible is dealt with at the higher levels of the hierarchy.

Since all waste options have some impact on the environment, the only way to avoid impact is not to produce the waste in the first place.

Waste prevention is, therefore, at the top of the Waste Management Hierarchy, followed by reduction, re-use and recycling. Composting and generating energy from waste are next in the hierarchy, while disposal to landfill is at the bottom.



### 3. DEALING WITH WASTE IN IRELAND

#### Looking Back

Waste management is one of the most problematic and challenging environmental issues we face in Ireland today. The problem has increased through time as humans and societies have become more prosperous and sophisticated. As populations have grown and lifestyles have changed, the issue has become increasingly complex. A growth in global consumption has led to increased levels of waste in Ireland, as elsewhere.

Historically Ireland had no proper waste management planning, as waste was the last significant area of environmental management subjected to modern policy and legislation. Traditionally, waste was a local authority function with little involvement from national government. While unprecedented economic growth during the 1990s was one of the causes of increased waste volumes, a lack of awareness that individuals should take responsibility for their own waste is also relevant.

By the mid-1990s, it was apparent that there was a serious gap between waste infrastructure and waste planning. Small scale, poorly managed landfills were the principal form of disposal. There were limited recycling facilities, no biological treatment and no energy recovery plants. Clearly things had to change.

These figures highlight the continuing pressure our society is placing on our environment - a state of affairs that cannot continue indefinitely. One compelling reason is that landfill capacity will run out in ten years. Clearly, drastic changes must be made in order to meet targets outlined in national policy and in the Regional Waste Management Plans.

Category of Municipal Waste	1998	2001	2002	2003
Household Waste	1,220,856	1,468,834	1,528,314	1,596,501
Commercial Waste	754,797	1,156,732	1,129,852	1,332,735
Street Cleaning Waste	80,999	78,469	65,753	71,779
<b>Total Municipal Waste</b>	<b>2,056,652</b>	<b>2,704,035</b>	<b>2,723,739</b>	<b>3,001,016</b>

Source: EPA 2003

#### Beginnings of Modern Waste Management Policy

The adoption of the Waste Management Act in 1996 was a major turning point for waste management in Ireland. This provided a starting point for the modernisation of all aspects of our waste management. The adoption of the Regional Waste Management Plans provided for a new integrated approach to waste management with targets for implementation and for new measures for sustainable waste management infrastructure.

Today the Waste Management Plans are in place and implementation is well underway.

Progress has been made over the last number of years towards increasing the amount of municipal (household and commercial) waste being recycled with the recycling rate going from 13.3% in 2001 up to 28.4% in 2003. However, despite this, latest figures indicate that quantities of waste are still significantly increasing.

The following table highlights how quantities of municipal waste have steadily increased between 1998 and 2003:

### 4. IRISH WASTE MANAGEMENT STRATEGY AND POLICY

**In Ireland, the aim is to develop a fully integrated waste management system through the implementation of our Regional Waste Management Plans. Broadly, the objective is to achieve 40% recycling, 40% thermal treatment and 20% disposal to landfill.**

#### Waste Management - Changing Our Ways

Changing Our Ways provides a national policy framework for the implementation by local authorities of waste management plans under which national targets would then be met.

The document outlines the government's policy objectives in relation to waste management and suggests some key issues which must be addressed to achieve these objectives. In particular, it recognises the hierarchy of waste options as the best framework in which to pursue solutions to waste management. The integrated hierarchy combines progressive policies with a sustainable and cost effective waste infrastructure.

#### Preventing and Recycling Waste - Delivering Change

The policy statement Preventing and Recycling Waste - Delivering Change, published in 2002, aims to look at practical ways to achieve government policy for the

prevention, re-use and recycling of waste. It evolved from Changing Our Ways, is grounded in the same principles and supports the objective of moving from landfill as a majority solution.

#### Waste Management, Taking Stock and Moving Forward

Waste Management, Taking Stock and Moving Forward, published in 2004, reports on the progress Ireland is making with regard to waste management. The statement also affirmed the waste management hierarchy of prevention, minimisation, reduction, reuse and recycling, which should be followed in order to manage our waste in a more sustainable fashion.

The three documents collectively combine to provide an inclusive policy framework for the modernisation of Irish waste management.

See accompanying CD or [www.raceagainstawaste.ie](http://www.raceagainstawaste.ie) for more detail on Waste Policy and Legislation.

## 5. WHO IS RESPONSIBLE FOR WASTE IN IRELAND?

We are all, from the individual up to central government, responsible for waste and waste disposal in Ireland.

### Department of the Environment, Heritage and Local Government

The Department of the Environment, Heritage and Local Government is responsible for overall policy provision for waste management. Specifically, the Minister for the Environment, Heritage and Local Government is responsible for issuing policy direction and delivering regulations in relation to waste prevention and recovery. All waste policy in Ireland issued by the Department of the Environment, Heritage and Local Government must comply with EU waste management and environmental policy and legislation.

### Local Authorities

Local authorities have ultimate authority for waste management planning in their area. The Waste Management Act 1996, gave local authorities powers and responsibilities in relation to waste management. These responsibilities include:

- Enforcing the Waste Management Act 1996 and associated regulations.
- Making/reviewing Regional Waste Management Plans for non-hazardous waste.
- Providing waste collection, recovery and disposal arrangements for their functional area, principally for domestic (household) waste.
- Controlling/authorising commercial waste activities.
- Authorising waste exports.
- Monitoring hazardous waste movements.
- Permitting small-scale recovery and disposal.
- General monitoring/enforcement of waste activities.

### Environmental Protection Agency

The Environmental Protection Agency (EPA) is an independent public body with a wide range of environmental functions. It was established under the Environmental Protection Agency Act, 1992. The EPA is managed by an Executive Board and an

Advisory Committee. Both directors and staff must adhere to a Code of Business Conduct which sets out principles and standards governing daily duties. The legislation provides that the EPA can make decisions independently.

Under the Waste Management Act 1996, the EPA is responsible for:

- Compiling and reviewing the National Hazardous Waste Management Plan and the National Waste Database.
- Licensing major waste facilities and enforcing the terms of the licence granted.
- Authorising waste imports.
- Developing procedures and criteria for waste management processes.

In addition, the Agency's Office of Environmental Enforcement has a broad remit in terms of ensuring better enforcement of environmental legislation, which includes waste enforcement activities carried out by local authorities.

### Waste Management Contractors

Private waste contractors have become increasingly important to waste management in Ireland, as waste collection systems have been privatised across many parts of the country. Private contractors cover a very wide range of activities such as collection, recycling, recovery, treatment and disposal. They deal with waste in both rural and urban areas and from both the private and public sectors. When choosing a waste contractor it is important to ensure that they have the relevant permits and licenses to allow them to collect and deal with your waste.

### You and me

Just over 2.9 million tonnes of household and commercial waste were produced in Ireland in 2003. Waste is an issue for everybody and everybody must take responsibility for our waste problem. While the above bodies play a role in achieving our waste targets, each individual must play their part to reduce the amount of waste produced in Ireland, by reducing, reusing and recycling. We all must join the Race Against Waste.

## HELPFUL HINTS

### How can I RECYCLE my waste?

Recycle glass bottles and jars, cans, cardboard and paper.

- Recycle all paper including envelopes, invoices, faxes, junk mail, magazines, telephone books and catalogues, according to your recycling service provider's specifications.
- Recycle packaging materials: cardboard, chipboard, bags, plastics.
- Recycle office cleaning products, where possible.
- Recycle food/drink containers.





## 6. EUROPEAN WASTE STRATEGY

### Integrated Waste Management

While we in Ireland were lagging behind, other European countries were developing and implementing sustainable integrated waste management practices. These practices use a combination of waste solutions and have achieved high levels of recycling.

EU Directives 75/442/EEC (as revised by Directive 91/156/EEC) and 91/689/EEC provide the overall structure for an effective waste management regime within the EU. The European Commission set out a waste policy, the European Community Strategy for Waste Management 1989. This document formed the cornerstone for European waste policy and established a hierarchy for waste management.

### Polluter Pays Principle

The Polluter Pays principle is a central environmental principle, which stems from European policy. This principle means that every individual/family/organisation is responsible for the costs associated with the environmental impacts caused by his/her activities. The Waste Management Act 1996 is based on the Polluter Pays principle and states that those who produce waste should be responsible for the costs associated with its disposal.

### Proximity Principle

The European Commission's strategy also confirms the Proximity Principle - to minimise environmental impact, waste must be dealt with as close to its source as possible. This principle also informs Ireland's national waste policy.

## OTHER INTERNATIONAL STRATEGIES

### Waste Management in Other European Countries

The overall aim of EU waste management policy is ultimately prevention and minimisation of waste. Member states take appropriate steps to implement the EU waste hierarchy, which outlines the different options for dealing with waste. However, in spite of the common acceptance and awareness of the current unsustainable pattern of waste generation, waste quantities are steadily increasing in Europe. The overall situation in Europe is summarised in the table below.

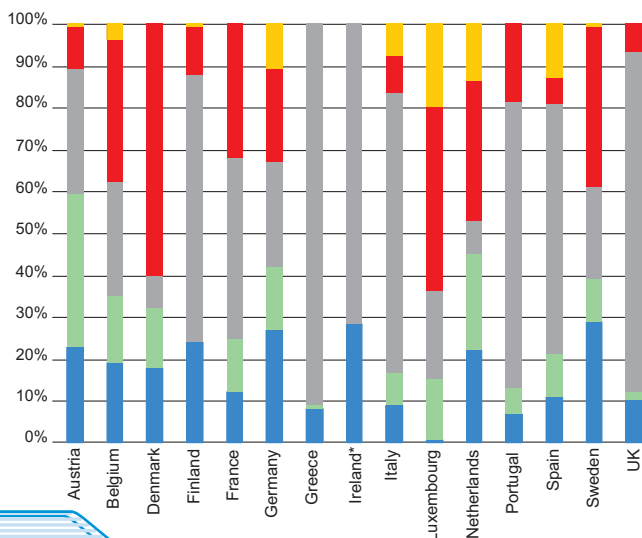
A major challenge faced across Europe is the growth in waste generation, which puts pressure on waste treatment facilities and makes it more difficult to increase recycling rates and reduce landfill. In general, most European countries are utilising incineration to some extent, although landfill is the primary disposal option for much of the EU.

In 1995, 67% of municipal waste was landfilled in EEA member countries; however - as can be seen from the diagram - landfill rates vary between countries. A number of countries have introduced taxes on landfilling of waste to encourage waste minimisation and to motivate people to recycle.

Another recent European trend is that of producer responsibility. This delegates responsibility for an increasing part of waste collection and treatment to the producers and gives them the organisational and economic responsibility for a particular waste stream.

The Directive on Waste Electrical and Electronic Equipment (WEEE) aims to prevent and minimise the amount of WEEE produced and to maximise the amount that is reused, recycled and recovered. This is likely to involve the establishment of a separate collection network for WEEE e.g. bring centres for households to deliver WEEE free of charge and ensure that the cost of collection, treatment, recovery and environmentally sound disposal of WEEE is provided for by the producers.

**TREATMENT OF MUNICIPAL WASTE IN EUROPE**



Source: (Energy, Transport and Environment Indicators 2004 Edition, Office for Official Publications for the European Community, 2004)  
 Figures for Ireland are for 2003 (From EPA 2003)

## CASE STUDY

### **GOVERNMENT DEPARTMENT REUSING AND RECYCLING IT EQUIPMENT** **THE DEPARTMENT OF THE ENVIRONMENT, HERITAGE & LOCAL GOVERNMENT**

In keeping with the European Waste Management hierarchy the Department of the Environment, Heritage & Local Government aims to firstly reuse obsolete IT equipment, with the leftover equipment being removed for recycling.

A company called SWITCH is engaged to take away PCs (Pentium III or better) for reuse and at no charge to the Department. The PCs are reused mainly by people who couldn't otherwise have a PC. As the Department's licensing arrangements restrict the use of all software packages to the Department (other than Windows operating system), the company's technicians have to clean all the hard drives under Department supervision before taking them away. This process is also necessary in order to remove confidential data. The technicians subsequently prepare the PCs for reuse, which mainly involves installing Windows operating system and various software packages. SWITCH does not take away printers or monitors.

SWITCH is a partnership between the Public, Private and Community sectors in the Greater Dublin area. The Public sector comprises Dublin City Council, Dun Laoghaire-Rathdown County Council and Fingal County Council.

From time to time equipment has also been donated to schools and charities for reuse. In this case of PCs, software packages had to be removed first.

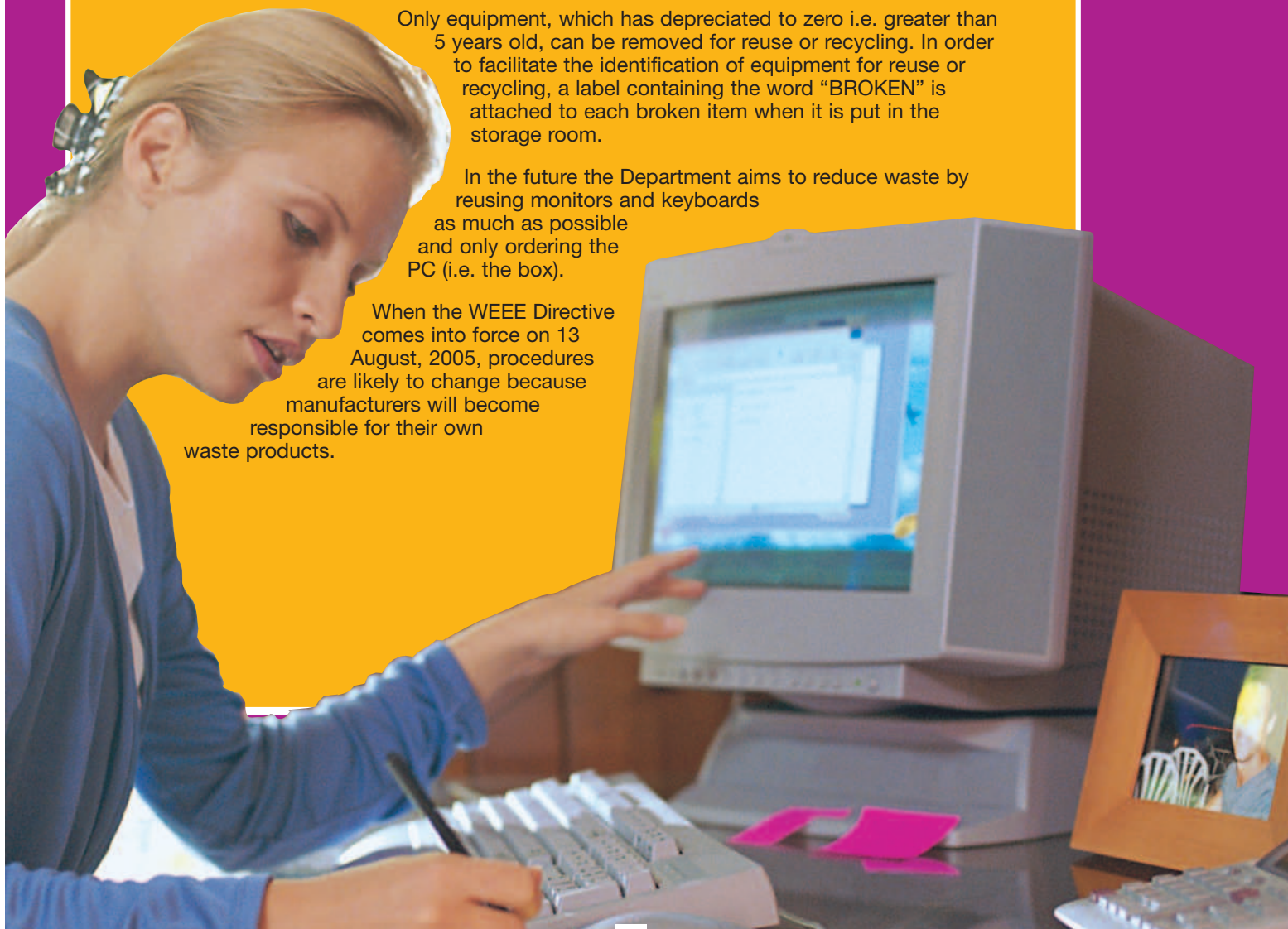
All broken and obsolete equipment, which is not reusable, is removed by a contractor for recycling. A request for tenders is issued once a year. When evaluating tenders, care has to be taken to see what degree of recycling is involved by each company.

The current contractor will not charge for 17" monitors from 2005 onwards because they will be getting 4 for each cathode ray tube from another company.

Only equipment, which has depreciated to zero i.e. greater than 5 years old, can be removed for reuse or recycling. In order to facilitate the identification of equipment for reuse or recycling, a label containing the word "BROKEN" is attached to each broken item when it is put in the storage room.

In the future the Department aims to reduce waste by reusing monitors and keyboards as much as possible and only ordering the PC (i.e. the box).

When the WEEE Directive comes into force on 13 August, 2005, procedures are likely to change because manufacturers will become responsible for their own waste products.



Getting Started

# HOW

to get  
management  
support...

# Learn how to get management support, select an in-house Waste Management Co-ordinator and draw up an Environmental Charter

### 1. YOU CAN DO IT

You may be reading this guide if you are:

- A manager in charge of an organisation;
- An individual/team who has been allocated to deal with environmental issues;
- Head of a department.

As an organisation you may feel daunted at the prospect of managing your waste. However, it is a problem with a solution. It can be tackled with a waste management programme and this guide offers support at every stage.

### Waste management is a problem that can be solved

By implementing a waste management plan at work you will be able to solve your waste problems. It will support you in analysing your current situation and guide you through making the necessary changes towards better waste management practice. When implemented, you will see your waste volumes reduce significantly. Once it's up and running and the benefits are seen, Action at Work should be quite easy to maintain and:

- you will become compliant with your legal obligations;
- you will minimise the impact of your waste on the environment;
- you should be able to make some cost savings.

### Waste management is not rocket science

Joining the Race Against Waste is not rocket science. This guide will take you through all the steps needed.

Joining the Race Against Waste is about making small changes. Even a few changes to your current practice can make a big difference. The biggest challenge may be to get others to join in - and we also offer help with this. Once you have gained the support of others in your workplace, the sorting and recycling of waste is straightforward.

### Support is available

Don't try and do it all alone. Support is available. This guide will show you

- how to get started;
- how to involve your colleagues/get support from senior management;
- how to carry out a waste review/audit;
- how to start Action at Work.

In addition, this guide will offer advice on communicating with staff, procurement, practical waste management information, tips on how to deal with your waste contractor and explain the relevant legislation. Section 9 tells you where to find further information, should you need it.

This guide is backed up by a number of sectoral and cross-sectoral seminars around the country. These seminars will introduce the guide, provide a Q&A session with waste experts and be an opportunity for participants to learn from others in their sector/locality who may have already made some headway in dealing with their waste management problem.

The Race Against Waste website, [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie), contains much useful information and is a good starting point to familiarise yourself and colleagues with the waste situation in Ireland. The 'Learn' section has lots of useful facts and figures relating to the waste we produce in Ireland today as well as what happens to it.

You can download support materials like posters from the website. These 'fact' posters, 'reminder' posters and posters for your bins can be used around the workplace to encourage better waste practice and awareness.

All of these ideas and guidelines should help encourage those in your workplace to think more about the waste they produce and how to change their ways.



## 2. SELECTING AN IN-HOUSE WASTE MANAGEMENT CO-ORDINATOR

Selecting an organised, creative person to become the Waste Management Co-ordinator is paramount to the success of this programme. Consider someone who is interested in environmental matters and (ideally but not necessarily) has some knowledge about waste management and recycling. The Co-ordinator should be someone who is

- enthusiastic,
- communicates well with co-workers,
- available to dedicate the time to establish an effective action plan.

### Getting approval from above

Approval from senior management is necessary for the success of an in-house waste management programme. When management initiate and promote the programme, employees are more likely to feel empowered and become involved. Issuing an organisational environmental policy statement is one way for management to show commitment to the Race Against Waste.

### How to gain management support

The following initial steps will help to start the process:

- Do your homework with the help of this guide.
- Make a few small changes yourself with the backing of some others and assess their success.
- Approach senior management with all the relevant information at hand and be familiar with it.
- Demonstrate the success of the small steps you've taken already.
- Use this as a tool to convince management that even better things can be done on a larger scale and get the go-ahead to proceed in an agreed manner.

At this stage you may suggest or be asked to carry out a preliminary waste review so that you can present senior management with further facts and figures in relation to waste management in your organisation. (See Section 4 for details on how to carry out a Preliminary Review).

For senior management to take on board your suggestions for better waste management, they need to know why. The following section outlines the reasons why better waste management is essential. Use these points to convince management of the worth of your case.

### Making the case for better waste management

There are four good reasons today why organisations are becoming increasingly involved in managing their waste.

- Financial Savings
- Legal Obligations
- Environment
- Public Relations.

### Financial Savings

Joining the Race Against Waste has huge potential for savings.

Over time, waste reduction projects can save money, offsetting the cost of project development and implementation. The cost savings may be immediate or anticipated, based on avoiding future costs. Lower operating costs can result from lower disposal costs, reduced materials costs and improved operating efficiency. (Using both sides of a piece of paper, for example, could cut your paper purchase and disposal costs in half).

In the long term, if your reliance on landfill continues, your waste disposal costs will not decrease, so there is a strong economic incentive for your organisation to reduce the amount of waste you generate.

### Legal Obligations

There are several pieces of legislation that deal with waste management and these are available on the accompanying CD or online. The most significant effect of this legislation is that the creators of waste are ultimately responsible for its disposal. This is in keeping with the EU Polluter Pays principle. So you need to know and be able to document where your waste is going - be it landfill, composting, incineration or recycling.

Compliance with such legislation needs to be an essential part of your organisation's waste management policy.

If you use hazardous or toxic materials, you carry greater liability risks - and responsibilities. An organisation causing environmental damage because a failed disposal system allows materials to enter the environment could be liable for stiff fines and / or criminal penalties. The embarrassment of such bad publicity has already been felt by several organisations in Ireland. Some materials not currently regarded as hazardous may be so in the future so it is essential to continually update yourself on the current legislation.

### Environmental

The less waste for disposal, the less the environmental damage caused. Some items for disposal are made of materials in limited supply, so should be treated with care to ensure that valuable resources are not squandered. For this reason the emphasis of national waste management policy is on reducing the amount of waste being produced and keeping materials in circulation for as long as possible.

### Good Public Relations

Finally, good waste management is good for business. They say there is no such thing as bad publicity, however illegal dumping, lack of compliance leading to public reports of fines and prosecution is not desirable. On the other hand, you can promote yourself to good effect with customers, clients, staff, the public and suppliers as an organisation doing as much as you can for the environment.

### 3. YOUR ENVIRONMENTAL CHARTER

**Your Environmental Charter is your organisation's statement of broad principles and intentions in relation to the environment. It demonstrates your organisation's commitment to reducing its impact on the environment and provides a framework for a practical statement of environment policy. If you have an existing Charter, you may wish to add a section dealing specifically with waste.**

Since many organisations already have, or are considering the development of, a sustainable environmental policy, it is vital to include waste management as a section within this wider policy. This will help emphasise the central importance of good waste management in the overall environmental practice of the organisation. In addition to this, a more detailed waste policy is useful to focus more closely on specific areas which need to be addressed. The exact content of the policy will depend on the needs of individual organisations. Some general issues are listed below as a guideline. It may be useful to also carry out a web search for 'environmental charter' to examine charters from organisations similar to your own.

Your environmental charter should at least address the following:

- Comply with waste management legislation - or better.
- Reduce the quantity of waste generated.
- Reduce environmental impact of waste disposal through re-use, recycling and composting.
- Ensure the safe handling of waste on site and safe disposal of hazardous wastes.

- Provision of appropriate training for staff on waste management issues.
- Generation of awareness among visitors/students/members of the public who may be on site.

When writing your environmental charter it is important to ensure that...

- It is relevant to your organisation and not just a generic statement of environmental goodwill.
- It is meaningful and realistic; environmental charters are not just there for the sake of it - they are an overall goal to be aimed for and a framework within which smaller targets can be achieved.
- It is achievable within a realistic time frame. In this way it is real for your workers and colleagues and not just something that may or may not be achieved sometime in the future.
- It is confined to broad statements of principle rather than detailed commitments - remember this is a framework document.
- It is consistent with other policies and charters, for example your health and safety policy.

### HELPFUL HINTS

#### How can I REUSE my waste?

- Set up a draft paper drawer in your printer to print draft documents on the back of slightly used paper.
- Convert scrap paper into memo pads.
- Save and reuse inter-office envelopes, file folders and boxes.
- Use reusable mailing pouches.
- Reuse shredded newspaper / paper for packaging.
- Repair old or unused office furniture and equipment or donate it to charity.
- Give old magazines to libraries, hospitals or nursing homes.
- Use reusable memo boards for messages.
- Refill laser printer, copier and fax toner cartridges.
- Reuse ring binders, paper clips, rubberbands.
- Distribute and use ceramic mugs eliminating the need for polystyrene or plastic cups.
- Reuse incoming boxes for outgoing deliveries.

With a little help from your friends

# HOW

to get staff  
buy-in

## Learn how to get staff buy-in through forming an Environmental Team

### 1. FORMING AN ENVIRONMENTAL TEAM

- **Joining the Race Against Waste will take a certain amount of organisation. The best way to co-ordinate your organisational effort is to assemble a team.**
- **By forming a team, various different departments within your organisation can be represented and kept informed as to what is going on, thus facilitating communication and co-ordination.**
- **Larger organisations will have more to do to organise and implement their recycling and waste reduction programme. Sharing the duties among an Environmental Team will reduce the workload per person and create a better team atmosphere.**

#### Team Members

There is no strict model for a team and each organisation should figure out a structure and schedule to suit themselves. However, it is important that each Environmental Team has a co-ordinator. It will be the duty of the co-ordinator to ensure that team meetings are run efficiently and actions are carried out as planned.

In choosing Environmental Team members it would be helpful to achieve a good departmental spread. Ideally members should represent a complete link from purchasing through to disposal so that all aspects of the waste stream are looked at.

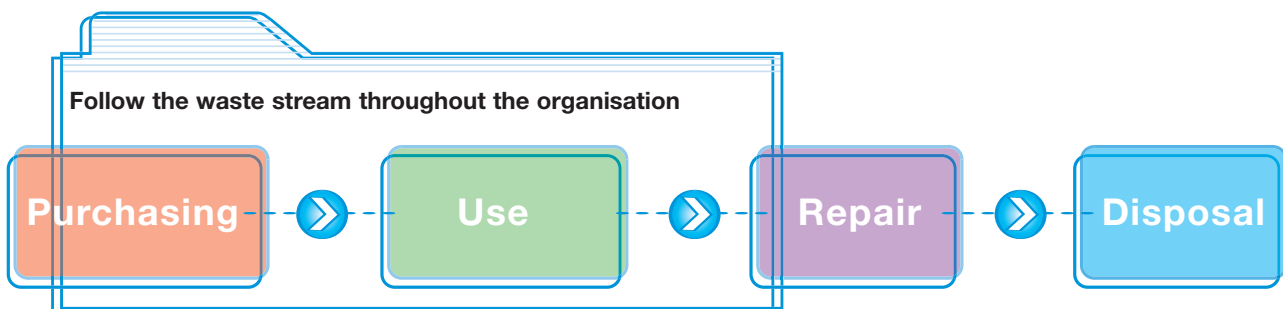
If possible, managers from all sectors, but especially those most directly involved with the waste stream, i.e. purchasers, facilities, maintenance, canteen, cleaning, should be involved. This would give an inclusive approach when designing and managing your action plan as the team will, between them, have first-hand knowledge of waste arising and current waste management practice in the workplace.

Once your Action at Work plan has been implemented, a broadly based team means there are representatives in each relevant area to keep an eye on how things are going and to report back with progress and/or problems arising.

As well as those who have an input into the waste generated, it helps to have others on board who are interested.

Although there may be quite a variety in the structure of different teams, there are still some important things to think about when putting your team together. These measures should help the team work well together and be more successful.

The more staff involved (within reason) the higher the awareness of the Race Against Waste within your workplace. The broader the base of support and enthusiasm, the greater your chances will be of co-operation and success.



### 2. UNDERSTAND THE KEY TO A SUCCESSFUL TEAM

**Once you have assembled an Environmental Team, you will need to establish what is its role. Below are some general guidelines.**

The Race Against Waste Environmental Team's main responsibilities could include

- **Assessing the current waste situation.**
- **Procurement of a waste contractor, if this has not already been done.**
- **Examining opportunities to prevent waste by purchasing reusable, durable and repairable equipment and supplies.**
- **Setting up a collection bin system in common work areas.**
- **Locating storage areas and developing a system for moving materials to storage areas.**
- **Networking with other businesses and local government staff, attending training and seminars on waste management wherever possible, and subscribing to waste management publications.**

- **Monitoring, evaluating and changing the management system as needed.**
- **Promoting the Race Against Waste in the workplace.**

To formalise this, the team should draw up terms of reference, which will be of great help down the line if any of the personnel change. Each team member should be assigned certain duties and responsibilities and everybody should be clear as to who is doing what.

For larger organisations, it is a good idea to break the team up into sub-groups, with each of them working on a particular area. Once this is done you will need to find out what authority and budget the team will have. In doing this you should also determine a reporting structure, especially in terms of authority. You also need to decide what to do if a department/individual isn't doing their share and so compromising the efforts of others.



### 3. ENVIRONMENTAL TEAM MEETINGS

The following are some suggestions of what you might include in your team meetings. It is important to remember that these are general meeting guides and you may wish to vary the meetings, depending on the size of your organisation or on how advanced your organisation is with regard to waste management.

#### First Environmental Team Meeting

It is a good idea to invite senior management along to your first meeting. Keeping them informed about what is going on will make things work more smoothly.

A possible format for the first team meeting is to start with two presentations, one general, and the other more specific.

The first presentation could introduce the team members to general waste issues. This will include

- an overview of the waste situation in Ireland today;
- different waste streams and the various recycling and disposal methods currently in use.

There is a template PowerPoint Presentation on the accompanying CD or on [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie), which you can download and use. You may wish to edit it slightly, perhaps to include your organisation's logo or details of waste issues / facilities in your locality.

The second presentation could be more specific to your organisation.

- It should highlight the activities within your organisation that produce waste.
- It should explain what is currently being done with the waste produced and any recycling or other initiatives already in place.

This will allow everyone to become familiar with the starting point against which progress in waste reduction can be measured.

Again, there is a template available on the CD or on [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie) to download and use. This template will need to be edited somewhat more than the first presentation to reflect your organisation, but the basic structure and layout should be helpful. There is also help available by contacting the Race Against Waste hotline on 1890-667639. Once the two presentations have been made, the waste review / audit will need to be discussed. A waste audit is a detailed examination of the type and amounts of waste that your organisation produces. A plan needs to be drawn up for the waste review / audit itself and a date for its completion should also be agreed on. **See Section 4 on how to carry out a waste review / audit.**

When you meet again will depend on what goals you have set yourselves and the time you have set yourselves to achieve them. Before closing the first team meeting, a date for a second meeting should be agreed. Ideally, this second meeting should take place quite soon. Frequent meetings may be helpful initially to set up your plan of action - then you can arrange to meet up less often.

#### Second Team Meeting

By this stage the waste review / audit should have been carried out. At this meeting one of the audit team should then present their findings by giving:

- a general description of waste streams throughout the organisation;
- a more detailed description of each waste stream, including where they were produced, the amounts produced, etc.

With the audit results in mind, you can start to put together a plan of action.

**See Sections 5 for how to set up your action plan.**

**See Section 11 for practical waste management information.**

Depending on the nature of your organisation and the efficiency with which the environmental team is up and running, it may be necessary to hold a number of smaller meetings to firm up issues. These may not necessarily involve the entire team, though it is important that everyone is kept informed of any changes or progress. This may also be a time to gather feedback and ideas about the Race Against Waste from members of staff who are not part of the environmental team. If necessary, this information could be gathered by team sub-groups in specific areas.

#### Third Team Meeting

At your third meeting, it could be helpful to review the initial progress made with each sub-group reporting back their findings. Some further recycling ideas may have come to light since your second meeting and these could be incorporated into the plan.

Indeed, the plan should at no stage be set in stone. It should be flexible and responsive to changes and new ideas. As you get going, you may even find that you can afford to increase your targets if things are going well. Many organisations have found that it is best to start off slowly, with realistic manageable targets, which can be broadened and deepened as confidence and competence grows.

By the end of your third team meeting, you should have your first version of the plan drawn up and approved by all. Changes after this point should only be minor, such as adjusting figures, and perhaps adding a few new recycling initiatives. The basic plan should now be ready to roll out and can be made easily available to all in your organisation - if possible at an easily accessible location such as on an Intranet site. See Section 6 on communicating with staff.

## CASE STUDY

### **DUNDALK IT SAVES AT LEAST €25,000 PER YEAR, THANKS TO WASTE MANAGEMENT PLAN DUNDALK IT**

The waste management programme in Dundalk IT began in September 2001. Staff and students were invited to get involved in the Waste and Environment Committee, which aimed to tackle the amount of waste produced in the College. After an analysis of the waste generated on campus it was decided to look first at ways of dealing with cardboard, as this was the most expensive item to dispose of. A baler was purchased and a contractor found who would collect baled cardboard for recycling, free of charge. Although this baler cost €8,000 to buy, it has more than paid for itself.

This led the Environmental Committee to look towards recycling paper and it was decided to start with areas that staff had control of, such as the photocopy rooms. Clearly labelled hoops with clear plastic bags were installed in all photocopy rooms and in the main computer rooms. Members of staff also have two bins in their offices, one of which is for paper. In addition the cleaning staff were approached on an individual basis and the importance of the segregation of the waste streams explained to them. Their cooperation was sought and was willingly given. Last year, a new communications campaign got underway in the college, in an effort to inform more students about the recycling bins. This primarily involved a poster campaign and new bins were provided in all common areas for the recycling of paper and cans, as well as for residual waste. One of the novel ideas in place is the reuse of floppy disks. Students are often required to submit course work on floppy disks and after a time the floppies are reformatted and given to a charity outside the college. At present, the college recycles paper, cardboard, glass, oil, fluorescent tubes, copper, steel, floppy disks and cans. Another of the Environmental committee's activities is the a large "Bonsai Woodland", in the main reception area of the college, to which Bonsai trees are added in celebration of the continuing success of the recycling initiative.

Staff are continually updated on progress through emails and announcements at staff meetings. A lot of great work has been done to date and it is now Institute policy to "continually improve our environmental performance". The committee is also looking into the possibility of recycling plastic bottles or even replacing drinks machines that dispense plastic bottles, with those that dispense cans. Through the implementation of a waste management plan, Dundalk IT is saving at least €25,000 per annum.

## CASE STUDY

### **BALING MACHINE HALVES IT TALLAGHT'S WEEKLY SKIP COLLECTIONS IT TALLAGHT**

In January 2004, IT Tallaght established an Environmental Committee. This was done as a partnership and included representatives of most departments in the college such as science technicians, mechanical engineering technicians, caretakers, students union, lecturers, administration and the estates department. The main objectives of the Environmental Committee are:

- To act as a focus for minimising the environmental impact of Institute of Technology activities.
- To promote the adoption of policies and procedures to achieve this.

Among the policies adopted by the Institute are:

- Commitment to the promotion of good environmental practice in all aspects of activities and services, and awareness of its environmental policies among all staff, students, contractors and visitors to the Institute.
- Commitment to using the principles of reduce, reuse and recycle in order to minimise damage to the environment.
- Commitment to ensuring that only authorised and licensed waste contractors are employed by the institute.

An informal waste audit was carried out, whereby the different waste streams were identified and segregation of the various streams began. A waste contractor was procured through a public tender and at present collects cardboard, paper, cans, glass and electrical equipment for recycling. This will be extended to include newspapers, magazines and plastic bottles.

Already by simply baling the cardboard produced by the Institute, the number of skip lifts per week has been cut in half. It is envisaged that the new waste contractor will start to weigh each of the different waste streams and this will provide something that future improvements can be measured against.

Waste review / audit

**HOW**

to establish what  
type/quantity of  
waste you  
produce

# Learn how to establish what type and quantity of waste your organisation generates

## INTRODUCTION

**Before you start making changes to the way waste is managed within your organisation, you need to get to grips with the type/amount of waste you are producing. This gives an important starting point. The following section gives step-by-step guidelines on how to carry out a waste review / audit. It is worthwhile undertaking a preliminary review to start the process and secure management support. This can be followed by a detailed review to provide the necessary information to draw up your action plan.**

### Report on Findings from Preliminary Waste Review

#### 1. Aim of Preliminary Waste Review

#### 2. How preliminary review was carried out

#### 3. Main Findings:

- Quantity of waste produced
- Types of waste streams present
- Current cost of waste management
- Current waste management practices
- People responsible for waste management

#### 4. Recommendations for further action

## Structure of Review

Before you begin the review (preliminary and detailed) you will need to decide on its structure. For large institutions, with many different departments or sections, it is often difficult to assess the waste produced. The following are some of the options:

- Department / faculty based
- Building based
- Waste stream i.e. municipal waste, hazardous waste, specialised waste...

## Preliminary Review

A preliminary review gives a quick indication of the amounts and types of waste, existing management practices and costs in your organisation. It is also an opportunity to flag up where possible problems lie and where money, time and resources are being wasted. You may need to carry out this preliminary review before you get management approval to make changes to your waste management practices. It will also give management a good idea of the extent of the problem and will help you win their support.

## What do you want from a Preliminary Review?

You need to get a general view of waste and resource management in your organisation. Try to answer the following questions:

- Approximately how much waste do you generate?
- Approximately what type of waste do you generate?
- How much is waste management costing your organisation at the moment (including man hours)?
- How is your waste being managed at present?

## Carrying out a Preliminary Review

A preliminary review will primarily be a desk exercise. You should not spend a huge amount of time or resources on it. The following points will help you gather the information

### • How much waste do you produce?

This information can be obtained from your current waste contractors. They should have all of your information recorded and will be able to tell you how much waste they are collecting from your facilities per year. They may be able to give a further breakdown, especially if they are servicing a few different buildings within your organisation. Remember, if you are already recycling some of your waste, be sure to contact the contractor providing this service to find out how much of your waste is being recycled. Remember too that this is a preliminary review, so you don't need to go into huge detail.

### • What type of waste do you produce?

Again talk to your contractors about this. They will be able to give you a rough idea. Also take a quick walk around your facility, particularly in buildings where there are large numbers of staff. A little observation will tell you a lot about the waste streams, (types of waste) being produced. Remember different activities produce different types of waste.

### • How much is waste management costing your organisation at the moment?

Your financial department will have records regarding payments to waste contractors. Try to collate the information for a year. This will give senior management food for thought! It is important to stress at this stage, however, that this is just the final cost for disposal / recycling. There are many hidden costs associated with resource and waste management, which should be examined during the full review.

### • How is your waste being managed at present?

You will probably already know the answer to this, but again it is worthwhile enquiring with your contractor. It is likely that the majority is going to landfill. Knowing how much is going to landfill will allow you to calculate what percentage, if any, is being recycled.

### • Who are the people responsible for waste management within the organisation?

From those who empty the bins to those who ensure legal compliance; you may be able to identify these people if you have already recruited your Environment Team and have a good cross section of the organisation represented.

If you have formed a team, this preliminary review can be a team effort. Or it may be that the preliminary review has been carried out with a view to forming a team to take this further. Either way you will need to report to senior management on the results from the preliminary review. Ideally, it will generate interest and provide the basis for carrying out a detailed review.

**Detailed Waste Review / Audit**

Once you have reported on the findings from your preliminary waste review / audit and received the go-ahead to proceed with your waste management programme, your next step is to undertake a detailed waste review / audit. At the same time, you should start to assess the level of awareness among staff in your organisation - see Section 6 for details.

**What is a Detailed Waste Review / Audit?**

As the name suggests a detailed review / audit will provide detailed information on the quantity and type of waste produced by your organisation. Before you proceed any further, you need to make a decision about whether the audit is to be done by existing staff or by a consultant waste management company or a combination of both. This will depend on a number of things:

- budget,
- staff availability,
- size of institution.

You should decide this as a team. There are advantages and disadvantages to each process. For example, you can use the information you received from the waste contractor at the preliminary review stage and combine this with your own review. The table below may help your decision on how to proceed.

Waste Review by Consultant	Waste Review - by existing staff
<b>Advantages</b>	
Can be done quickly and efficiently	More ownership of the process Cheaper
<b>Disadvantages</b>	
Can be expensive	Time consuming Less ownership of the process

**CASE STUDY****SOURCING A NEW WASTE CONTRACTOR  
BUS ÉIREANN**

Bus Éireann realised that they were producing large amounts of waste, ranging from machinery to office furniture to general office waste. Many different contractors were employed to deal with this waste in a number of different locations around the country, a situation that was proving very costly to the company.

In order to overcome this, and to make waste management more cost effective for the company, it was decided to tender for a new contract for waste management services. The aim of this new contract was to provide a clear waste management policy, along with a more proactive waste disposal system, clear measurables, compliance with relevant waste legislation and more transparency in terms of costs.

As there was a lack of waste expertise in house, it was decided to get the waste contractors who were interested in bidding for the contract, to carry out a waste audit as part of the bid. In order to do this, it was necessary to include this as a specification in the tender documents.

The main issues that had to be addressed in the tender documents were:

- having the waste audit as the basis of the proposal;
- providing an indication that minimum standards/accreditations were required e.g. licences;
- allowing for variants;
- having provision for site visits;
- having clearly defined award criteria - need to indicate if specific issues need to be addressed and the importance of each;
- insist that the plan proposed is implemented.

Bus Éireann evaluated the bids under a number of headings, which included merit of proposal, tendered price, previous and relevant experience and quality systems/accreditations. Each of these headings received a different weighting and this was multiplied by the score under each heading, to come up with the overall weighted score, from which the preferred bidder was chosen.

### Detailed Review / Audit - Carried out by Consultant Waste Management Company

These are your options in carrying out an external review.

- Use existing waste service provider - enlist the services of your existing service provider to carry out the audit for you. Most service providers now see the need for their customers to change their waste management procedures and, therefore, are equipped to carry out a detailed waste review / audit.
- Use procurement process - have a waste review / audit carried out as part of the tendering process. This may be a good option particularly if you want to change your service provider or want to shop around. (See Bus Éireann case study on previous page.)
- Use an Independent Environmental Auditor - employ the services of an independent environmental auditor to carry out a review on your behalf. There are a number of companies who carry out such work, so shop around for the best deal for your organisation.

With all of these options, you still need to maintain a significant level of control. Ensure that you specify what information you need as part of this waste review / audit. It is also worthwhile to have a member from your team to observe the waste review / audit while in progress.

### Detailed Review / Audit Carried out by Existing Staff

When sorting a sample you will need to weigh or estimate one day's worth of waste (or an otherwise representative sample) in order to extrapolate annual estimates for each waste category. Use worksheet 1 to record your results. You will find a blank worksheet 1 in Section 10 or you can download it from [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie). Fill out separate sheets for each department / building / facility.

#### When

- If possible, carry out the review the day before your waste collection happens to get the worst-case scenario in terms of waste volumes.
- Avoid scheduling it on or around any special events that would produce wastes not representative of a normal workday / workweek. Waste generation and waste components can vary significantly from day-to-day, season to season and year to year. In addition, special events within the organisation can generate additional waste that affects the overall waste stream.

#### Where

Determine the size and location of the area in which you will sort the waste. If large quantities of waste are to be sorted, a large flat area such as a parking garage or shipping and receiving area is preferable. It is advisable to sort it in a sheltered area to provide cover from adverse weather conditions.

#### What you need

You will need several containers for holding the sorted wastes. You can either measure the amount of waste in terms of weight or volume, or both. If you are weighing the waste you will need a scale. You will also need a shovel, a brush, clipboard, labels, pens and a first-aid kit.

#### Who you need

Waste sorting at a larger facility will take longer, depending on the size of the team and the amount of waste being sorted. Consult with your team regarding the number of people needed. Ensure you have enough personnel to complete the waste review / audit in the day.

Make a note on your worksheet of any results you believe are not accurate. If you suspect that the waste stream being sorted is not truly representative of the waste generating practices in your organisation, consult with your waste contractor for input on the accuracy of the data.

#### Be Safe!

**Be sure to consider health and safety issues if your own staff are carrying out the review / audit of your organisation's waste. All members of the waste review team should wear protective clothing (such as rubber gloves, heavy duty shoes, safety glasses and coveralls) and precautions should be taken to ensure that the waste does not come in contact with food or drink. You should contact your health and safety manager / co-ordinator before you commence a waste review.**



**1. Waste Review / Audit - Step by Step** (Worksheet 1)

- A) Assemble the waste sample to be sorted, using either one day's worth of waste or an otherwise representative sample (e.g. one skip out of ten).
- B) Weigh the empty containers that the sorted waste will be placed into and record these weights on each container.
- C) Sort the waste sample by major component (paper, plastic, glass, metal, organics, other).
- D) Further sort each major component into the more specific component sub-categories if necessary, (e.g. glass into clear, green, amber or other).
- E) Place the sorted materials into the separate labelled containers.

**2. Weigh**

- A) Weigh each waste container and subtract the weight of the container (obtained at Step 1) to obtain the net component weight. Record the net component weight on the spaces provided on the Waste Audit Form (see Worksheet 1 in Section 10).  
If you did not sort these waste components into subcategories proceed to Step 2-C
- B) If you sorted the waste components into component subcategories, add their net weights and record the total waste component weight on the Waste Sort Form.
- C) Add all of the total waste component weight figures to determine the total sample weight and record this total on the Waste Audit Form.

**3. Calculate the Percentage of total sample weight**

Calculate the percentage of each component of the waste as follows.

$$\frac{\text{net component weight}}{\text{total sample weight}} \times 100 = \text{\% of total sample}$$

**4. Calculate weight of waste generated annually**

- A) Calculate the weight of waste generated annually for each waste component using the following formula:

$$\text{Net component weight} \times \text{No. of working days} = \text{weight of waste generated annually.}$$

- B) Repeat the appropriate calculation for each waste component under consideration and record figures on the **Weight of Waste Generated Annually** column on the Waste Audit Form.

If you use a representative sample, make sure you calculate the equivalent amount for the day on which the sample was taken and use this in the above calculation.

If you decided to measure in volume instead of weight, ensure first that you know the volume of the containers that the waste is being sorted into.

Continue with steps 1 C to E (above in Waste Audit Step by Step).

Fill in the form in the same way and calculate the volume of waste generated annually in the same way as below:

$$\text{Net component volume} \times \text{No. of working days}$$

Whether you decide to review your waste in terms of volume or weight should reflect the way in which you are being charged for your waste.

The information gathered in your Detailed Review/Audit will be invaluable when embarking on your plan of action.

Finally you may need to gather some more detailed financial information to supplement initial findings in the preliminary review. Again talk with your financial department and with those responsible for waste management. It may also be worthwhile examining purchasing records. Once this is done you will be ready to start your Action at Work programme.

**Worksheet 1-Waste Audit Form** Please photocopy and reuse

Date Waste Sort \_\_\_\_\_

Source of Sample \_\_\_\_\_

Sample collected

1 Day's Sample

Representative sample

Team members conducting waste sort \_\_\_\_\_

Factors affecting representativeness of sort \_\_\_\_\_

Waste Component	Net Component Weight	% of Total Sample Weight	Weight of Annual Waste
<b>Paper</b>			
Stationery			
Computer			
Newspint			
Cardboard			
Magazines			
Other			
<b>Total Component Weight</b>			
<b>Plastics</b>			
PET			
PVC			
Polystyrene			
Other			
<b>Total Component Weight</b>			
<b>Glass</b>			
Clear			
Green			
Brown			
Other			
<b>Total Component Weight</b>			
<b>Metal</b>			
Aluminum			
Tin coated steel			
Ferrous Metals			
Other			
<b>Total Component Weight</b>			
<b>Other</b>			
Textiles			
Rubber			
Leather			
Inorganic (ceramic, etc)			
Ink Cartridges			
Other			
<b>TOTALS</b>			

## CASE STUDY

### **38% RECYCLING ACHIEVED AT CHILDREN'S UNIVERSITY HOSPITAL, TEMPLE STREET**

#### **CHILDREN'S UNIVERSITY HOSPITAL, TEMPLE STREET**

Following a request in August 2003 by the Comptroller and Auditor General for all hospitals to compile information and complete and return a questionnaire regarding the disposal of healthcare risk waste, healthcare non risk waste and recycling, an initiative was undertaken at the Children's University Hospital, Temple Street, Dublin, to improve the hospital's performance in terms of waste management. Initially the programme was driven by the Allied Services Manager, Head of Portering and Management Accountant.

The main aims of the programme are:

- Sustainable waste management.
- Legislative compliance.
- Staff awareness and involvement.
- Increase recycling to 50% of all non risk waste by December 2005.
- To achieve Green School status.

The Children's University Hospital (TCUH) convened an Environment Committee in September 2003, which included representatives from across the board within the hospital i.e. portering staff, infection control, maintenance, finance, catering, nursing, laboratory among others. In November 2003, TCUH engaged the assistance of Eastern Health Shared Services Waste Management Division and together obtained approval from senior management through presentations to the Hospital Executive Management Committee.

In February 2004 a complete waste audit of all hospital waste was undertaken to establish how much is generated. Two porters weighed all waste for the month of February gathering details of the amount of clinical and non-clinical waste arising from each area of the hospital and the amount of recyclable waste. The waste was then examined and categorised during a visit to the waste contractor's site and potential recyclable components were identified. In parallel to this, hospital staff were surveyed to assess their knowledge of waste.

The hospital engaged the assistance of its existing domestic waste contractor. This contractor now takes cardboard, non-confidential waste paper, plastic, aluminium and polystyrene for recycling along with residual domestic waste. In addition to this the hospital undertook to contract with other specialist waste contractors for recycling services for the following materials: glass, clinical waste, batteries, confidential waste, electronic and electrical equipment.

A contract to remove laboratory chemical waste is also in place for some time. Clinical Waste or Healthcare Risk waste is disposed of by Sterile Technologies Ireland Ltd., in accordance with a 32 county contract agreed between STI, The Department of Health and Children and Department of Health, Northern Ireland.

In terms of budget and equipment, a compactor for non-confidential paper waste was purchased. From the existing portering service, restructuring took place to release a person to be responsible for waste management on the ground - this person became the Waste Management Co-ordinator. The existing waste management budget was utilised and the programme is running on a cost neutral basis. Additional costs match savings in revenue.

In excess of 100 waste paper recycling bins (supplied free by waste contractor) were put in place for staff use. This acted as a reminder along with e-mail updates, posters and information sessions. The Waste Management Co-ordinator meets with staff daily. Staff also have access to Allied Services Manager and Head of Portering. All staff (approximately 1100) and the entire hospital campus are involved in the programme.

To date there has been a significant diversion of waste from landfill to recycling with an increase in recycling rates from 12% to 38% in less than a year. There also has been a reduction in clinical waste of approximately 15% and a reduction in the associated risk.

Other changes include the introduction of Multi Function Devices (combined photocopiers, faxes, scanner, e-mail), re-useable envelopes and battery recycling.

There has been huge interest and involvement from hospital staff, which has led to the success of the project.

Plans for the future include:

- To achieve 50% recycling by December 2005.
- To update the hospital's waste policy to take into account recent advances
- To Achieve Green School status
- To develop a training programme on waste management for all staff taking into account different levels of responsibilities.
- To realise a material saving through a quality waste management programme
- To achieve targets set by Government in 'Changing our Ways'
- Sustainable Waste Management.



Plan of action

# HOW

to set up systems  
to reduce, reuse  
& recycle

## Learn how to set up systems to reduce, reuse and recycle your organisation's waste

### 1. INTRODUCTION

Once you have established the type and amount of waste that is being produced, how it is being managed, how much it is costing and what problems there are, you are now ready to examine what action needs to be taken to win the Race Against Waste.

When embarking on your plan of action it is necessary to take into consideration your waste management position at the moment, the relevant legislation and best practice. For relevant legislation please see attached CD or [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie) for Irish Waste Management Strategy and Policy. You will also find case studies with details of best practice throughout this guide.

The structure of your plan of action should ideally follow the structure set out for your review. So if your review looked at waste

on a departmental basis, your plan of action should be put in place for each department. This will make it easier for you to track results and to show/monitor changes in behaviour.

Your strategy should ideally involve actions that reinforce the statement made in your environmental charter / policy. Think of this as the end result, which your Action at Work plan will lead you to.

### 2. ESSENTIAL COMPONENTS OF YOUR ACTION PLAN

#### Information needed

At this stage you should have all the information you need to start planning. When planning you will need to look at three components and combine these to come up with a set of objectives and targets:

- **Your current waste management position**

Take a look at the results of your waste review and at the financial records. Where are the major problems? What is costing the organisation most? What are the options for dealing with this waste?

- **Relevant legislation**

Which legislation is relevant to your organisation? Which legislation are you compliant with and more importantly, which are you not compliant with?

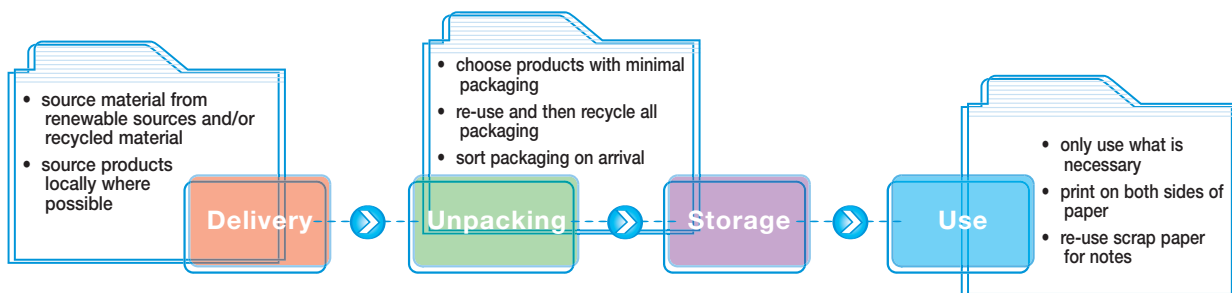
- **Best practice**

Look at the various case studies throughout this guide. Are there examples from which you could learn? Do you know of another similar organisation which has implemented a waste minimisation / recycling programme and to which you could pay a visit?

Once you have gathered and assessed all of this information take a look at your options. This will help you to outline objectives and targets.

#### Options for Reduction, Reusing, Recycling

Take each waste stream identified in the waste review e.g. paper, cardboard, and plastic, etc. Identify the various options there are to reduce, reuse or recycle these items. Take a look at products along the chain from when they are purchased until when they require disposal. Use the following diagram to help you with this process.



Use Worksheet 2 to help you to list and screen the potential options for dealing with this waste.

Example of Worksheet 2

Waste Component	Subcomponent	Reduction Options incl. Purchasing	Reuse Options	Recycling Options
Paper	Office paper	Double sided printing Buy in bulk	Reuse for messages/memos	Set up office recycling
Cardboard		Change to reusable containers for deliveries	Reuse cardboard boxes for outgoing deliveries	Set up recycling bins for cardboard

You will find a blank worksheet 2 at the back of this guide, which can be photocopied, or you can download it from [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie). Use this worksheet to help you quickly identify those options that are most feasible based on economic, operational and other criteria.

### 3. OBJECTIVES AND TARGETS

Putting together a set of objectives and targets can seem a daunting prospect. Where should you start? One way to begin is to state objectives and targets for the organisation as a whole and then for each department or building, depending on the way you have structured your review. Setting objectives and targets will form the basis of your plan of action.

Prioritise your targets appropriately.

- Ensure your organisation is in compliance with the relevant legislation - as discussed earlier in this guide, failure to do this could lead to large fines, prosecution and bad publicity.
- Start with something easy, which will generate interest and ensure a quick success - in this way you will get staff on board.
- Start with something that is low cost and has the potential to save the organisation money. This will give you buy-in with management and the saved money can be reinvested into further initiatives.
- Look at the bigger picture and prioritise. It may be necessary, for example, to break major goals down into smaller, achievable and measurable steps.

### 4. ASSIGNING RESPONSIBILITIES

For many activities it will be apparent whose responsibility it is. However, for others it may not be quite so clear. To help you, take a look at the questionnaires and interviews you carried out to help with assigning responsibility. There may be people who are already involved in waste management within your organisation but whose role or responsibility needs to be changed or developed. There may also be people who have not had any role prior to this but who need to get involved now. Be sure to consider staff not directly employed but who have a significant role to play in waste management within your organisation, for example, contract cleaners.

#### Target Dates

Always agree dates by which targets are to be met. This gives an incentive to reach a target and get a job done. Be reasonable with your target dates. Do not try to get too much done too quickly. Implement your action plan in stages.

Example of Worksheet 3

Department / Building: Office Block 3						
Date: 1/03/05						
Legislative Requirements	Current situation	Objective	Target	Action	Responsibility	Completion Date
Segregation of paper for recycling	10 % of paper is recycled	Reduce the amount of paper going to landfill	Reduce quantity of paper going to landfill by 50%	1. Switch all printers / photocopiers to default double side	IT	March 2005
				2. Set up scrap paper trays in all offices for one-sided copies	Office managers	April 2005
				3. Set up paper recycling system	Cleaning services	May 2005

#### Written Procedures

It is worthwhile to have a document outlining the procedures that should now be followed in light of the new programme. This removes any uncertainty. This should include action plan worksheets which detail all the information outlined above. See sample worksheet above. These should be completed for each department / building. 'How to' carry out various procedures particularly any that have changed significantly should also be documented as part of the written procedures.

#### Taking Action

Once you have all the planning complete, it is time to take action! Be sure that all of your environment team and your senior management have given their approval to the action plan. The next step is probably the most important one of all - informing and involving staff in the main changes. This will involve a lot of training and communication and will be dealt with in Section 6.

## CASE STUDY

### HIGH QUALITY COMPOST PRODUCED AT CASTLEREA PRISON CASTLEREA PRISON

As a result of a waste composition survey in the Castlerea Prison in early 2004, which showed that over 50% of waste was organic, it was decided to initiate a pilot composting project to divert this waste from landfill. The trial took place from 24th June to 5th August 2004, involving both staff and prisoners.

By the end of the pilot, over two tonnes of food waste was diverted from landfill and the result was a high quality compost. It is hoped to expand the project within Castlerea prison and it is also being used as a general awareness project for the rest of the prison service.

#### Objectives

The objectives of the trial were varied:

- To see how such a project could be managed within the prison service.
- To look at the management structure and prisoner involvement in such a project.
- To divert organic waste from landfill.
- Removal of food waste from the existing disposal systems i.e. wastewater treatment plant and thus reduce BOD levels at the plant.
- To generate compost of a high quality to be used on-site on gardens, grounds and horticulture areas.
- Reduce the amount of waste for collection by contractors - less cost.
- Create awareness that would lead to less production of food waste by better portion control.

#### How they did it

A member of the maintenance staff of the prison was appointed as the team leader for the project and a full procedure was drawn up. Both staff and prisoners were informed of the new procedures through an awareness presentation from the Environmental Manager of the Irish Prison Service. Skills and awareness developed through the continuous monitoring of the composting process.

Coloured bins were purchased and placed in each of the catering facilities. Food waste was segregated from the remaining waste at source by both the staff and prisoners. The bins were then collected by supervised prisoners and brought to the composting vessel. The bins were then cleaned and returned to the catering areas.



Communicating with staff

A man in a suit is sitting at a desk, looking towards the camera. He is holding a whiteboard that features a pyramid diagram with six levels. The levels, from top to bottom, are: Prevent, Minimise, Reuse, Recycle, Recover Energy, and Landfill. The word 'HOW' is written in large, bold, white letters across the middle of the whiteboard. Below 'HOW', the text 'to get staff involved...' is written in a smaller, white, sans-serif font. The background is a blurred office setting with a laptop and a mug on the desk.

# HOW

to get staff  
involved...

# Learn how to get staff involved in your new waste management programme

### 1. INTRODUCTION

Communicating with staff is one of the most important elements of any new initiative. You are relying on the rest of the staff to implement the action plan fully and properly so it is essential that they have sufficient information and support to enable them to do this.

### 2. ESTABLISHING LEVELS OF AWARENESS/WILLINGNESS TO PARTICIPATE

Before you start trying to communicate the new plan to your staff and colleagues, it is necessary to establish the level of awareness that exists and their willingness to participate in a waste prevention and recycling programme. It is worthwhile carrying this out in parallel with the waste review so that you can build both sets of

results into your plan of action. You, therefore, need to survey the staff - perhaps through questionnaires and interviews. Below is a sample staff questionnaire, which can be downloaded from [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie). You may wish to amend the questionnaire for your own needs.

#### Sample Questionnaire to establish levels of awareness regarding in-house waste management

Name (optional):

Department / Faculty:

Position / Level:

- Do you regard the issue of waste management as important? Yes No
- Who is responsible for waste in your department?
- What types of waste (waste stream) do you typically produce in a day?
- How much of each waste stream would you produce in a day?
- Do you segregate your waste?
- Are you aware of any waste awareness activities, which the organisation has recently undertaken?
- Do you know what the organisation's legal responsibilities are in relation to waste management?
- Do you know what the European Waste Hierarchy is?
- How much waste do you think your organisation produced last year?
- What happens to this waste once it leaves your bin? Landfill / Incineration / Recycling / Don't know
- Do you have the opportunity to reuse / recycle items?
- Are there written procedures for dealing with waste?
- Would you be willing to change your ways in order to reduce the amount of waste your organisation sends to landfill?
- What would facilitate you in participating in a waste minimisation / recycling programme?
- What changes would you like to see made within your department / section / building in relation to waste?
- What changes would you like to see made in the organisation in relation to waste?
- Have you any suggestions as to how waste could be reduced / recycled in your department / section / building?
- Do you recycle at home?
- What would influence you to recycle?

## 2. ESTABLISHING LEVELS OF AWARENESS/WILLINGNESS TO PARTICIPATE

continued

### Staff Interviews

When interviewing staff regarding waste management practices, it is important to explain that you are gathering information/seeking their opinions in order to improve waste management practices within your organisation. Adopt a neutral, inclusive tone. You should not criticise or antagonise staff or colleagues, as you will be relying on them to implement the programme.

### Who should you interview?

It is not necessary to interview a huge number of people, instead aim to talk to a broad range of people from different departments/levels within the organisation. Look at the different waste streams identified in the preliminary review and try to ensure that the various different waste streams are represented in the interview process. Staff will have different priorities depending on their level of responsibility, so it is important to interview different levels of staff.

### What questions should you ask?

Many questions will be similar to those in the above questionnaire.

However, this is an opportunity to ask questions that relate specifically to that person's job or to specific responsibility in relation to waste.

For example when talking to someone who has responsibility for purchasing you could ask some of the following:

- What percentage of the products you buy are made from recycled material?
- Is there an opportunity to buy more items in bulk?
- What packaging do items come in?
- Are there alternatives that have less packaging?
- Can the products you buy be recycled / reused i.e. refillable print cartridges?
- Are the products you buy durable and long lasting?
- Can they be repaired if broken?

The feedback from the questionnaires and interviews should be fed into your plan of action.

## HELPFUL HINTS

### How can I REDUCE my waste?

- Establish a policy that office reports, memos, internal manuals and so on be double-sided copied to reduce paper.
- Place reminder signs at photocopiers and printers regarding double sided printing.
- Maintain a centralised filing system instead of making multiple copies for multiple files.
- Send e-mail memos to save paper.
- Store data on computer networks or on disk instead of paper files.
- Review documents on-screen before printing to avoid waste.
- Update your mailing lists to avoid duplication, waste and added costs.
- Remove your company's name from junk mailing lists.
- Order supplies in bulk or in concentrated form.
- Don't use bin liners in bins collecting dry waste.
- Purchase durable equipment.
- Replace paper towels with washable towels or hand dryers.
- Use rechargeable batteries.
- Implement a stock purchase and rotation system so stocks are used within their shelf-life.



### 3. TRAINING OR AWARENESS RAISING

Depending on the job specification, some staff will need specific training in waste management. Training will be essential for those working in areas / departments where significant changes will take place e.g. purchasing / procurement, catering, cleaning, facilities management, etc. These will have been identified while conducting the waste review and outlining your plan of action. For the majority of staff, however, a more passive form of training and awareness should suffice.

#### Training

Training for key staff may need to be carried out at more than one level and include general training, and training sessions within each key department/division. Personnel dedicated to training within the organisation will also need to be involved in any waste management training. Training should be looked at from the point of view of new staff and existing staff and needs will vary.

#### Induction - New staff

Induction for new staff is an ideal time to introduce the organisation's waste management policy. This is particularly important if there is a high turnover of staff. Waste management policies and procedures can be introduced to staff in an integrated way together with a whole range of other issues. This induction could include:

- introduction to waste / environmental charter;
- training video;
- presentation by Environmental Manager / other responsible person on procedures and practices.

#### Existing Staff

It may perhaps be more difficult to train and raise the awareness of existing staff. They are already used to a particular system and often do not see the need to change. Time your training appropriately depending on other events taking place in your organisation. Target the relevant people and make the training interesting and to the point. You should try and incorporate waste management training into existing structures as much as possible. Therefore, it would be advantageous to include it with health and safety or some other existing programme.

#### What type of training?

There are a number of options when it comes to training -

Type of training	Advantage	Disadvantages
In-house	Can be tailor made to fit organisation's needs Relatively cheap	Requires waste expertise / knowledge in-house
External training	Opportunity to mix with other peers and to learn from them Cover a wide range of issues	Can be quite expensive Can be quite general - not all relevant to your institution
On-line training / Video / DVD	Participants can learn at their own pace Has value as an add-on / follow up to other training	Difficult to motivate people - not mixing with others, no set time / date

The type of training you opt for will depend on a number of things:

- Budget
- Time
- Human resources
- Knowledge / expertise within the organisation.

You need to look at the above before deciding what route to take. It may be advantageous to combine a number of methods. If you or someone within your organisation is going to undertake the training, take a look at the sample training presentations, which can be downloaded from [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie) or on the accompanying CD. You may also be able to make use of videos / DVDs during training.

#### Follow-up After Initial Training

Effective training is cyclical in nature. One-off events do not suffice. It is necessary to have a feedback mechanism for staff built into any training you carry out. This may be in the form of a questionnaire given out at the training or sent via e-mail afterwards. Follow-up activities also serve to gauge staff opinion on how useful the training was, and to assess how effective the training has been from your point of view.

It is important to examine the feedback carefully after training. If it is apparent that the training has not been successful, you may need to have some follow-up activities, examine what went wrong and explore a change in style or content of training.

You may wish to give the participants a short quiz during training to provide information as to whether or not they understand the changes. You should also observe procedures in the work place following training to see if changes have been taken on-board successfully.

Because of the large turnover of staff in many organisations and the potential changes in legislation / policy, it is essential that training is on-going if the programme is going to maintain momentum. In-house trainers need to be kept up-to-date with changes in policy and legislation, and will need to attend training courses outside the organisation.



## 4. AWARENESS RAISING

Once you have outlined your action plan, it is time to start thinking about methods of communicating with staff to motivate, inform and enable them to implement the new programme fully. Raising awareness of your new waste management procedures is essential to the success of the plan.

The most important thing is to make any new system easy to understand. Awareness raising activities need not be expensive or time consuming. Be clever and utilise as many existing communication tools as you can.

Bear in mind the following points when putting together an awareness campaign:

- Staff need to know why they need to change.
- Staff need to be told and shown how to change.
- Staff need to be encouraged to change.

Be aware that there may be people other than staff contributing to waste in your facility e.g. members of the public, students, contractors. In as far as possible these also need to be made aware of the any changes in procedures.

### Methods of Raising Awareness

Below are a number of different tools, which can be used to raise awareness. It is advisable to use a combination of these tools to get maximum effect. This is not an exhaustive list and you may have other methods.

#### Leaflet

It is not necessary for everyone in your organisation to receive a copy of this guide. However it is important to give people a summary of what's going on and many people, such as senior management may like to be involved without committing themselves to an environmental team. A leaflet, drawing the main points from this guide, which can be a hard or soft copy, is a useful way of disseminating this information at the start of your programme – contact Race Against Waste for details.

#### Memo

Announce the beginning of your new action plan. Internal e-mail is an extremely useful, efficient, cost effective and environmentally friendly way of communicating a message to staff. However your message could get lost in the abundance of other mail, which staff may receive every day. Because of this, it is important to highlight Race Against Waste e-mails in some way. You could, for example:

- send with high importance;
- change colour of type/font;
- be selective;
- title e-mail clearly;
- develop a uniform plan e-mail design.

You can download a template memo on [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie)

#### Green Notice Board

Install a Green Notice Board in each building / department to inform staff of changes in operation, targets to meet and/or not met, to monitor results, to motivate. This notice board should be used only for environmental information. Leaflets, posters, memos, team contacts can be posted on the Green Notice Board which can develop as a credible source of current information.

#### Website Notices

Use your organisation's website / Intranet. If necessary, talk to your I.T. department about conveying your message effectively using this media. For example, if there is a change in practice or a change in location for waste delivery, flag this change up on your homepage using creative colours / flashing / and other ways to get noticed.

#### Computer pop-ups

Create computer pop-ups or screen savers that remind people to take action and of good practice. Display messages that are relevant to people who use computers, such as 'print both sides', 'read on-screen before printing' and so on.

### Newsletter Articles

Use your organisation's newsletter or other publication to publicise your new programme and to explain the changes to your staff.

#### Posters

Posters are an easy, inexpensive and relatively effective way of communicating a message with your staff as well as members of the public, customers, suppliers etc.

Posters serve many functions. They can be:

**Informative** - highlighting what materials go in what bin.

**Thought provoking** - explaining how many trees have been saved by recycling 1 tonne of office paper.

**Encouraging** - letting staff know of their success to date.

Posters should not be used in isolation but should be supported by staff information to complement the poster message.

Posters are available on the website [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie)

#### Bins

The way you situate your bins can in itself have an awareness raising effect. Here are some tips:

- Have different coloured bins for collecting different materials.
- Change perception of waste - place just a few waste bins and many recycling bins in the work area, making recycling easier and wasting harder.
- Label bins correctly.
- Remove waste bins completely!

#### Awareness Day

A good idea is to kick off your action plan with an awareness day. In this way you will attract the attention of a large amount of staff, and perhaps members of the public if this is appropriate. Such an event will pave the way for other awareness raising measures in the future.

## Organising an Awareness Day

### What is an Awareness Day?

An awareness day is an event dedicated to providing people with information about waste management. It is an ideal way in which to demonstrate to people why it is necessary to change and how to go about it.

Some of the aims of an awareness day may be to communicate the results of your waste review, make people aware of compliance issues and the cost of waste management, and inform them of your plans for the future and what their role is.

### When should you hold it?

Choose a period that is not extremely busy or when many people are away on holiday i.e. do not hold such events during July / August or during major holiday periods. Check out if there are other big events happening within the organisation and try to avoid these also. Avoid Mondays and Fridays. Ensure the event runs for a period of time that allows all people to access it. This may mean continuing after official closing time and being accessible during lunch and coffee breaks.

### Who should you target?

You should target everybody. Your staff should be your main focus, but it is also an opportunity to show your customers, visitors and members of the public what you are undertaking. Making sure your information session is widely accessible may be difficult if you have a number of buildings / departments located in different areas, so when planning the event, anticipate what would be necessary to give everybody the opportunity to avail of the information on offer.

### How to target people?

People can be targeted through many of the communication tools outlined above - memos, e-mails, notice boards, newsletters - but also through department meetings and invitations especially to staff / departments based outside the main campus.

### Where should you hold it?

Ensure maximum exposure by locating your awareness day in the area which has access to most staff and in the building where most of your staff work. Ensure there is plenty of open space to allow for groups of people and for any displays / stands. Try not to block entrances and create as inviting an entrance as possible.

### Who should be there?

Your Environmental Team and others with particular knowledge or remit should be present to answer queries from staff / public about the changes in procedures.

It may also be worthwhile to invite external experts, such as key staff from your local authority e.g. Environmental Awareness Officer or somebody who has already had experience in this area.

Ensure that you / your staff are fully equipped with the information to answer almost any query, which is likely to come up.

If you do not have the answer there and then, check if somebody else does. If not, record the person's name and contact details and get back to them with an answer. Lack of information / knowledge on your part will not motivate people into changing their ways, so be prepared.

### How?

There are many different ways of getting the message across at this type of event.

- Large displays are an effective way of communicating information to a considerable number of people. They also allow the opportunity to use visuals / graphics which can be valuable in conveying certain messages.
- Demonstrations are a good idea particularly where there are going to be changes in procedure. For example, if you are going to change the type of bin you use, you could have this on display
- Talks could be timed to coincide with lunchtime and could focus on a topic which is of particular interest / concern. These could be given by internal staff or by an external speaker

### A general pat on the back

Once your plan of action has been up and running for a while and you have started to see some changes and savings, make people aware of their success and the importance of their contribution. Use some of the communication tools outlined above to do this. Ensure that your awareness activities are on-going throughout the year and not just a one-off event.

Green Procurement

**WHAT**  
is green  
procurement?

# Learn how to get your organisation to make environmental considerations part of the purchasing policy

### 1. WHAT IS GREEN PROCUREMENT?

**Green procurement is an approach that aims to integrate environmental considerations into all stages of the way your organisation purchases equipment and supplies. Green procurement covers the purchase of energy efficient computers, office equipment made from environmentally sustainable timber or recycled products, other materials that are easily recycled and buying energy from renewable resources.**

#### Why implement green procurement?

Following your waste audit you will have a good idea of the quantities and types of waste your organisation is producing. Ideally, any future waste audit and action plan will find more environmentally friendly ways of dealing with the waste that is produced.

It is important to remember that most of the waste produced within your organisation is actually bought in. For example, purchasing of products and services, by public authorities alone, can average 15% total Gross National Product expenditures, of various EU countries (Source: Local Governments for Sustainability, [www.iclei-europe.org](http://www.iclei-europe.org)). Up to 75% of these expenses are estimated to relate to current goods such as consumables and services, while the rest is the purchase of capital goods.

#### Green procurement applies to all

So while the public sector may have a particular role in making changes to the way in which goods and services are purchased, this approach applies equally to companies in the private sector. It is only by everyone becoming involved that the amount of waste we produce can be substantially reduced.

It is important that the greening of purchasing should not be seen as an additional burden on staff members. In fact, ideally, a green procurement policy should be embedded in a larger organisational environmental policy that involves all staff members. Therefore, it is essential that representatives of the procurement section are included on any environmental team that is established within your organisation.

There are a number of potential barriers to implementing a green procurement strategy, which you need to be aware of.

#### POTENTIAL BARRIERS

- A lack of motivation to change behaviour.
- A lack of awareness of the environmental consequences of buying a particular product.
- A lack of knowledge about the existence of alternative products.
- A lack of awareness about environmental problems in general.
- A belief that greener products are more expensive.
- A lack of information on environmental policy concepts.
- A lack of data on product contents.
- An uncertainty as to how to define a 'green' product.

**This section helps you overcome these barriers.**

## 2. STEPS TO IMPLEMENT A GREEN PROCUREMENT STRATEGY

As most of the waste produced by an organisation is bought in, ask a fundamental question before green purchasing starts - is this good or service really needed? ('Do we really need it?' is an integral part of 'Reduce' waste management strategy).

If the answer is no, this in itself, may instantly eliminate a certain amount or type of product from the waste stream. However, if the answer is yes, then you may wish to investigate buying a more environmentally friendly version of the product and start to 'green' your overall procurement process. There are a number of steps that are advisable to take in order to successfully implement green procurement.

### 1. Enlist Management Support

Procurement staff will need management support to enable them to introduce changes in their work practices, such as the introduction of green procurement. Such support will enable purchasers to argue competently for more environmentally friendly purchasing practices. This may involve departments initially taking on additional responsibilities or extra staff when researching the availability of recycled products.

The question of support is relevant. Management and staff of many organisations may have prejudices against environmentally adapted products. Common problems encountered from management include:

- belief that there are more important things to do;
- loss of commitment over time;
- wishing to give too short a timeframe over which to achieve environmental results;
- allowing audit or financial concerns drive procurement;
- lack of skills and environmental awareness.

So for purchasers to influence their organisation's greener purchasing, it is necessary for them to:

- show that they understand the environmental issues associated with the products needed and requested;
- collect environmentally-relevant product data from suppliers, scientific research and other available literature.

### 2. Develop a Policy and Set Goals

The next step is to develop a policy for procurement that can be implemented throughout the organisation. At the very minimum, this policy should state an organisation's preference for purchasing recycled products where possible. For those that are new to this, it can be a good idea to start off slowly. This can involve perhaps concentrating on one or two products to begin with where the environmental benefit is clear, or where environmentally friendly alternatives are more easily available, such as recycled paper.

When setting targets for your green procurement policy, it is important to ensure that these targets are measurable and achievable. So you could, for example, state that 50% of expenditure for paper and paper products will be spent on recycled paper. This is something that can be quantified and improved on from year to year. Buying recycled also serves to further encourage the market for recyclables.

Most organisations depend on a small number of suppliers to produce and deliver the products they require. This means that organisations tend to do business with suppliers already established to secure / maintain reliable supply lines. However, as a purchaser you can inquire about suppliers' environmental standards and practices, and make them aware of green purchasing-related issues.

A growing number of organisations now require their suppliers to give detailed accounts of the materials delivered and can ask their suppliers to sign environmental policy statements at the time of contract. Some suppliers, for example, may take back the packaging they supply. Check with your supplier if they will let you test samples of an eco product over a number of months. This will help ensure that the product will sufficiently meet your needs.

Remember to use your purchasing power to put pressure on suppliers to change their habits and develop more environmentally friendly products.

In Great Britain, B&Q introduced extensive environmental audits for their suppliers. This audit involved a questionnaire, requesting information on manufacturing processes, environmental protection and employment conditions.

B&Q then used seminars, briefings and reports to let suppliers know of their expectations. Suppliers who received a low grade through the questionnaire were asked to improve their performance or face eventual de-selection. The supplier assessment procedure was later updated to integrate ethical issues such as working conditions in developing countries. (Source: Green Purchasing Workbook).

### 2. STEPS TO IMPLEMENT A GREEN PROCUREMENT STRATEGY

continued

### 3. Develop Standards and Revise Specifications

There are many terms and definitions that describe the amount of recycled material in a product. In order to ensure consistency among purchasers in different departments, it is a good idea to set standard definitions for recycled content you will use. Some of the most common terms used are 'recovered content', 'post consumer material' and 'recycled content'. These terms are usually expressed as a percentage, and describe the portion of a product that is made from materials diverted from the waste stream. For example, recycled paper may contain 60% post consumer material.

Green procurement works best when environmental priorities are included at the beginning of the tendering process, so it is a good idea to update the specifications used for tenders to include environmental criteria. If included at this stage, the tender notice needs to contain an accurate description of the environmental qualities being sought and to inform bidders that the bids will be judged on environmental as well as economic criteria.

This can include specifying the types of materials you would prefer or alternatively specifying that none of the materials should be detrimental to the environment. It is vital when drawing up new specifications that representatives of all departments have an input. This is to ensure that such specifications will suit everyone and that the wording is not too restrictive. For example, using words like 'large order purchasing only' may exclude small suppliers of recycled products.

### 4. Locate Recycled Products

Once the green purchasing goals and specifications have been developed, the next step is to locate the recycled products you wish to buy. The best place to start is with your current suppliers - check on the recycled content of their goods as they may already have a range of products in stock that you may not be aware of.

There are other sources of information available. A number of databases on the Internet, (while not specific to Ireland), provide useful sources of information on recycled product resources available, and on products containing recycled material (see below). In addition, networking with other organisations through meetings and seminars can provide an excellent opportunity to discuss environmental issues, green procurement, potential suppliers, problems encountered and how they were overcome. Contact Race Against Waste, Lo-call 1890 667639 to see if there is an event in your area.

By locating and purchasing recycled products, the market demand for these - and, therefore, supply - will increase, so your action will affect others. As previously mentioned, public sector and large organisations have considerable potential to influence practice. This increase in demand will, hopefully, also serve to bring about a reduction in the price of recycled products. If the green purchasing policy happens in conjunction with an overall waste reduction policy, then the savings made could be used to offset the increased cost of purchasing recycled products. An ongoing commitment to buying recycled will serve to increase the selection, accessibility and affordability of recycled products.

#### Useful Websites for Green Procurement and Product Information

[http://europa.eu.int/comm/environment/green\\_purchasing/cfm/fo/greenpurchasing/index.cfm](http://europa.eu.int/comm/environment/green_purchasing/cfm/fo/greenpurchasing/index.cfm)

<http://www.iclei-europe.org/index.php?id=693>

[http://europa.eu.int/comm/environment/gpp/handbook\\_en.htm](http://europa.eu.int/comm/environment/gpp/handbook_en.htm)

[http://europa.eu.int/comm/environment/green\\_purchasing](http://europa.eu.int/comm/environment/green_purchasing)

<http://www.londonremade.com/links>

<http://www.buy-recycled.co.uk>

### 5. Educate Employees and Suppliers

Staff participation in any environmental programme, including environmental purchasing, is critical for its success. Staff members are responsible for implementing these changes on the ground so it is vital that they are informed and educated on the green procurement policy, why it is necessary and what it hopes to achieve. Management need to be seen to promote this policy among staff members and make them feel it is worthwhile. This may involve changes to staff training and inductions, updates in staff newsletters and other publications. The issue of green procurement can also be raised on the awareness day.

It is also necessary to educate those outside the organisation. Communicating a green purchasing policy to suppliers, service providers and contractors gives them the opportunity to take account of your new requirements.

## 2. STEPS TO IMPLEMENT A GREEN PROCUREMENT STRATEGY

continued

## 6. Implement a Tracking and Evaluation System

Once the green procurement programme is up and running, it is a good idea to keep track of how things are progressing. This will involve setting up a system to track and monitor the quantities of recycled products being bought and how they perform. This may involve setting up some sort of organised feedback mechanism to the procurement section from other departments. The data collected from this will determine if the policy is reaching its targets and may identify areas for future expansion.

### Tips for Green Procurement

#### Stationery

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- Buy recycled paper.
- Use refillable pens, pencils, markers (used for text, board and flipcharts), as well as ink and laser cartridges.
- Choose glue which contains water based solvents.
- Check that plastic material for folders and filing systems contain PP (polypropylene) instead of PVC.
- Purchase durable strong plastic or paper folders.

#### Packaging

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- Enquire if packaging will be taken back by your supplier.
- Minimise packaging by using concentrated cleaning agents delivered in refillable containers.

#### Equipment

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- Lengthen the lifespan of old computers through innovative software.
- Lease IT devices with an incentive to energy saving.
- Buy computers that have easily separable components, which facilitate recycling at the end of their life.
- Lease photocopiers and ensure that they have been adapted for use with recycled paper and for copying on both sides.
- Limit the consumption of energy by purchasing energy-efficient devices (IT, lighting or white goods).
- Purchase machinery that has a low impact on the environment in terms of emissions, noise.

#### Furniture

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- Make sure furniture is of high quality with regard to durability and strength - this will make it last longer and thus save money.
- Try to purchase furniture that is repairable, i.e. access to spare parts secured for more than ten years.

## CASE STUDY

### **NEW APPROACH TO WASTE MANAGEMENT IN THE DEPARTMENT OF SOCIAL & FAMILY AFFAIRS** **DEPARTMENT OF SOCIAL & FAMILY AFFAIRS**

The Department of Social & Family Affairs implemented a 12-month waste management pilot scheme in its six Dublin city-centre offices in July 2004. Before introducing the pilot research was carried out and a dedicated team of staff met on a bi-weekly basis to discuss progress and report to senior management. The main partnership Committee in the Department also endorsed the pilot scheme.

The Department of Social & Family Affairs implemented a 12-month waste management pilot scheme in its six Dublin city-centre offices in July 2004. Before introducing the pilot research was carried out and a dedicated team of staff met on a bi-weekly basis to discuss progress and report to senior management. The main partnership Committee in the Department also endorsed the pilot scheme.

It was decided to adopt a phased approach to implementing the new system so the initial contract centered on the Department's six Dublin city-centre headquarter buildings where 1,300 staff are employed.

A "waste audit" was carried out in each of the six buildings which examined, inter alia, the current level of waste being diverted to landfill, the current level of paper being recycled, the cost incurred by operating such a system, the potential benefits of implementing the new waste management system and the requirements of staff in the buildings in question. The findings and staff feedback highlighted the need to implement a comprehensive waste management system which would facilitate recycling of various waste streams.

A waste contractor has been employed to collect all waste streams from the Department's six offices, including general / wet waste as well as electronic and hazardous waste, on request.

The main aims of the programme were:

- To recycle as much waste as possible, thus diverting same from landfill;
- To meet the requirements of staff and provide the necessary facilities to enable them to recycle waste generated in the course of their working day;
- To inform and educate staff, as well as encourage their continued participation in the recycling programme, by highlighting how their contribution to the recycling process is benefiting both the Department and more importantly their environment;
- To learn from the experience of implementing this pilot scheme prior to extending similar programmes to other offices nationwide.

It is the intention to carry out a comprehensive review of the pilot scheme in the near future. The response of staff in the offices covered by the new system has been very encouraging and the Department is considering extending a similar waste management arrangement to other Department offices.





Working with a service provider

HOW

to engage

a waste service

provider

PLEASE  
RECYCLE  
USED INKJET CARTRIDGES  
& MOBILE PHONES  
HERE



# Learn how to engage a waste contractor and what licenses and permits they should have

Today every step of the waste management chain is strictly regulated. Organisations and businesses should remember that they have a responsibility to ensure that waste sent off-site is managed in a responsible manner. Working correctly with your waste service provider can ensure this objective. The following list gives some ideas of best practice. This guide does not purport to be a legal interpretation of current legislation. It is up to each individual organisation to keep abreast of the environmental legislation in its own area.

### Do

#### Assessing/sorting your waste

- Do determine the source, nature and quantity of waste generated i.e. is it recyclable or non-recyclable? Is it non-hazardous or hazardous waste? A specialist waste contractor is required to deal with hazardous waste.
- Do segregate your waste streams correctly on-site.
- Do not put wet waste in with packaging waste.
- Do not place hazardous waste in your general bins.
- Do ensure that hazardous waste is not mixed with other categories of hazardous waste or with non-hazardous waste unless approved in advance by the Environmental Protection Agency (EPA) or the local authority.
- Do not put liquid slops or cooking oil into compactors. This mistake can lead to a discharge, during uplift or transport, causing slippage hazards.
- Do provide the service provider with a safe means of access to and egress from your on-site waste storage area at agreed times.
- Do train staff to store and handle waste streams correctly on-site.

#### Getting the Documentation right

- Do develop a written procedure if necessary.
- Do realise a waste service provider cannot accept packaging waste for disposal unless the producer declares compliance with Article 5 of the Waste Management (Packaging) Regulations 2003, i.e. be self compliant or a member of Repak.
- Do provide information to the waste service provider on the safe working procedures in force on-site and any temporary hazards associated with the collection and handling of the waste.
- Do obtain documentary proof of waste transfer, receipt and final recovery or disposal by the waste service provider(s) involved.
- Do realise that movement of hazardous waste within the state must be accompanied by a consignment note (C1 form) in accordance with the Waste Management (Movement of Hazardous Waste) Regulations.
- Do be aware that waste transferred out of the state must comply with the requirements of the Transfrontier Shipment (TFS) Regulations.
- Do keep detailed records of all hazardous waste shipments for a minimum of three years. These records should include TFS and C1 documentation.

#### Upgrading your waste containers

- Do ensure that containers are suitable for their waste e.g. hazardous waste is generally stored in UN approved containers.
- Do check that waste containers are adequately labelled and old labels are removed.
- Do provide that all waste containers are stored properly and securely.
- Do make sure that each waste container gives an accurate description of a waste, allowing it to be handled, transported, stored and recovered/disposed responsibly - a waste contractor may reject a consignment if not described accurately.

#### Choosing/working with your service provider

- Do examine the credentials of prospective waste service provider(s) and their facilities/services.
- Do verify this information and the waste service provider's compliance history with the Environmental Protection Agency (EPA) or local authority.
- Do ensure that the waste haulage contractor (who collects the waste) holds a valid waste collection permit in accordance with the Waste Management (Collection Permit) Regulations.
- Do ensure the service provider's facility has sufficient capacity to accept and deal with your waste stream in the correct manner.
- Do ensure that the facility's license authorises it to accept the particular type of waste involved.
- Do ensure your waste is collected and delivered to an appropriately licensed/permitted or permitted/registered facility. Under waste management law all waste management facilities must be either licensed by the EPA or permitted/registered by the relevant local authority.
- Do liaise with your service provider on designing a waste storage area on-site. Talk to your service provider about maximising the use of your waste management equipment on-site e.g. bins and balers.
- Do notify the service provider if there is any changes in the waste's composition.

### Don't

- Do not transfer waste to hauliers who do not have a valid waste collection permit.
- Do not move hazardous waste within the State without a consignment note (C1 form).
- Do not use unlicensed facilities for waste disposal/recovery. It is illegal.



IRISH WASTE MANAGEMENT  
ASSOCIATION

This page has been kindly compiled by the Irish Waste Management Association.

### Checklist of Waste Contractors' licences and permits

Waste Licence	This is issued by the EPA and defines the nature of environmentally acceptable waste management activities at a waste facility. Details of facilities with a waste licence can be obtained from the EPA.
Waste Collection Permit	This is issued by the local authority and authorises waste collection activities. Holders of a waste collection permit can only collect within the jurisdiction of the issuing local authority and they are reviewed every 2 years. Hauling waste or passing waste on to an unauthorised collector is an offence.
Waste Permit	The local authority issues this permit. It legitimates the operation of waste infrastructure that is not big enough or does not pose a large enough threat to the environment, to warrant a waste licence. It is usually issued for the temporary storage of non-hazardous waste for more than 6 months. It is up to you to ensure that your contractor has a permit for the area in which waste is being collected and whether the proposed waste movement is in accordance with any conditions contained in the permit.
Registration Cert	Issued by the local authority for the temporary storage of hazardous waste (less than 6 months).
C1 Form	<p>This is used to track movements of hazardous waste from its source to the waste management facility, to be used for disposal or reclamation. It needs to be completed by each party in the waste transaction. Exceptions from using a C1 form are:</p> <ul style="list-style-type: none"> <li>• Authorised movements of hazardous waste when such materials are to be exported from Ireland to other countries.</li> <li>• Hazardous waste collected from bring centres or by segregated collection services provided to members of the public.</li> <li>• Transfer of waste oils.</li> <li>• Movement of ELVs.</li> </ul>
Transfrontier Shipment form (TFS)	<p>This is required when exporting waste from Ireland for disposal, as well as for hazardous wastes passing to recovery. It is made up of 2 parts:</p> <ul style="list-style-type: none"> <li>• Notification form, which must be completed before waste is moved. This sets out the advance consent of the affected EU member states.</li> <li>• Movement/Tracking form, which accompanies the shipment when it is moved. It provides information on the actual movement of each load.</li> </ul>

## CASE STUDY

### REDUCING AND RECYCLING AT JURYS INN, CHRISTCHURCH JURYS INN

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The Jurys Doyle Hotel Group, one of the fastest growing hotel chains in Europe, has recently won a Repak award for their commitment to waste minimisation and recycling. Overall, the Jurys Doyle Hotel Group is recycling over 280 tonnes of glass and 90 tonnes of cardboard each year as well as 35 tonnes of office paper and 40 tonnes of newspapers!

Jurys Inn Christchurch employs several initiatives to reduce waste. These include:

- Cooperation with suppliers has ensured the reduction of cardboard entering the property.
- All food waste is separated and put into food bins, the contents of which are composted.
- Waste oil is collected and disposed of.
- Non-returnable bottles are segregated into individual bottle banks for clear, green and brown glass which REHAB collect and recycle.
- All Departments collect newspapers and office paper that is then recycled.
- Cardboard is broken down and turned into bales on site.

A contributing factor to this success in Jurys Inn Christchurch is that two team trainers involve all members of staff from their induction day. Posters and reminders are also placed on staff notice boards to ensure 100% compliance with the waste management strategy.

As a result of these initiatives staff at Jurys Inn Christchurch have noticed a huge reduction in the amount of waste created since they started recycling and reducing. This fact is illustrated using the example of the compactor: prior to the implementation of the above initiatives the compactor was emptied every 1-2 weeks, in comparison to every 3-4 weeks now.



Useful contacts

WHO  
to contact

### **Race Against Waste**

Tel 1890 - 667639  
Email [info@raceagainstwaste.ie](mailto:info@raceagainstwaste.ie)  
Web [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie)

### **Local Authorities**

Your Local Authority has the ultimate responsibility for waste management planning in your area. For information on waste management in your area contact your Local Authority Environmental Awareness Officer who will be happy to assist you. Check out [www.raceagainstwaste.ie](http://www.raceagainstwaste.ie) for contact details of your local authority.

### **Environmental Protection Agency (EPA)**

Johnstown Castle Estate,  
Co. Wexford,  
Ireland.

Tel (053) 60600 or 1890 335599  
(calls at local rate)  
Fax (053) 60699  
Email [info@epa.ie](mailto:info@epa.ie)  
Web [www.epa.ie](http://www.epa.ie)

### **Office of Environmental Enforcement (OEE)**

Email: [oe@epa.ie](mailto:oe@epa.ie).

### **South East Region**

Environmental Protection Agency  
P.O. Box 3000  
Johnstown Castle Estate  
Wexford

Phone: 053 60600 or  
Lo-call 1890 335599  
Fax: 053 60699

### **East/North East Region**

Environmental Protection Agency  
McCumiskey House  
Richview  
Dublin 14

Phone: 01 268 0100  
Fax: 01 2680199

### **South/South West Region**

Environmental Protection Agency  
Inniscarra  
Co. Cork

Phone: 021 487 5540  
Fax: 021 487 5545

### **West/North West Region**

Environmental Protection Agency  
John Moore Road  
Castlebar  
Co. Mayo

Phone: 094 21588  
Fax: 094 21934

### **Department of the Environment, Heritage and Local Government**

Custom House,  
Dublin, Ireland.

Tel (01) 888 2000 - or - 1890 202021  
(calls at local rate)  
Fax (01) 888 2888  
Email [department@environ.ie](mailto:department@environ.ie)  
Website: [www.environ.ie](http://www.environ.ie)

### **ENFO**

17 St. Andrew Street,  
Dublin 2, Ireland.

Tel (01) 888 2001 - or - 1890 200 191  
(calls at local rate).  
Fax (01) 888 3946  
E-mail [info@enfo.ie](mailto:info@enfo.ie)  
Website [www.enfo.ie](http://www.enfo.ie)

### **Enterprise Ireland - Environment Policy Glasnevin,**

Dublin 9,  
Ireland.

Tel (01) 808 2229  
Fax (01) 808 2259  
Email [envirocentre@enterprise-ireland.com](mailto:envirocentre@enterprise-ireland.com)  
Website [www.envirocentre.ie](http://www.envirocentre.ie)

### **The Irish Waste Management Association**

84-86 Lower Baggot Street,  
Dublin 2, Ireland.

Tel (01) 605 1672  
Fax (01) 638 1672  
E-mail [iwma@ibec.ie](mailto:iwma@ibec.ie)

### **Repak Limited - Sales Department**

Red Cow Interchange Estate,  
1 Ballymount Road,  
Clondalkin,  
Dublin 22.

Tel (01) 4670190  
Fax (01) 4670197  
E-mail [sales@repak.ie](mailto:sales@repak.ie)  
Website [www.repak.ie](http://www.repak.ie)

Worksheets for waste audit

# WORKSHEETS

# Section 10 - WORKSHEETS FOR WASTE AUDIT

Use these worksheets in conjunction with Section 6

## Worksheet 1-Waste Audit Form

Please photocopy and reuse

Date Waste Audit \_\_\_\_\_

Source of Sample \_\_\_\_\_

Sample collected

1 Day's Sample

Representative sample

Team members conducting waste audit \_\_\_\_\_

Factors affecting representativeness of audit

Waste Component	Net Component Weight	% of Total Sample Weight	Weight of Annual Waste
<b>Paper</b>			
Stationery			
Computer			
Newsprint			
Cardboard			
Magazines			
Other			
<b>Total Component Weight</b>			
<b>Plastics</b>			
PET			
PVC			
Polystyrene			
Other			
<b>Total Component Weight</b>			
<b>Glass</b>			
Clear			
Green			
Brown			
Other			
<b>Total Component Weight</b>			
<b>Metal</b>			
Aluminum			
Tin coated steel			
Ferrous Metals			
Other			
<b>Total Component Weight</b>			
<b>Other</b>			
Textiles			
Rubber			
Leather			
Inorganic (ceramic, etc)			
Ink Cartridges			
Other			
<b>TOTALS</b>			







Managing specific types of wastes

# SPECIFIC

types of waste

# Section 11- Managing specific types of wastes

## 1. MUNICIPAL WASTE

**Municipal waste as defined by the EPA is household waste as well as commercial and other waste, which because of its nature or composition is similar to household waste. Household waste can simply be described as the waste that is produced for the purposes of living. Commercial waste in contrast is the waste that is produced in premises that are solely for trade or business. For the purpose of Action at Work we are concentrating on municipal waste that is produced by commercial businesses.**

Under the Waste Management Act 1996, we as a nation are required to follow a scheme of prevention, reduction, reuse and recycling of waste, with the overall aim of reducing the need for landfills and thereby protecting our environment. Under the 1998 Irish Policy Statement Changing Our Ways the following targets, which are to be achieved over a 15 year time period are set for recovery of waste:

- Diversion of 50% of overall household waste away from landfill
- Minimum of 65% reduction in biodegradable waste going to landfill
- Recycling of 35% of municipal waste
- Recycling of at least 85% of C&D waste by 2013

Municipal solid waste consists of general household items such as packaging, food waste, clothing, bottles, garden waste, bulky items, electronic equipment etc. It includes the following waste types:

- Paper
- Glass
- Metal
- Plastic
- Biodegradable (food and garden)
- Textile
- Hazardous items such as batteries, motor oil etc.

Commercial waste is more diverse than household waste. This is mainly due to the fact that commercial waste is produced across a wide range of sectors, with materials originating from retail, institutions and services such as offices, supermarkets, hotels, restaurants etc. For the purpose of this programme it includes the following waste types:

- Office Waste
- Shipping and Deliveries
- Bulky goods
- Construction and Demolition Waste (C & D)
- Canteen/Catering Waste
- Hazardous Waste
- Vehicle Waste
- Electrical and Electronic
- Green Waste
- Laboratory Waste

The above waste types are discussed in detail within this Section of the programme. All of these waste types can be reduced, reused and recycled. The least favourable option in waste management is disposal and efforts should therefore be made to reduce the amount of waste going to landfill.

The following are a number of suggestions as to how to reduce, reuse and recycle what goes into our bin. These can easily be implemented along with a recycling programme into the day-to-day running of your business.

### How to Reduce Municipal Solid Waste

Reduction of the waste takes place at the source or in other words where the waste is produced. This places responsibility with the producer. There are a number of ways that businesses and consumers can help to reduce municipal waste. This involves more careful purchasing of products e.g. by avoiding products that are heavily packaged as this creates extra waste. The benefits of this option are that by careful purchasing we are reducing disposal costs by reducing the amount of waste produced. This is a cost effective and efficient solution.

1. Purchase durable, long lasting products.
2. Avoid over packaged products.
3. Purchase products that can be reused again.
4. Purchase products in bulk.
5. Avoid disposable items.
6. Buy refills. Dispensers can be used in many cases e.g. for soap, paper towels etc. This helps to cut down on wastage and saves on disposal costs.
7. Only buy the amount that you will use.
8. Buy products that are guaranteed by a warranty.

### How to Reuse Municipal Solid Waste

Reuse is another favourable option. This not only cuts down on disposal costs but it also saves on reprocessing of materials. Reusing is often the best way of reducing waste.

1. Where possible an item should be reused again. This is even more beneficial than recycling, as the item does not need to be reprocessed before it can be used again.
2. Items can also be repaired where possible. Such items should be maintained regularly to ensure longevity. An example is to use rechargeable items such as rechargeable batteries.
3. The organic component of the bin, which includes food and garden waste can be separated and used as compost.

### How to Recycle Municipal Solid Waste

1. Waste can be segregated. This can be collected by a waste contractor with a valid waste collection permit. The following materials can be collected.
  - Aluminium cans
  - Glass bottles
  - Plastic bottles
  - Newspapers, cardboard.
2. The organic fraction of the waste can be separated and collected by a waste contractor. This can then be sent to a centralised composting facility where the finished product is a useful soil conditioner
3. Hazardous items such as waste oil and batteries, etc., can be collected for recycling. Again such hazardous items can be disposed of adequately by a waste collector with a permit.

## 2. CANTEEN/CATERING WASTE

**Canteen and catering waste can be defined as all waste food, which includes used cooking oil that is produced in restaurants, catering facilities and kitchens, which prepare food for human consumption. This does not include supermarkets, butchers or factories, which produce food for retail sale. Within the canteen/catering sector a large amount of the waste generated can be reduced, reused and recycled.**

**By developing a recycling programme you can reduce your waste disposal costs and effectively create space, which had been previously taken up by waste storage containers.**

The National Strategy on Biodegradable Waste (Draft Report April 2004) sets the following target for biodegradable waste:

A minimum 65% reduction in biodegradable municipal waste consigned to landfill. This is to be achieved over a fifteen-year timescale. Separate collection of food and garden waste, from both the commercial and domestic sectors, for biological treatment has been identified under the draft Strategy as one of a range of integrated measures designed to divert biodegradable municipal waste from landfill. In this context, it is important to note that the EU has recently laid down strict legislation and health rules on the management and use of animal by-products. As a country with a large dependence on agriculture it is important that we exercise due caution when dealing with activities that have a potential to impact adversely on animal health and food safety. Ireland has therefore adopted particularly stringent national legislation on the management and use of animal by-products. In pursuing the twin objectives of developing the necessary biological treatment capacity in Ireland and the need to maintain animal health and food safety standards, due care and consideration must be given to ensuring adherence to the appropriate national criteria.

### Food Waste / Brown Waste

Previously all food waste was disposed of in landfills. This is no longer an option as landfills are now reaching their lifetime capacity. Separation of food waste for composting is an option that is becoming increasingly more popular. However, due to the large amount of food waste generated in the catering industry, it may not be viable to have an onsite composting system. Instead, organic compostables can be collected, separated and sent to a centralised composting plant.

#### There are many benefits to composting:

- It is a natural method of disposal.
- There is a reduction in the quantity of waste that is to be disposed of and therefore there is a reduction in disposal costs.
- There is a reduction in the need to rely on landfills for disposing of waste.
- The waste is converted into a valuable and beneficial end product, compost, which can be sold commercially.
- Composting reduces the amount of methane gas emissions, which contributes to global warming, as methane is a greenhouse gas.
- The finished product is a good soil fertiliser.

Any organic material that is biodegradable\* can be composted. This includes:

- Fruit and vegetables that are cooked or uncooked
- Tea bags and coffee grounds
- Bread
- Pasta
- Rice
- Kitchen paper
- Crushed egg shells
- Cereal
- Paper.

Items that cannot be composted:

- Raw and uncooked meat
- Poultry and fish
- Bones, oils, greases, including butter and mayonnaise.

\*Biological/Biodegradable Waste is any waste consisting of organic materials, which can be broken down by natural processes. This includes food waste generated in kitchens / canteens. This waste can be broken down naturally by bacteria, which feed on the organic material i.e. material that was once living, and the end product is compost. The following are some strategies that can be implemented in canteens and catering facilities to help deal with the waste problem.

#### How to Reduce Canteen/Catering Waste

1. Where possible use reusable trays, cups, cutlery and plates in the canteen.
2. Milk, juices and soft drinks should be used in bulk from dispensers rather than in individual cartons, bottles and cans, or use drinks in concentrated form.
3. Separate bins should be provided in canteens for the various items that are to be recycled such as aluminium cans, paper, plastic packaging and glass. These should be labelled clearly to easily identify the waste type.
4. Avoid using items that have individual portions such as mayonnaise, ketchup, sugar, pepper, salt and vinegar. Instead provide sugar bowls, salt and pepper cellars, dispensers for ketchup and mayonnaise, small serving dishes for butter and jam, and finally pitchers for cream.
5. Buying items in bulk will help to reduce the amount and cost of packaging to be recycled.
6. If large amounts of food are left as wastage, consider reducing the size of portions served.
7. With regard to cooking oil it may be useful to install grease traps or interceptors in kitchen sinks, which can resolve drainage problems.
8. For take-out food, minimal packaging should be used for wrapping.
9. To prevent wastage, label all stock with the date of purchase and the perishable date and rotate perishable items.

## 2. CANTEEN/CATERING WASTE

continued

### How to Reuse Canteen/Catering Waste

1. Where possible use reusable cups, silverware and plates that are washable rather than disposable items.
2. Salt, pepper and sugar dispensers should be used instead of individually packaged items.
3. To avoid wasting food, meat cuttings and vegetables can be used as the basis for preparing stock.
4. To avoid the use of plastic packaging try buying fruit and vegetables in bulk. This way the cardboard packaging can be recycled.
5. Glass jars and containers can be reused for storage.
6. Instead of using paper kitchen towels an alternative is to use washable dishcloths and washable hand towels.
7. Use cloth linens and stained tablecloths as rags, dishcloths.
8. Use cloth napkins and table linen instead of paper/disposable ones.
9. Use reusable coffee filters as opposed to paper filters.
10. Used cooking oil can be collected and sold back to the manufacturer.

### How to Recycle Canteen/Catering Waste

1. As few as possible waste bins should be placed in the canteen and many recycling bins should be placed in the kitchen to make recycling easy and wasting harder.
2. A composting programme can be implemented in the kitchen to deal with left over food waste. This has many benefits - see below.
3. Containers and bins for recycling steel/tin cans, glass jars and bottles, milk cartons should be provided in a designated area to encourage and promote recycling throughout the canteen.
4. Recycle bins should be placed directly beside waste bins as without this consistency recyclable material ends up in the waste bin.
5. Where possible glass should be chosen over plastic, as it is more easily recycled.

### Disposal

This is the least favourable option in waste management and handling and therefore efforts should be made to reduce the amount of waste going to landfill.

Under the Directive of the Disposal of Waste Oil (75/439/EEC) it is legally required for member states to ensure the safe disposal of oil. The main points of this Directive are:

- Waste oil must be recycled as much as possible.
- Disposal of waste oils to water or drainage systems is prohibited
- Facilities involved in the disposal of waste oils must obtain a permit - the facilities can be inspected at anytime by the competent authority.
- A facility that produces, collects and/disposes of more than 500 litres of waste oils per year must keep records of the quantity, quality, origin and location of waste oils.

**It is illegal to dispose of oil to waters or sewers under the Local Government (Water Pollution) Act 1977 and the Local Government (Water Pollution) Act 1990. Failure to follow the legislation results in a fine for each day the offence is committed.**

Cooking grease, fats and oils cannot and should not be disposed of down the sink. If disposed of incorrectly these wastes can clog drain and sewer networks.

### How to dispose of oil correctly

The most important thing to remember is to never dispose of cooking oil by the kitchen sink/drain. Cooking oil can be collected and recycled which has many benefits:

- The collection of oil can generate employment.
- Costs savings arise for industry and consumers.
- Recycling helps to conserve supplies of petroleum, which is a non-renewable energy source.
- Recycling of oil helps to extend the life and usefulness of natural resources.

If oil is collected for recycling, this must be carried out by an appropriate waste collector with a valid collection permit that is specialised in oil recovery.

Producers of quantities of waste oil in excess of 500 litres per annum are subject to the special requirements of the Waste Management (Hazardous Waste) Regulations, 1997 (S.I. No.163 of 1997). These regulations require that hazardous waste producers keep specified records of any hazardous waste on their premises. The following information is to be recorded:

- The quantity, quality, origin and location of waste oils produced.
- The quantities of waste oil transferred to other persons, the dates of such transfers and the name of persons to whom such waste was transferred.

## 3. CONSTRUCTION & DEMOLITION WASTE

**Construction and Demolition (C & D) Waste consists of all waste originating from construction, renovation and demolition activities, such as rubble, bricks and tiles. The construction and demolition industry is one of the largest producers of waste in Ireland.**

**C & D waste can be further broken down into the following:**

- Concrete, bricks and tiles
- Asphalt, tar & tar products
- Metals
- Soil and rubble.

The National Waste Database also defines C & D waste as above in addition to all wastes that are mentioned in Chapter 17 of the European Waste Catalogue. Within this chapter C & D waste listed contains 44 waste types and of these 16 are regarded as hazardous wastes. These would include materials such as asbestos, tar, lead, paint, preservative residues, adhesives, sealants and some plastics. These hazardous materials are not to be mixed with non-hazardous materials. For example, tar is not to be separated and piled up with concrete and bricks. If this occurs the whole pile is hazardous and should be disposed of as a hazardous waste.

### Benefits of Recycling

There are many benefits to recycling Construction and Demolition waste. The main benefit would be the diversion of C & D waste away from landfills and an emphasis on reuse and recycling of materials. With more emphasis being focused on reuse and recycling there is a reduction in the need for virgin raw materials.

Those involved in the C & D industry have a large part to play in reducing/minimising the amount of C & D waste being landfilled. Those involved include builders, DIY sector, local authorities and other public bodies. The National Construction and Demolition Waste Council (NCDWC) launched a voluntary construction industry initiative aimed at the prevention, minimisation and recycling of C & D waste. The following are a number of suggestions to help in the minimisation of surplus and damaged products and materials. For more details there are Best Practice Guidelines for C & D Waste Management Planning (see [www.cif.ie](http://www.cif.ie) or [www.ncdwc.ie](http://www.ncdwc.ie)).

### How to Reduce C & D Waste

- 1.Ensure that correct quantities of materials are ordered.
- 2.Make sure that the material is stored correctly until use.
- 3.Use on site materials if possible.
- 4.Salvage material from demolition sites, which may be reused at a later stage.
- 5.To avoid repeating excavations it is recommended to co-ordinate service providers such as water, gas and sewer.
- 6.Have a management plan to help reduce surplus material.
- 7.Ensure that contracts for C & D work require waste to be segregated and stockpiled for recycling.
- 8.Appoint a person who will deal with waste management on site.
- 9.Store and handle materials safely, securely and correctly on site to reduce wastage.
- 10.Reduce packaging waste by asking suppliers to wrap the materials in reusable packaging or padding before delivery. Alternatively return the packaging after the material has been delivered.

### How to Reuse C & D Waste

The different materials can be separated into stockpiles for recovery and reuse.

- 1.One example of reuse is soil and rubble. This is can be used as topsoil for landscaping.
- 2.Rubble can be processed and used for a number of purposes including aggregate for roads.
- 3.Leftover masonry material can be crushed on site and reused in driveways.
- 4.With regard to demolition waste, wood products such as doors, etc., can be salvaged and collected, then reused or sold for future use.
- 5.During renovation projects, many items can be salvaged and used later on. Typical items that can be reused are plumbing fixtures, doors, cabinets, windows, lighting fixtures, decorative items including fireplaces and stonework, ceiling and floor tiles.

### How to Recycle C & D Waste

- 1.Almost all C & D waste is capable of being recycled. The waste is segregated and separated. The recycled material can be used in landscaping, for road construction etc.
- 2.Waste metal can be recycled also. Aluminium, copper and brass can be collected and sold to scrap metal yards – a cost effective solution.

### Disposal of C & D Waste

Disposal is the least favourable option, as it means the waste will be landfilled. Irish policy, in particular the 1998 policy statement entitled Changing Our Ways, aims to recycle at least 85% of C & D waste by 2013 thus making disposal of C & D waste the least desirable and viable option.

### 4. BULKY WASTE

**Bulky goods can be defined as items that are too large to fit in a normal conventional waste container/bin and therefore cannot be handled by normal MSW processing, collection and disposal methods. Bulky goods include items that can be reused or recycled such as upholstered furniture (sofas, soft furnishings, beds, mattresses, carpeting) and general household furniture (cupboards, tables, chairs) as well as fencing and DIY off-cuts. For the purpose of this section it will not include large household items such as white goods (refrigerators, freezers, etc.) and brown goods, as they will be covered by the Directive on Waste Electrical and Electronic Equipment (WEEE).**

#### Benefits of Recycling

Many of these bulky items can be reused or recycled, so dumping of them is unacceptable. Most furniture consists of timber in some form and recycling facilities for timber are increasingly expanding. Various types of timber can be recycled:

- Soft and hardwood waste
- Pallets
- Packaging timber waste
- Timber cut-offs
- Fencing
- Floorboards
- Plywood.

The benefits of recovery of this material is that it reduces the amount of wood and timber waste being sent to landfill and as the recycling of timber grows, it reduces the need for new timber to be produced. Timber is normally collected in unchipped form, sent to a facility where it is shredded to chip form and then it can be sent to outlets where the chipped timber can be used as a raw material, e.g. as a fuel, to make chipboard etc.

#### How to Reuse Bulky Items

1. Bulky items such as furniture can be reused by donating them to charitable organisations for resale.
2. They can be reused by revamping them, and using them in other parts of your home.
3. Bulky items such as mattresses can be sent back to the manufacturer to be repaired and recirculated back on the market.
4. For carpets, reuse can involve using leftover pieces for rugs or mats.

#### How to Recycle Bulky Items

1. Furniture can be shredded and the wood chips used as mulches for composting. It is important to note that wood that is treated with varnishes, etc., cannot be used for composting. Wood chips and wood pellets can also be used as wood fuel as these are highly efficient sources of clean and renewable energy.
2. Mattresses can also be recycled as they are difficult to process at a landfill, as they do not undergo compaction well. The mattresses are passed into a shredder and this separates the foam from the springs and wood frame. Foam is used in carpet underlay. Other saleable materials in a mattress include the steel and cotton fibres.
3. There is not much recycling of carpets in Ireland currently. However when purchasing a new carpet you can ask the retailer if any manufacturers will claim back their carpet.



## 5. GREEN WASTE

**Green waste is the waste that arises from landscaping or gardening work and generally consists of leaves, twigs, small branches, bushes and soil. The waste is biodegradable which means that it can be broken down by natural process.**

The National Strategy on Biodegradable Waste (Draft Report April 2004) sets the following target for biodegradable waste:

A minimum 65% reduction in biodegradable municipal waste consigned to landfill. This is to be achieved over a fifteen-year timescale. Separate collection of food and garden waste, from both the commercial and domestic sectors, for biological treatment has been identified under the draft Strategy as one of a range of integrated measures designed to divert biodegradable municipal waste from landfill. In this context, it is important to note that the EU has recently laid down strict legislation and health rules on the management and use of animal by-products. As a country with a large dependence on agriculture it is important that we exercise due caution when dealing with activities that have a potential to impact adversely on animal health and food safety. Ireland has therefore adopted particularly stringent national legislation on the management and use of animal by-products. In pursuing the twin objectives of developing the necessary biological treatment capacity in Ireland and the need to maintain animal health and food safety standards, due care and consideration must be given to ensuring adherence to the appropriate national criteria.

### Benefits

There are many benefits to reusing and recycling green waste:

- Composting provides you with a valuable soil fertiliser.
- It reduces disposal costs while also creating a valuable usable product.
- It is a natural method of disposing of material which would otherwise be landfilled.

Biodegradable waste can be defined as any waste consisting of organic materials, which can be broken down by natural processes. This waste can be broken down naturally by bacteria, which feed on the organic material i.e. material that was once living, and the end product is compost.

There are a number of materials that can be composted. They include the following:

- Garden prunings
- Leaves
- Grass clippings
- Weeds
- Plants and flowers
- Hedge trimmings.

Items that cannot be composted are as follows:

- Stones or gravel
- Concrete, dirt or rocks
- Animal waste
- Treated or painted wood
- Glass
- Metal
- Household waste.

### How to Reduce Green Waste

There are a number of ways in which to reduce, reuse and recycle green waste. These can easily be implemented into landscaping and gardening practices.

1. A landscape design that requires little or no maintenance can help to reduce waste and water usage.
2. Only purchase as much soil as you need for the job in hand. This helps to prevent excess material from accumulating.
3. When expecting deliveries of soil/sand and other such materials, ask the driver(s) to tip the material away from drains. This is to avoid wastage from the material running off to storm water drains and sewers.
4. Careful planning can also help to reduce green waste e.g. planning of what planting is to take place will help to reduce the excess plants being leftover.

### How to Reuse Green Waste

1. Grass clippings and leaves can be used as compost, a valuable soil conditioner.
2. After rain, wet leaves can be collected together and left to decay. This forms a mulch which can be dug into the soil and help to fertilise it.
3. "Grass cycling" is another option for reuse. This involves leaving clippings on the lawn when mowing. This quickly decomposes and returns valuable nutrients to the soil.
4. Woody shrubs and cuttings can be passed through a shredder and made into wood chips, which can be used around trees and flowerbeds.
5. Trees can be shredded and the wood shavings/chips can be used in landscaping.

### How to Recycle Green Waste

1. Green waste can be used as composting material, which is a good soil fertiliser. This can be collected by a contractor, who sends the waste to a centralised composting plant where it is processed for use.

## 6. HAZARDOUS WASTE

**A hazardous waste can be defined as a solid waste or a combination of wastes, which because of its quantity, concentration, physical, chemical, or infectious characteristics poses a substantial or potential hazard to human health or the environment when not properly treated, stored, transported, disposed of or managed correctly.**

For a waste to be classed as hazardous it must exhibit one of the following properties

- Explosive
- Infectious
- Irritant
- Ecotoxic
- Carcinogenic
- Corrosive
- Flammable
- Mutagenic
- Toxic
- Oxidising
- Toxic for reproduction
- Harmful
- Residuary hazardous property

Hazardous wastes can be found in a wide variety of products over a broad range of activities. Such activities may include the following:

Activity	Products
Car Maintenance	Waste oils, brake fluids, batteries, cleaning agents
Cleaning	Cleaning solvents and agents
Printing	Inks, paints and dyes
Wood treatment	Preservatives, paints, cleaners, glues
Garden	Biocides, weed killers, fertilisers
Metal treatment	Acids, alkalis
Agriculture	Pesticides, medicines, sheep dips
DIY	Paints, solvents
General e.g. household products	Fluorescent tubes, lubricating oils, cleaners, medicines

The EU directive on Hazardous Waste provides a framework for the management and disposal of hazardous waste. The main significance of the Regulations is that hazardous waste producers are required to keep records of hazardous waste on their premises and it relates specifically to batteries, Poly Chlorinated Biphenyls (PCBs), waste oils and general waste.

Hazardous wastes should be recycled as if not properly managed they can be detrimental to human health and the environment. They can cause problems such as:

- Contamination of water supplies.
- Pollution of land, air and water, which may endanger human and animal health.
- Can cause fires or toxic fumes.
- Dumping of hazardous waste is illegal and can result in fines and lead to costly clean up operations.
- Mixing hazardous waste with non-hazardous waste for disposal ultimately causes problems with collection systems and then disposal in landfills. It can also put workers' health at great risk.

### How to Reduce Hazardous Waste

1. Only the amount of the product needed should be purchased. This is to avoid excess wastage and storage of large quantities of the product.
2. The useful life of the material should be maximized before discarding it.
3. The hazardous waste should be managed properly.
4. To reduce hazardous waste read the labels of products when purchasing and to try to select the least hazardous product.
5. Non-toxic cleaners can be purchased.
6. Water base products should be chosen where possible over solvent based products e.g. water based paints, glues etc.
7. Instructions should always be read carefully and followed.
8. Products should be handled with care to reduce any unnecessary spills.
9. Any excess product, spills or drips should be returned to the storage container immediately.

## 6. HAZARDOUS WASTE

continued

### How to Reuse Hazardous Waste

1. Oil based paints are hazardous as they contain heavy metals and are flammable. These can be collected and then shipped abroad for reuse as a fuel for industry.
2. Liquids such as oils, fuels etc are flammable. They are collected and shipped abroad, and used as a fuel in industry.
3. Water based paints such as varnishes, stains, sealers etc. may contain mercury and so therefore are classed as hazardous. It can be recycled into latex-based paints.

### How to Recycle Hazardous Waste

Recycling involves collection of the waste for reuse or for converting the waste into a new product that is no longer hazardous. The following are some recycling options that could be followed.

1. Hazardous waste should always be collected and disposed of through a reliable hazardous waste management company with a valid licence.
2. Fluorescent lights are considered to be hazardous as they contain mercury and must be diverted from landfills. Therefore they should be collected by a special waste collector who is specialised in Hazardous Waste Collection and who has the relevant waste collection permit.
3. Batteries and vehicle batteries are hazardous waste as they contain dilute sulphuric acid and lead. Unlike households who can deposit such items in a civic amenity centre, businesses must have the items collected by a hazardous waste contractor for recycling.
4. Used oils such as fluid oils can be recycled. (See End of Life Vehicles) This should never be disposed of in sewers or drains.
5. Separate hazardous chemicals from non hazardous chemicals. If the two are mixed, then the waste will have to be treated as hazardous.

### Disposal of Hazardous Waste

1. Pesticides and herbicides are toxic to humans and animals. They are collected and shipped abroad where they are incinerated at high temperatures.
2. Acids and bases are classed as hazardous as they are corrosive, and can burn the skin. These wastes are incinerated.
3. Bleaches and other oxidizers are also corrosive and they too are incinerated at high temperatures.

### 7. ELECTRICAL AND ELECTRONIC WASTE

All offices contain many electrical and electronic items for the day-to-day running of a business, such as:

- Telephones
- Printers
- Photocopiers
- Laptops
- Mobile Phones
- Scanners
- PCs
- Fax Machines
- Microwaves
- Toasters
- Kettles.

These electrical and electronic items are considered to be hazardous as they contain many hazardous components such as Lead, Mercury, PCBs and Cadmium. These are usually found in different components of the item such as circuit boards, batteries etc.

These items are often updated with newer models, and so the older or broken item is disposed of. Previously these were disposed of in landfills. However, many of these items have parts that can be reused and recycled. The introduction of the Directive on Waste Electrical and Electronic Equipment (WEEE) is encouraging people to recycle and reuse electrical and electronic items.

Reducing waste is the most important option to be looked at. This lies mainly with the producer who is responsible at the manufacturing stage to improve the design of their products in order to avoid the generation of waste. This is a responsibility under the Waste Electrical and Electronic Equipment (WEEE) Directive. Under the Directive the main aims are to:

- Prevent and minimise the amount of waste produced and to maximise the amount that is recycled.
- Reduce the amount of waste being landfilled.

There are however a number of things that we as consumers and users can do.

The following is a useful guide as to how to reduce, reuse and recycle WEEE waste generated in the home and more importantly in the workplace.

#### How to Reduce

1. Durable products should be purchased. By purchasing a more expensive, durable electronic product more money can be saved in the long run.
2. Buy equipment that is capable of being upgraded. Upgrading of an item can often involve replacing a single component in the unit. Talk to the retailer about this before purchasing equipment.
3. Invest in equipment that helps to reduce waste.
  - This includes items such as high quality, durable items that are capable of being repaired.
  - Equipment that uses rechargeable batteries rather than disposable batteries.
  - Reusable ink cartridges.
4. Printer, fax and photocopier cartridges can be collected and returned to suppliers or given to charity for recycling.
5. Computer screensavers are a waste of energy. The screen can be set as blank to save on energy.
6. Switch off computers outside of working hours. Alternatively install software that switches off computers automatically.
7. Computers can be switched off when you are away from your desk for long periods of time.
8. The monitor can be switched off if it is not in use and the computer is just being used as a server.

#### How to Reuse

1. Buy reusable and refillable toner cartridges.
2. Repairing an electronic device can be cheaper than replacing it with a new version.
3. Computers can be leased instead of buying them. This way when the product needs to be upgraded, the older unit is returned to the supplier and a new computer is purchased.
4. Use remanufactured office equipment.
5. Equipment that is still of use should be kept for use and not discarded. This would include monitors of pcs, which can be kept while the CPU can be upgraded. This helps to prevent waste as well as cutting down on costs.

#### How to Recycle

1. Computer and other electronic equipment can be recycled.
2. Some suppliers offer recycling services, where they take back products for dismantling and recycling. For more information contact your supplier to see if they offer this service.

## 8. LABORATORY WASTE

Laboratory waste is waste that is generated in laboratories in industry and in educational centres such as second level schools and universities. This waste can be broken down into a number of categories, which are as follows:

- Hazardous
- Clinical
- Biological
- Electrical
- Laboratory.

These categories can be further broken down depending on European legislation.

The treatment and disposal of Laboratory Waste falls under the Waste Management (Hazardous Waste) Regulations and the Safety, Health & Welfare at Work Act 1989. The main aims and provisions relating to these Acts can be summarised below.

- The Waste Management (Hazardous Waste) Regulations 1998 relates to the disposal of hazardous waste and outlines the details on recording waste types, quantities etc.
- The Safety, Health and Welfare at Work Act 1989 outlines the precautions companies must take to protect workers from the risk of biological agents they encounter in the workplace, which may cause illness.

Reducing laboratory waste will have a number of benefits, the main one being that less waste is generated, saving money and reducing disposal costs while also encouraging safety in the lab.

### How to Reduce Laboratory Waste

1. To reduce waste, the best solution is to look at purchasing procedures. Buy only what you need. This reduces wastage due to expiry etc.
2. Find a supplier who is reliable and who will deliver small amounts of chemicals on short notice. Also if possible see if the supplier will accept back unopened chemicals.
3. A centralised purchasing programme should be considered. This means that all orders are placed with a delegated person who may be able to take advantage of bulk pricing.
4. All chemicals and wastes in the lab should be labelled. A waste chemical is a chemical that has no use. This labelling system should be standardised.
5. Waste can be separated into the following waste streams for treatment, reuse or disposal;
  - Sharps including scalpels and syringes etc.
  - Glassware
  - Biological samples
  - General lab waste such as wipes, gloves, tissue etc.
  - Chemicals etc.

### How to Reuse Laboratory Waste

Reusing an item is often the best way of reducing waste.

1. Try to incorporate recovery activities during the experiment.
2. A chemical swap can be carried out with other institutions in your area.
3. All wastes should be segregated based on chemical incompatibilities e.g. hazardous and non-hazardous wastes should not be mixed together. The same is true of organic and inorganic waste.
4. Waste consisting of the same material type can be segregated.
5. Waste streams that are capable of being recycled should be stored separately e.g. recoverable metals or solvents.
6. Reusable syringes should first be cleaned and then sterilized before being reused.

### How to Recycle Laboratory Waste

1. Some material generated in the lab will be non-hazardous waste such as paper and packaging waste that can be recycled. To promote and encourage recycling of this material place recycling bins in the lab.
2. Make sure the recycle bin is labelled clearly e.g. place a label on the bin stating paper only, ensuring that hazardous wastes such as chemicals are not placed in the bin.
3. Bins for the collection of hazardous materials should be placed in the lab. These should be emptied regularly and looked after by lab personnel/technicians.
4. All waste in the lab should be collected by a waste collector with a valid waste collection permit, who is specialised in hazardous waste collection and who is licensed to treat and dispose of the waste.

### Disposal of Laboratory Waste

1. Lab glassware is not suitable for recycling, as its melting point is higher than that of conventional glass. Broken glassware should be collected in puncture proof containers and disposed of in large containers by technical staff. It is not to be placed in a normal waste bin.
2. Sharps such as syringes and scalpel blades should be collected in containers labeled "Sharps".
3. Biological waste such as agar plates, waste from dissections etc. should be separated and collected separately. Where appropriate this can be autoclaved.

## 9. OFFICE WASTE

Office waste is any waste generated within an office.

This consists mainly of paper waste and some packaging waste, which can be recycled. The benefits of introducing a recycling programme are numerous. First are the savings on waste disposal costs. Secondly it boosts staff morale and it can demonstrate the organisation's commitment to the environment, as well as enhancing the public image of the organisation.

There are two types of paper which can be recycled. The first is low-grade paper such as newspapers, magazines and the second is high-grade material, such as computer printouts.

The following are some ideas that will help in introducing a recycling programme with waste minimisation, reuse and recycling tips that can be easily implemented and integrated into the day-to-day running of the office.

The Waste Management Act 1996 is the main piece of legislation relating to office waste, which includes collection, and requirements as to how it should be dealt with. Under this act the aims are to:

- Prevent and minimise the production of waste and its harmful effects
- Encourage and support the recovery of waste

### How to Reduce Office Waste

1. To reduce the amount of paper accumulated in the office, only print the amount needed and limit the distribution of copies to only those that really need it
2. Computer printouts should be limited. Electronic e-mail can be sent to save on paper.
3. Data and reports can be stored on floppy disks, compact disks, memory sticks etc. to save on paper copies.
4. Single spacing can be used as a format when printing reports.
5. Photocopy and print double sided. This can be set as a default setting on printers and photocopier machines.
6. Before printing multiple copies, print a single copy. Check this copy for errors. Use the spell check and other facilities on the computer.
7. Draft documents should be reviewed on screen before printing.
8. Drafts and other internal documents can be printed on paper that has been used on one side.
9. Scrap paper can be used to make note pads to take telephone messages.
10. Printing and photocopying should be carried out only when it is absolutely necessary.
11. Have a centralised office filing system. This reduces the need for multiple files reducing paper use.
12. Office equipment should only be purchased as needed. This is to cut down on excess materials being wasted.
13. Employees should regularly empty out their desk and return any unwanted office supplies to the stationery cupboard.
14. Newspapers can be shared at work to reduce the amount of paper to be recycled.
15. Cancel any unwanted subscriptions to avoid unwanted paper accumulating.
16. Office announcements can be posted in a centralised place to reduce the paper trail.
17. All employees should be encouraged to use less paper, and to recycle.
18. Regularly service office equipment, particularly photocopier machines and printers, to prolong their lifespan.

### How to Reuse Office Waste

1. Use both sides of paper. If used only once, use a second time for internal correspondence or for draft reports.
2. Scrap paper can be used to take messages.
3. Unused disks can be collected, erased and checked for viruses before redistributing for reuse.
4. For paper that has been used on one side, integrate this paper for use by putting in boxes by photocopier machines and printers thus encouraging staff to reuse the paper.
5. For internal correspondence or inter office correspondence, envelopes should be reused.
6. For outgoing deliveries, boxes that originate from incoming deliveries can be reused.
7. Shredded paper and newspapers can be reused for packaging.
8. Envelopes can be reused if they are opened carefully. Fresh labels can be placed on the envelopes.
9. Corrugated boxes can be reused internally.
10. Incoming packaging material can be reused for outgoing shipments.

### How to Recycle Office Waste

1. A recycling programme can be set up within the office to promote recycling. A waste management team can be appointed who regularly update staff on progress made.
2. If in a large building try implementing a recycling programme that is common throughout the building to avoid confusion.
3. Contact the building management to see what local recycling services are available.
4. Liaise with the cleaners to make sure they understand and are familiar with the recycling system.
5. A waste contractor should be hired to collect the waste. This contractor should have a valid waste collection permit in accordance with the Waste Management (Collection Permit) Regulations 2001, which allows them to collect your waste. Make sure that your waste is delivered to a licensed EPA or Local Authority facility where it is recycled. This is requirement under the Waste Management Acts 1996-2003.
6. Recycle bins should be placed in various locations around the office to encourage paper recycling. These bins should be clearly labelled as to what should be placed in them.
7. Recycle bins should be provided for the different paper types e.g. newspapers collected separately from magazines, coloured paper separated from plain white paper etc.
8. As few as possible waste bins should be provided in the office. This is to promote and make recycling easier and to make wasting harder.
9. All paper should be recycled. This includes envelopes, invoices, faxes, junk mail, magazines, newspapers, telephone books, greeting cards, calendars etc.
10. Corrugated cardboard is a low-grade material and should be collected for recycling.
11. Old newspapers can be pulped and used as fuel for domestic fires.

## 10. SHIPPING & DELIVERIES WASTE

Shipping and delivery waste almost entirely consists of packaging waste. Packaging can be defined as “any material, container or wrapping, used for or in connection with the containment, transport, handling, protection, promotion, marketing or sale of any product or substance, including such packaging as may be prescribed”. This is as defined by the Waste Management Act 1996. In more simple terms shipping and delivery waste are wastes that are generated while transporting goods from one location to another. This is a significant waste stream. The waste generally consists of cardboard boxes, pallets, shrink-wrap, tape, wrapping materials, drums and plastic containers.

The aim here is to reduce the quantity of waste generated by transport packaging i.e. shipping and deliveries. The benefits of this reduction will mean there will be savings made with regard to disposal costs as well as conserving natural resources, as most materials are made from wood products. To do this strategies such as eliminating unnecessary transport packaging, switching to reusable transport packaging and reusing incoming packaging for outgoing shipments are all viable options. Below are some tips on how to reduce, reuse and recycle shipping and deliveries materials rather than disposing of this material to landfill.

### How to Reduce Shipping and Deliveries Waste

This involves finding ways to eliminate unnecessary packaging and to reduce the amount of packaging that is disposed of. The solution lies in the process of packaging and shipping. The following are some tips that look specifically at the packaging and shipping process:

1. Packaging should be chosen firstly to fit the product's size, weight and fragility. After this packaging should be chosen to meet filling requirements, warehousing needs and mode of transport.
2. To help reduce waste, you should work closely with suppliers.
3. Shippers could use padded vehicles, which would reduce the need for large quantities of packaging materials to be used.
4. In working with suppliers you could specify that they use recyclable products.
5. Reduce the amount of packaging by using only one type of packaging material.
6. Small packages may be replaced with a single large package. This ensures a more effective package size.
7. To reduce packaging material the container size should be matched to the product size.
8. Check to see if products can be bought in bulk or refillable form. This will ensure that packaging is reduced.

### How to Reuse Shipping and Deliveries Waste

1. Bubble wrap, packaging peanuts and boxes that are received in incoming shipments can be reused as packaging for outgoing shipments.
2. As a substitute to packaging peanuts, shredded paper can be used as a protective material and cushioning.
3. Untreated wood pallets that are damaged or not suitable for reuse can be used as mulch for composting or can be used as building material.
4. Durable plastic pallets can be used as replacements for wood pallets.
5. Unneeded materials can in some cases be returned to the supplier for reuse. This includes materials such as pallets, boxes etc.

### How to Recycle Shipping and Deliveries Waste

This is a viable option and can be a profitable way of reducing waste.

1. Unusable boxes, plastic shrink-wrap, pallets and paper packaging can all be recycled.
2. An in-house recycling system can be established to collect any recyclable material.
3. Recyclable material should be segregated so as to avoid contamination.
4. Where possible buy materials that are capable of being recycled.

The waste generated from shipping and deliveries falls under the Waste Management (Packaging) Regulations 2003, as amended by the Waste Management (Packaging) (Amendment) Regulations, 2004. The main aim of this Directive is to reduce the overall impact of packaging on the environment. The main targets in this directive are:

- 25% recovery rate of all packaging waste by 2001 - achieved.
- 50% recovery by 2005.

## 11. END OF LIFE VEHICLES

**Directive 2000/53/EC on End of Life Vehicles (ELVs) aims to prevent the production of waste from vehicles. This includes their components and materials and spare/replacement parts. It also promotes the recycling and reuse of end of life vehicles, in addition to other forms of recovery to reduce the disposal of waste from vehicles, thus reducing the amount of scrapped material going to landfill. For the purpose of the directive a vehicle is defined as any vehicle designated as category M1 or N1 defined in Annex IIA to Directive 70/156/EEC, and three wheel motor vehicles as defined in Directive 92/61/EEC, but excluding motor tricycles.**

End of life vehicle means a vehicle, which is waste within the meaning of Article 1(a) of Directive 75/442/EEC.

Vehicles (cars, vans, trucks and other vehicles) can be dismantled, stripped of any valuable materials and crushed for smelting. The Directive aims at making vehicle dismantling and recycling more environmentally friendly, by setting clear quantified targets for reuse, recycling and recovery of vehicles and their components, and pushes producers to manufacture new vehicles with a view to their recyclability e.g. it restricts the use of heavy metals in new vehicles.

Under the requirements of the Directive, the main responsibility lies with the manufacturer of the vehicle and those who are licensed to operate a treatment facility. These facilities are usually run by or with the approval of the Local authorities. They deal with the recovery and dismantling of the vehicles. The metal is shredded and processed to a certain standard and then is sent to recyclers overseas.

The Batteries Directive 91/157/EEC aims to promote the recovery and controlled disposal of spent batteries and accumulators containing dangerous substances and, thereby, to reduce the impact of battery waste on the environment.

The following are however some tips for car owners on how to reduce, reuse and recycle with the aim of also getting the most and best performance out of your vehicle:

### Reduce

#### Motor oil

1. With regard to motor oil, check your vehicle regularly for fluid leaks
2. Check the manufacturer's manual to see when oil changes are recommended. This will serve as a guide as to how frequently the oil needs to be changed.
3. Synthetic lubricants can be installed. The advantage of this is that it means the time between oil changes is longer
4. The vehicle should be checked to make sure no fluid leaks have occurred.

#### Car Batteries

5. With regard to car batteries, longer life acid batteries can be purchased to save on replacement.
6. Sealed gel-celled batteries can be used as a replacement in vehicles as they last twice as long, and offer less maintenance.

#### Coolant

7. When the weather gets cool, the coolant level should be checked to make sure that the vehicle's cooling system is protected.
8. For coolant replacement, check the owner's manual for the recommended replacement frequency. The longer the interval the less waste produced. To check if the antifreeze is doing its job adequately an antifreeze tester can be used from your local garage.
9. Antifreeze that contains propylene glycol, rather than ethylene glycol can be used, as it is less toxic and provides the same protection.
10. Check the radiator, reservoir and all hoses regularly for leaks.

#### Tyres

11. Rotate tyres according to the manufacturer's recommendations. This ensures that the tyres are wearing at a uniform rate.
12. Always check your tyre inflation with a good quality tyre gauge. Make sure to check the spare tyre too.
13. Check the tyre pressure also and use the recommended pressure in the user manual. This should be checked first thing in the morning when the tyres are cold as driving causes them to heat up.
14. Be aware of tears or bulges in the tyres and replace immediately.
15. Tread wear should be checked regularly

### Reuse

The following components, substances and materials of vehicles can be reused and recycled;

1. Catalytic converters.
2. Balancing weights.
3. Aluminium wheel rims.
4. Front, rear and side windows, sunroofs.
5. Tyres.
6. Large plastic components of the vehicle which include bumpers, hub caps, radiator grilles.
7. Metal parts containing copper, aluminium and magnesium.



## 11. END OF LIFE VEHICLES

continued

While promoting reuse and recovery this Directive also discourages the disposal of End of Life vehicles.

The Directive on End of Life Vehicles (ELV) 2000/53/EC sets recovery and recycling targets of:

- 85% reuse / recovery by 2006
- 95% reuse / recovery by 2015

### Recycle

#### *Motor oil*

1. Recycle used motor oil by taking to a special collection centre. Oil does not get worn out, it gets dirty and this oil can be recycled.
2. Refined oil can be used in the next oil change. This refined oil can achieve the same level of performance as virgin oil.
3. Waste mineral oil (fuel oil and lubrication oil) can be reprocessed and re-sold as low-grade industrial lubricant or industrial boiler fuel oil to generate heat, electricity or both.

#### *Car Batteries*

4. Bring your lead acid battery to your nearest civic amenity site for recycling.
5. Lead acid batteries (cars, trucks, boats, tractors, etc.) are made of plastic and contain dilute sulphuric acid and lead. During the recycling process, the batteries are crushed, the acid is drained off and neutralized and the plastic and lead is compacted and baled for recycling.

#### *Coolant*

6. Antifreeze should be changed by a professional who has experience and who also offers recycling of the used antifreeze as part of the service.

#### *Tyres*

7. Buy retreaded tyres. This involves replacing only the tread section or replacing rubber over the whole outer surface of the tyre. Car tyres can only be retreaded once but truck tyres can be retreaded up to three times.
8. Tyres can be reused, for example, through landfill engineering. This involves using the whole tyre in the preparation/construction of landfills where they are used as leachate drainage systems.

#### *Glass*

9. One component of the vehicle that can be recycled is the glass found in the windcreens. There are two types of glass used in the vehicles, toughened and laminated. Toughened glass is easy to remove from vehicles after shattering. Laminated glass doesn't shatter and needs to be removed manually, which is time-consuming.

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## DEFINITIONS

DEFINITIONS	
Waste Audit/Review	An examination of the waste in your organisation to see the amount and type of waste produced and how it is currently dealt with
Preliminary Review	A shorter version of the waste review that will give a quick indication of the type and amount of waste produced. It is primarily a desk exercise.
Waste Stream	Identifies waste by type e.g. paper, plastic, cardboard etc.
Municipal Waste	Term to describe household and commercial waste
Environmental Charter	A statement of your organisations broad principles and intentions in relation to the environment
Waste Management Hierarchy	A model which prioritises waste management options in terms of their impact on the environment
Polluter Pays Principle	Environmental principle which means that every organisation/individual/family is responsible for the costs associated with the environmental impacts caused by his/her activities
Proximity Principle	Principle which states that waste must be dealt with as close to its source as possible in order to minimise the environmental impact
Integrated Waste Management	Practice which uses a combination of waste management options to deal with waste.
Composting/ Biological Treatment	Process whereby organic material such as fruit, vegetables and garden waste are converted into a fertiliser
Recycling	The recovery of materials by preventing them being disposed of and making them into new goods
Incineration	Process of burning waste with a view to reducing waste volumes before final disposal, stabilising and sanitising waste and recovering energy in the form of heat or electricity
Landfill	This is the controlled deposit of waste to land
Green Procurement	This is an approach that aims to integrate environmental considerations into all stages of the way an organisation purchases equipment and supplies



**Good luck with taking action on waste in your workplace.**

Remember, you're not on your own - the Race Against Waste team of experts is here to advise and support you:-

phone us at lo-call **1890-667 639**

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