

## PART 5



## 19 IMPLEMENTATION OVER PLAN PERIOD

### 19.1 INTRODUCTION

The Midlands Waste Management Plan is the primary waste management planning tool for the next five-year period in the Midlands Region based on the policies stated in the preceding chapters.

Immediate implementation of all the recommended policies is not a realistic expectation from a practical and fiscal point of view. Rather, the greatest benefit will be derived from the Plan through a phased, managed approach, with key objectives specified for each year of the plan duration. Annual reports will be compiled to review and report on progress made over the preceding year and allow an evaluation of the anticipated resources and budget required for both the following year and the remaining duration of the Plan period.

Linked to this approach is the need to set a realistic set of targets and indicators to measure policy implementation and ultimately to establish whether targets are being met.

### 19.2 TARGETS

The targets specified in Chapter 16 and Chapter 17 determine how the integrated approach to waste management in the Midlands Region will be implemented. Table 19.1 demonstrates the timeframe in which the targets must be achieved over the life of this Plan. Table 19.2 outlines the timeframe for implementing the infrastructure necessary to achieve the targets.

Responsibility for the overall Plan implementation across the Region will be the duty of the Regional Waste Management Steering Group comprising senior management from each of the five Local Authorities.

The overall targets for waste recycling, recovery and landfill disposal are:

• Recycling	47%
• Recovery (Energy)	36%
• Disposal	17%

These targets assume that the waste collection and recycling facilities outlined by Waste Policy are implemented according to the implementation and infrastructure timetable set out in this Plan.

### 19.3 IMPLEMENTATION TIMETABLE

The targets referred to in Table 19.1 are the major milestones that must be achieved within the period of this Plan (2005-2010).

There are several targets that have not been included from Chapters 16 and 17, as they do not have specific timeframes in which to be achieved and are generally improvements to existing systems, services and infrastructure e.g. formalising reporting procedures for waste collection at Civic Amenity Facilities.

### 19.4 SERVICE INDICATORS

In January 2004, the Minister for the Environment, Heritage and Local Government launched "Delivering Value for People", announcing a list of 42 service indicators to measure the performance of Local Authorities covering all of their functions. Within this list, a number of the indicators were directly related to the area of waste management, litter prevention and environmental enforcement, with the obligation on Local Authorities to report annually on performance against these indicators.

The mandatory service indicators listed should form the basis for annual reporting on progress on the implementation of the Waste Management Plans.

#### Waste Management

<b>Waste Management</b>	Percentage of households provided with segregated waste collection.
	Percentage of household waste recycled.
	Percentage of household waste going to landfill.
<b>Waste Management</b>	<u>Recycling Facilities:</u> No. of Bring sites, Civic Amenity Sites per 5,000 population. Tonnage of waste per 5,000 population collected for recycling.

## Environmental Enforcement

<b>Environmental Complaints &amp; Enforcement</b>	No. of Complaints (waste, litter, water, noise, and air pollution). No. of complaints investigated. No. of complaints dismissed. No. of enforcement procedures taken. Environmental Campaigns in primary and secondary schools.
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## 19.5 ANNUAL REPORTING

A recommendation of the Government policy statement '*Taking Stock and Moving Forward*' (2004) was for Local Authorities to adopt a more systematic and regular assessment of how well the Waste Management Plan is being implemented. This follows the performance-based system for Local Government as required under the DEHLG Initiative 'Delivering Value for People - Service Indicators in Local Authorities'.

The key service indicators will be reported in the Annual Waste Report that Regions are now required to compile. The Annual Report will outline what progress has been made in relation to the policy targets specified in Chapters 16 and 17 under the following general headings:

- Waste Prevention – Household, Commercial and industrial
- Reuse – Household
- Recycling – Household, Commercial and Industrial
- Uncollected Household Waste
- Biological Treatment
- C&D Waste
- WEEE
- Hazardous Waste
- Packaging Waste
- Energy Recovery
- Landfill Disposal

Table 19.1: Infrastructure Timetable for the Plan Period

Year	2005	2006	2007	2008	2009	2010
<b>Prevention &amp; Minimisation</b>						
Appoint Green Business Officers from 2006						
In-house audit of Local Authority green practices						
Phasing out of disposable catering products						
Roll-out of home composting to 20,000 householders						
Annual seminars & workshops on waste prevention for SMEs						
Education programmes on preventing household waste twice per year						
<b>Reuse &amp; Recycling</b>						
All LA stationary to be purchased from sustainable companies						
1 Trial Reuse/Repair centre for Region						
1 Trial Community operated Bring Facility for the Region						
6 Civic Amenity Facilities to be developed						
All Civic Amenity Facilities to accept, Household hazardous waste and green waste						
<b>Uncollected Waste</b>						
Standardise the reporting methodology						
Survey of householders not availing of a waste collection service						
<b>Collected Waste</b>						
Standardise the reporting methodology across the Region						
Roll-out of organic collection to 50% of households						
Roll-out of dry recyclables collection to 70% of households						
Roll-out of organic collection services to commercial and industrial premises						
<b>Biological Treatment</b>						
Pilot study re: market potential of end product of biological treatment						
Provision of biological treatment capacity of 30-40,000 tonnes for Region						
<b>Materials Recovery Facility (MRF)</b>						
Pre-treatment of mixed municipal collected waste required						
<b>C&amp;D Waste</b>						
LA to work with industry to provide C&D Recycling Facilities as appropriate						
<b>Hazardous Waste</b>						
One Public Education Campaign per year on household hazardous waste						
One Education Campaign per year on SME hazardous waste						
<b>Packaging</b>						
Target: 50-65% by weight recovered by 2005 (achieved). 60% by weight to be recovered by 2011						
<b>WEEE</b>						
Selected Civic Amenity Facilities to accept WEEE (as required) (August 2005)						
<b>Energy Recovery</b>						
Feasibility Study to determine the commercial interest in developing a facility						
Potential Siting Study to commence						

**Table 19.2: Development of Public and Private Infrastructure During the Plan Period**

Infrastructure	Public	Private	PPP	Timetable for Procurement
Bring Banks	<b>Lead</b>	Possible	Possible	LAs will lead implementation, but private collectors and property developers may also be required to provide Bring Banks. Bring bank density 1: 1250 to be provided in the Region by 2010
Civic Amenity Facilities	<b>Lead</b>	Possible	Possible	Each LA to develop and upgrade existing facilities. Private proposals and PPP options will also be considered. 6 additional sites by 2010 (must accept Household Hazardous waste, WEEE and Green Waste)
Green Waste Collection	Possible	<b>Lead</b>	Possible	Public operated Civic Amenity Facilities to accept household green waste where possible by 2010. The roll out of the brown bin will start from 2007.
Green Waste Facility	Possible	<b>Lead</b>	Possible	Private sector expected to lead development of green waste composting facility, PPP options will be considered. One green waste facility for the Region to be provided by 2010.
Biological Treatment	Possible	<b>Lead</b>	Possible	Minimum biological treatment capacity of 30,000– 40,000 tonnes to be developed in parallel with the roll out of the brown bin.
MRFs/Waste Transfer Stations	Possible	<b>Lead</b>	Possible	Additional capacity will be required to accommodate increased quantities of source separated waste.
Thermal Treatment Facility	Possible	<b>Lead</b>	Possible	Feasibility study to commence in 2006
Municipal Landfill	<b>Lead</b>	Possible	Possible	Additional phases as per the existing Waste Licences. The current municipal landfill capacity within the Region is deemed adequate for the lifetime of the Plan (2005-2010) and there is no need to develop further facilities during this period.
Construction/Demolition Recycling	Possible	<b>Lead</b>	Possible	New Facilities provided for the Region by 2008.
WEEE	<b>Lead</b>	Possible	Possible	All major Civic Amenity Facilities are presently accepting WEEE.
Trial Reuse/Repair	<b>Lead</b>	Possible	Possible	One centre for the Region by 2007
Community Bring Facility	Possible	Possible	<b>Lead</b>	One trial community facility to be established in the Region by 2007
National Waste Facility	Possible	Possible	Possible	The development of such facilities will be based on national market demand, siting criteria, environmental and planning considerations.

**Guiding Footnote:** The purpose of Table 19.2 is to illustrate who is intended to lead the implementation of the key infrastructure. Boxes marked 'lead' recognise the sector (public, private or PPP) that is most likely to develop that facility in the Region during the life of the Plan. Boxes marked 'possible' relate to the potential facilities that will be open for consideration for planning permission

## 20 ROLES AND RESPONSIBILITIES

### 20.1 DEPARTMENT OF ENVIRONMENT HERITAGE & LOCAL GOVERNMENT

In its 'Statement of Strategy 2003 – 2005' the Department of Environment and Local Government (now Department of Environment, Heritage and Local Government) states its Mission Statement is:

*"To promote sustainable development and improve the quality of life through protection of the environment and heritage, infrastructure provision, balanced regional development and good local government".*

In line with this overall mission, the DEHLG includes a number of objectives and strategies, which include:

- To promote and protect a high quality natural environment, protect human health and secure the integration of environmental considerations into economic and sectoral policies.
- To provide and maintain policies, programmes and a legislative framework for the protection and, where necessary, improvement of environmental media and the satisfactory management and reduction of waste.
- To provide policy leadership and legislative framework for the development and management of investment programmes in water, wastewater and waste management infrastructure, and pursuing complementary policy initiatives, including producer responsibility initiatives and application of the polluter pays principle, to meet environmental and development needs.
- Promoting a partnership approach among the economic sectors, social partners, and non-governmental organisations to key environmental policy and sustainability issues through *Comhar* and other inclusive initiatives such as Local Agenda 21.
- Developing and overseeing implementation of initiatives to prevent or minimise waste in the context of *Preventing and Recycling Waste: Delivering Change*, including a new grant scheme to support greater reuse and recycling, further producer responsibility initiatives (building on the success of REPAK) and additional environmental levies following those implemented successfully in respect of plastic bags and landfilling operations.
- To encourage and support the use of public private partnerships within the local government sector as a way of delivering infrastructure and quality public services in a timely and cost effective manner.

### 20.2 EPA

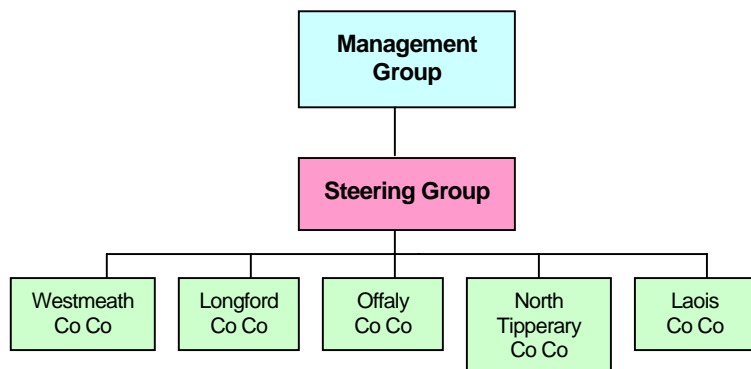
The EPA has a wide range of statutory duties and powers under the Environmental Protection Agency Act. In addition, the capacity of the EPA in relation to enforcement has been enhanced in the Protection of the Environment Act, 2003.

The responsibilities of the EPA in relation to waste management include:

- Formulation of National Hazardous Waste Management Plan.
- Publication of National Waste Database.
- Licensing of large-scale waste management facilities.
- Enforcement of Waste Licences.
- Promotion of environmental best practice through Cleaner Greener Production Programme.
- Auditing and reporting on the performance of Local Authorities in the discharge of their environmental protection functions in relation to waste management.
- Assisting Local Authorities to improve their environmental protection performance through the establishment of an enforcement network to promote information exchange and best practice, and by the provision of appropriate guidance.

### 20.3 REGIONAL WASTE MANAGEMENT GROUPS

Following detailed consideration of the local and regional elements of the Midlands Waste Management Plan and having regard to the relatively small number of regional facilities involved (regardless of their size) it was considered that implementation would be carried out at county level, and that the regional element would not require an independent management structure. To ensure that each Local Authority is adhering to the agreed schedule of work, a steering group would be put in place. Figure 20.1 shows the management structure in place in the Region.

**Figure 20.1: Regional Management Structures**

The management group was put in place to oversee and monitor the Steering Group.

The Waste Steering Group facilitates and coordinates the efforts of the partner Local Authorities in implementing the objectives and meeting the targets of the Midlands Regional Waste Management Plan and to facilitate where possible the efforts of industry in prevention, minimisation and sustainable management of waste in the Midlands Region.

The roles and responsibilities of the Regional Waste Steering Group, based on proposed policy, should include:

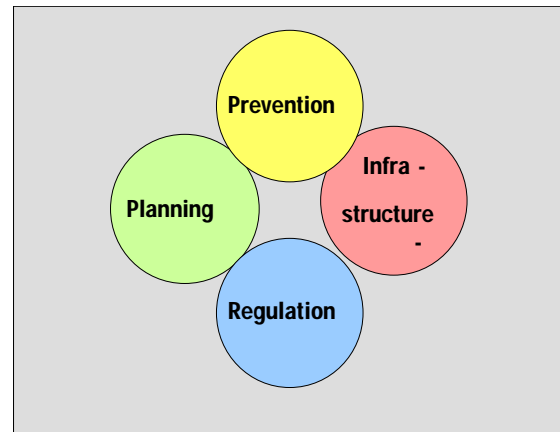
- To Coordinate in partnership with the five member Local Authorities, the implementation of the objectives set out in the Midlands Regional Waste Management Plan and to ensure that the targets set out in the Plan are achieved within the specified dates.
- To foster household and community awareness of waste management issues through the Environmental Awareness Officers in each of the member Local Authorities.
- To proactively promote prevention, minimisation, re-use and recycling of waste through the network of Green Business Officers and producer responsibility groups such as REPAK and other similar agencies.
- To develop regional solutions on issues such as the management of C&D waste, long-term residual treatment options, backyard burning, illegal dumping and enforcement.

## 20.4 LOCAL AUTHORITIES

Historically, the emphasis within Local Authorities has been on collection of waste. With the introduction of the Waste Management Acts 1996 to 2003, the roles and responsibilities of Local Authorities has been expanded to include:

### Waste Planning:

- Formulation of Waste Management Plans with regard to prevention, minimisation, collection (including by third party), recovery and disposal of non-hazardous waste.
- Provision of segregated collection and bring systems.

**Figure 20.2 Waste Management Service – 4 Elements**

- Planning for new facilities including: Bring Banks; Civic Amenity Facilities; Materials Recovery Facilities; Transfer Stations; Green Waste Composting and Biological Treatment Facilities; Thermal Treatment capacity and Landfill Facilities.
- Ensure that new developments include provision for the management of waste during construction and operation.

### Waste Prevention:

- Outline measures and best practice for prevention and minimisation of waste
- Promotion of general awareness in relation to waste management.
- Lead by example through working towards in-house Waste and Environmental Management Systems.
- Introduction, where practicable, of Green Procurement Policies.

### Waste Regulation and Enforcement

- Introduction of bye-laws in relation to the presentation of waste.
- Ensure that waste is managed as outlined in the Waste Management Plan.
- Issue and enforcement of Waste Permits.
- Issue of and Enforcement of Waste Collection Permits.

- Enforcement of Regulations regarding the movement of waste.
- Collection and reporting of waste statistics.
- Enforcement of requirements laid out in the Waste Management Plan.
- Enforcement of Producer Responsibility Regulations.
- Operation of Local Authority waste facilities in line with certificate of registration and licence requirements.
- Consistent enforcement of waste legislation across the Region.

### **Waste Infrastructure**

- Provision of Local Authority waste infrastructure.
- Facilitation of private infrastructural projects
- Use of DEHLG or EU grant aid system to promote new recycling facilities.
- To investigate/facilitate new waste management technologies.
- Provision and facilitation of waste infrastructure using partnership and social economy models.

## **20.5 PRIVATE WASTE SECTOR**

The private sector has become increasingly involved in waste management in the Region. In line with this increased participation, the private sector must also acknowledge its roles and responsibilities in relation to waste management, which include:

- Implementation of the requirements of the Waste Management Plan in line with the principles of the Waste Hierarchy.
- Ensure that waste does not cause environmental pollution.
- Ensure that all waste activities are adequately licensed or permitted.
- Compliance with the requirements of all waste permits/licences.
- Use of Best Available Technology.
- Explore and introduce innovative waste management technologies.
- Co-operate with Local Authorities in relation to the provision of waste collection services in peripheral areas.
- Assist Local Authorities to reduce the amount of uncollected waste in the Region.
- To promote education and awareness regarding waste management.

## **20.6 BUSINESS AND INDUSTRY**

The business and industrial sectors contribute significantly to the overall amount of waste produced in Ireland. As waste producers, these sectors must take responsibility for the production, handling and ultimate treatment of waste produced on their premises and for waste generated as a result of products they place on the market. Roles and responsibilities include:

- Implement best waste management practice in the workplace with the emphasis on waste prevention.
- Segregate waste that is produced into appropriate streams.
- Adhere to the Producer Responsibility initiative, for example, REPAK.
- Promotion of awareness and best practice amongst employees.
- Implementation of green purchasing policies.
- Implementation, where appropriate, of Environmental Management Systems.
- Ensure that all waste collectors have the appropriate waste permits/licences.
- Explore ways of reducing waste, in the form of packaging, that is passed on to the consumer.
- Liaise with Local Authorities and private waste sector in relation to provision of recycling parks for SMEs.
- Ensure that all movements of waste, within Ireland and abroad, have the appropriate documentation.
- Encourage and support initiatives and research into waste management by third level institutions.

## **20.7 EDUCATIONAL INSTITUTIONS**

Educational Institutions at primary, secondary and third level play an important role in the promotion of good practice in relation to waste management. Students and teachers can lead by example and disseminate good practice throughout the wider community. Roles and responsibilities include:

- Participation in Green Schools Programme.
- At third level: conducting research and development, in participation with industry, into innovative waste reduction, recycling and recovery technologies.
- Implementation of in-house waste reduction and recycling programmes.
- Dissemination of information to the wider community.



## **20.8 VOLUNTARY AND COMMUNITY GROUPS**

- Ensure that all waste collectors have a valid waste collection permit.

Local Authorities wish to engage with local communities regarding the provision of waste management infrastructure and education on waste prevention, minimisation, recovery and recycling. This is a two-way process and in which voluntary and community groups could contribute in the following ways:

- Co-operate with social economy measures.
- Seek Local Authority, EU and National funding for waste minimisation and recycling projects, which will, in turn, create employment in the local area.
- Participate in Tidy Towns competitions.
- Discourage littering and undertake 'clean-up' days.
- Liaise and co-operate with the Environmental Awareness Officers in the Region.
- Take responsibility for the upkeep of Bring Banks in local communities through initiatives such as the 'Adopt a Bank Scheme'.

## **20.9 THE GENERAL PUBLIC**

Each member of the public, as a producer of waste, has a duty to handle waste responsibly and to ensure that any waste produced does not cause environmental damage. Additional responsibilities include:

- Prevent the generation of household waste where possible.
- Reduce the amount of waste being generated in the home by buying products with less packaging and buying in bulk.
- Participate in waste collection schemes where they are available.
- Segregate recyclable waste for collection or take to Civic Amenity Facilities or Bring Banks.
- Segregate organic waste for composting.
- Separate out household hazardous wastes for safe disposal.
- Avoid the illegal burning or burying of waste, including the illegal dumping of waste in any public or privately owned property.
- Avoid the use of in-sink macerators for organic waste.
- Ensure that waste is presented for collection in the manner required by the Local Authority or waste operator.

## 21 ENFORCEMENT

### 21.1 OVERVIEW

Enforcement of waste legislation is now being coordinated at national level by the EPA, through the National Enforcement Network. The EPA established the Network in June 2004 and its work is mainly being conducted through a number of inter Agency working groups and networks on topics such as unauthorised waste activities, packaging and Trans-Frontier Shipping.

Increasing pressure is mounting to enforce Waste and Environmental Legislation, particularly with the introduction of Pay by Weight/Use, which presents several new challenges.

Members of the public may be tempted to reduce waste charges through backyard burning, in sink macerators or illegal dumping of waste. Operators without appropriate permits may profit from collecting and disposing of waste illegally.

In order for it to be successful, a coordinated approach to enforcement is required to ensure compliance with waste legislation across all levels of duty holder. These levels are:

- National
- Regional
- Local

There are a number of different public bodies and state agencies with responsibilities in enforcement of waste legislation. These include:

- The EPA
- Local Authorities
- An Garda Síochána.

#### 21.1.1 National Enforcement Network

A National Enforcement Network involving all Local Authorities, the EPA, An Garda Síochána and other state bodies with a role in enforcement of environmental legislation, was established by the EPA in June 2004. The Network is being coordinated by the Office of Environmental Enforcement, an office within the EPA dedicated to enforcement of environmental legislation in Ireland.

The overall objective of the enforcement network is to foster co-operation between the various agencies involved in enforcement of environmental legislation so that effective enforcement is achieved throughout the country.

The role, therefore, is to focus the collective resources, expertise and investigative capacity of all the parties engaged in environmental enforcement activity in Ireland to bring about changes of behaviour in areas such as unauthorised waste activities, trans frontier shipment of waste and compliance with waste legislation in general.

#### 21.1.2 Regional Enforcement

It is anticipated that a Regional Steering Group will coordinate all aspects of enforcement in the Midlands. The group will discuss enforcement issues, share information, particularly from the National Enforcement Network, devise Best Practice guidelines and ensure that all Enforcement staff are suitably trained, supported and are notified of key developments that may impact on the day-to-day performance of their roles.

In relation to enforcing waste management legislation, this will include cooperation amongst Local Authorities, the EPA and An Garda Síochána. Local Authorities will participate in the National Enforcement Network through:

- The nomination of Local Authority Staff to the various working groups.
- Active participation in the various Enforcement Network working groups and networks.
- The sharing of information relevant to the work of the Enforcement Network.
- The attendance at training events organised by the Enforcement Network.
- The utilisation of staff in the co-ordinated enforcement of waste issues affecting this Region.

The Midlands Region have already formed a Steering subgroup for enforcement, which addresses most of these topics, and this group should continue to ensure that sufficient resources are deployed and that action and experience is reported regularly.

#### 21.1.3 Local Enforcement

Each Local Authority shall recognise the need for a coordinated and concerted approach to enforcement of waste legislation and will participate in both regional and national enforcement actions planned through the National Enforcement Network.

Enforcement staff within individual Local Authorities will be familiar with all relevant byelaws with local relevance and ensure that the compliance with these byelaws is treated with equal relevance.

## 22 FINANCIAL PERFORMANCE

### 22.1 DATA AND METHODOLOGY

The financial data relevant to waste management activities in the Region are taken from the County Council's Programme Group 5 - Environmental Protection, and its relevant subgroups for the financial years 2003 and 2004.

To present the regional data in a consistent manner, the financial data for each Local Authority were re-grouped, based on common waste management activities, as follows:

1. **Waste Disposal** – At present, Local Authorities operate landfill facilities within the Region for the disposal of both commercial and domestic waste. In this chapter, this activity is used to cover the expenditures and revenues relating to landfill operations, including monitoring, remediation, new space creation, treatment, management and other related activities. In our analysis, we show day-to-day operational costs separately from capital expenditure and remediation costs.
2. **Waste Collection** – This activity covers the expenditure undertaken in providing a waste collection service to some domestic and commercial customers, typically small traders in the Region. For the most part these services in the Region are provided by private sector operators. The income shown includes charges for this service as well as items such as sales of wheelie bins.
3. **Recycling** – This includes expenditures related to the construction of new facilities; as well as the day-to-day maintenance, operation and management of all Local Authority operated recycling infrastructure such as Civic Amenity Facilities, Composting Centres, Bring Banks, and certain promotional expenditure such as recycling initiatives.
4. **Litter** – Expenditure on litter control, street cleaning, litter removal, anti-litter measures, related overheads, as well as income from litter fines and suchlike is included in this activity.
5. **Enforcement** – The income and expenditure relating to waste enforcement measures, related staff costs and other activities such as issuing waste permits is included in this activity.

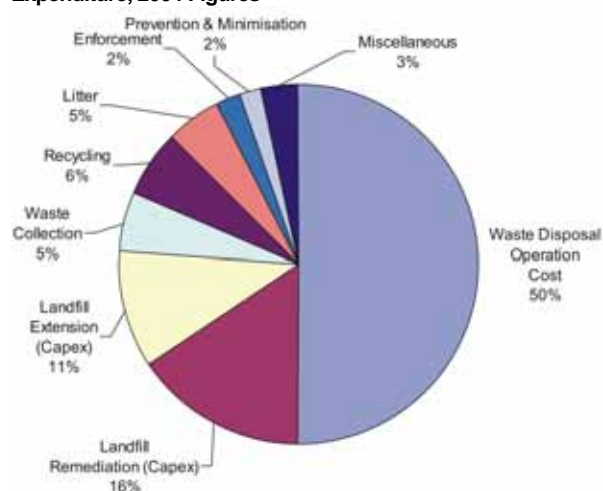
6. **Prevention and Minimisation** – This activity includes the expenditures related to environmental awareness activities, green campaigning, environmental awareness staff and related promotion and education initiatives.
7. **Miscellaneous** – Expenditure such as overheads and administration costs related to the waste management sector, e.g. staff salaries and the portion of the central management charge allocated to the Programme Group 5, are included under this heading.

### 22.2 CURRENT LOCAL AUTHORITY EXPENDITURE – REGIONAL SUMMARY

Expenditure in 2003 and 2004 on waste management operations in the Midlands Region is as shown in Table 22.1. The table includes both capital and current expenditure undertaken in each year, and is intended to show the total expenditure on waste management in each of these years.

**Table 22.1: Waste Management Expenditure 2003 and 2004**

No	Description	2003	2004	% Of 2004 Total
1	Waste Disposal Operation Cost	7,123,545	10,161,391	50%
1.1	Landfill Remediation (Capex)	2,445,174	3,158,000	16%
1.2	Landfill Extension (Capex)	405,000	2,159,592	11%
2	Waste Collection	626,000	1,056,000	5%
3	Recycling	1,062,166	1,287,499	6%
4	Litter	1,132,581	1,019,727	5%
5	Enforcement	412,596	441,096	2%
6	Prevention & Minimisation	338,249	413,017	2%
7	Miscellaneous	593,148	643,521	3%
	<b>Total</b>	<b>14,138,459</b>	<b>20,339,843</b>	<b>100%</b>

**Figure 22.1: Breakdown of Waste Management Expenditure, 2004 Figures**

The major items of expenditure by the Local Authorities within the Region in 2004 were landfill operations, capital expenditure for extensions and remediation activities. In total, these accounted for 76.1% of waste management expenditure. It is a key objective of the proposed plan to focus expenditure towards other activities such as recycling and waste minimisation.

Expenditure by the Local Authorities on recycling activities, promotional activities, waste minimisation and enforcement accounted for 10.5% of total expenditure in 2004. However, it should be recognised that there is substantial private sector involvement in recovery and recycling activities in the Region and, as shown in chapters 8 and 9, recovery rates of 35% for packaging and 10% for household waste are being achieved.

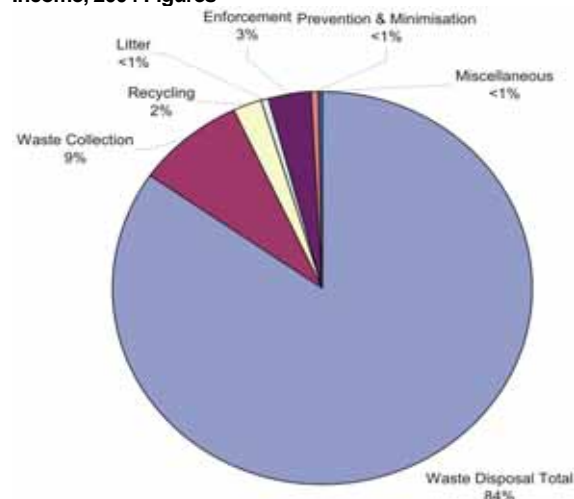
The total waste management expenditure on the part of the Local Authorities in 2004 shows an increase of some 44% over the expenditure for 2003. This was mainly due to capital costs of new landfill cells, in addition to increased expenditure on remediation activities and operating costs, much of the latter being driven by the extensions to the facilities.

## 22.3 CURRENT LOCAL AUTHORITY INCOME - REGIONAL OVERVIEW

Income in 2003 and 2004 from waste management services in the Midlands Region were as shown in Table 22.2:

**Table 22.2: Waste Management Income, 2003 and 2004**

No.	Description	2003	2004	% of 2004 Total
1	Waste Disposal Total	15,061,979	15,646,055	84%
2	Waste Collection	1,470,000	1,590,000	9%
3	Recycling	193,387	395,514	2%
4	Litter	88,532	117,990	<1%
5	Enforcement	211,959	638,034	3%
6	Prevention & Minimisation	228,542	96,660	<1%
7	Miscellaneous	3,853	39,855	<1%
	<b>Total</b>	<b>17,258,251</b>	<b>18,524,107</b>	<b>100.0%</b>

**Figure 22.2: Breakdown of Waste Management Income, 2004 Figures**

The major portion of the regional income is generated from waste disposal. The level of dependency on landfill facility income in 2004 has not changed substantially in comparison with 2003.

It was shown in Section 10.1 that waste disposal to landfill in 2003 was 141,784 tonnes and it is estimated that a similar amount was landfilled in 2004. We also conclude from the data shown in Chapters 6, 8 and 9 that the residual waste from households, small commercial premises etc. that are consigned to landfill are close to the amount landfilled by Local Authorities within the Region. This implies that any inter-regional movement within these categories of waste are in balance at present, and, for the purpose of making future projections later in this chapter, we assume that this will be the status over the period of this Plan. Waste collection income is the revenues generated by household and small commercial

customer charges. These exceed the collection costs shown previously, however, these charges are intended to recover all the related costs of the service which include relevant landfill disposal costs.

The income from enforcement and awareness activities, which includes litter fines, provides a marginal portion of the income stream. Some of this income is provided by way of grants from the Department of the Environment, Heritage and Local Government.

## 22.4 COST RECOVERY

Total expenditure in 2004 exceeds the income by an amount of just over €1.8 million. Given that the expenditure included €3.16 million for expansion of landfill capacity, we are of the view that had this capital expenditure been allocated over the useful life of the extension, the deficit in 2004 would be of the order of €0.7 million in the Region, which is close to full cost recovery.

In respect of landfill operations, we note that the income from landfill charges of €15.6 million marginally exceeds total landfill expenditure of €15.5 million, so landfill costs are being recovered in full.

## 22.5 PRIVATE SECTOR INVOLVEMENT IN WASTE MANAGEMENT

The private sector element of the waste management industry is, to a large extent, a two-tiered system comprising large companies that have a significant market shares and small- to medium-sized companies that typically provide specialist waste collection and small-scale treatment/disposal services.

The larger companies are often financially stable (turnover between €30 million to €50 million and higher), and are well equipped with significant technological and skill bases. These waste companies have high investment power and generally are willing to participate with the public sector in the development of major waste management infrastructure, providing investment equity and know-how.

The size and the growth of the larger companies have created barriers of entry to the waste market for the smaller size companies. In addition, acquisitions of some smaller firms have taken place and the private sector is undergoing a degree of consolidation at present..

## 22.6 PROJECTED EXPENDITURE FOR PLAN PERIOD

### 22.6.1 Approach and Methodology

The projections of future expenditures have been estimated by:

1. Establishing the 2004 baseline of the waste management activities for use as the starting point;
2. Extrapolating the variable element of those expenditures that are dependant on factors such as increased activity, growth in waste arisings, diversion from landfill as well as providing for capital expenditure over the Plan period;
3. Estimating monetary values of the proposed actions in the Implementation Action Plan Timetable, and
4. Adding these into the projected expenditure stream.

Future expenditures are presented and summarised at current price levels; we have not provided for inflation.

### 22.6.2 Financial Modelling and Selection of Scenarios

The projected implications for expenditure by the Local Authorities in the Region arising from the Waste Management Plan have been analysed based on a central scenario that future infrastructure, and by implication, the relevant operating costs and incomes, will be provided as shown in Table 22.3:

**Table 22.3 Infrastructure Provision – Central Scenario**

Infrastructure	Provided by
Bring Banks	Local Authorities
Civic Amenity Facilities	Local Authorities
Green Waste Collection Points	Local Authorities
Green Waste Facility	Private Sector
Biological Treatment	Private Sector
Thermal Treatment Facility	Private Sector
Municipal Landfill	Local Authorities
Other Landfill	Private Sector
Construction/Demolition Recycling	Private Sector
WEEE Collection Points	Local Authorities with Private Sector Funding
Trial Reuse/Repair Centre	Local Authorities
Community Bring Facility	Local Authorities

**22.6.3 Projected Future Expenditures**

Cash expenditure above €1 million is considered as capital investment. The future costing over the

5-year period that passes the threshold of €1 million and hence represents capital expenditure is shown in Table 22.4 on the page overleaf.

**22.6.4 Future Capital Investment**

Table 22.5 below shows the Operational Cost projection per waste activity group 2005 – 2010.

A substantial increase in expenditure is projected in the initial period of the Plan, arising from the need to install a number of new landfill cells in 2005 and 2006. We have assumed that the costs of these will be funded by loans over the expected life of the cells at a borrowing cost of 2.75% per annum.

Thereafter, expenditure will grow at a more modest rate. The landfill Capex shown includes remediation expenditure in respect of cells being capped in the period 2005 to 2010 and any on-going remediation works.

The projections include the capital and operating costs for future recycling infrastructure, such as Bring Banks and Civic Amenity Facilities. Given the relatively low cost of individual centres, we have assumed that these capital costs will not be funded by loans. We have assumed that grant assistance will be available for such facilities at 75% of the capital costs. We have not assumed any grants assistance towards operating costs.

**Table 22.5: Operational Cost Projection per Activity Group – 2005 - 2010**

Description	2005	2006	2007	2008	2009	2010	Total	
	€	€	€	€	€	€	€	
<b>Waste Disposal Total</b>	<b>14,407,864</b>	<b>18,678,446</b>	<b>18,168,592</b>	<b>18,091,014</b>	<b>17,870,733</b>	<b>16,974,833</b>	<b>104,191,481</b>	<b>68.5%</b>
<i>Landfill Operations</i>	10,669,461	11,202,934	11,763,080	12,351,234	12,968,796	13,617,236	72,572,740	
<i>Landfill Remediation (Capex)</i>	1,503,245	4,567,215	3,497,215	2,864,715	2,807,215	1,878,970	17,118,575	
<i>Landfill Extension (Capital)</i>	2,235,158	2,908,297	2,908,297	2,875,065	2,094,722	1,478,627	14,500,166	
<b>Waste Collection</b>	<b>1,161,600</b>	<b>1,287,760</b>	<b>1,410,536</b>	<b>1,551,090</b>	<b>1,775,699</b>	<b>1,945,768</b>	<b>9,132,453</b>	<b>6.0%</b>
<b>Recycling</b>	<b>1,579,674</b>	<b>1,721,299</b>	<b>2,039,086</b>	<b>2,220,452</b>	<b>2,398,955</b>	<b>2,606,308</b>	<b>12,565,773</b>	<b>8.3%</b>
<b>Litter</b>	<b>1,172,686</b>	<b>1,348,589</b>	<b>1,550,877</b>	<b>1,783,509</b>	<b>2,051,035</b>	<b>2,358,690</b>	<b>10,265,386</b>	<b>6.7%</b>
<b>Enforcement &amp; Awareness</b>	<b>485,206</b>	<b>533,726</b>	<b>587,099</b>	<b>645,809</b>	<b>710,390</b>	<b>781,428</b>	<b>3,743,657</b>	<b>2.5%</b>
<b>Prevention and Minimisation</b>	<b>714,319</b>	<b>734,751</b>	<b>784,726</b>	<b>839,698</b>	<b>1,390,168</b>	<b>1,456,685</b>	<b>5,920,346</b>	<b>3.9%</b>
<b>Miscellaneous</b>	<b>1,053,521</b>	<b>1,068,521</b>	<b>1,048,521</b>	<b>1,048,521</b>	<b>1,048,521</b>	<b>1,048,521</b>	<b>6,316,126</b>	<b>4.2%</b>
<b>Total Waste Management Expenditure</b>	<b>20,574,868</b>	<b>25,373,091</b>	<b>25,589,437</b>	<b>26,180,093</b>	<b>27,245,500</b>	<b>27,172,234</b>	<b>152,135,222</b>	

**Table 22.4: Future Infrastructure and Estimated Capital Cost**

Infrastructure	Provider	Est. Cost €	Timetable for Procurement
Bring Banks	Local Authorities	1,000,000	Bring bank density 1: 1250 to be provided in the Region by 2010
Civic Amenity Facilities	Local Authorities	7,040,000	6 additional sites by 2010 (to accept Household Hazardous waste, WEEE and Green Waste)
Green Waste Collection Points	Local Authorities	800,000	The upgrading of existing Civic Amenity Facilities (9) to accept, where possible, household green waste by 2009 and WEEE from 2005.
WEEE Collection Points	Local Authorities with Private Sector Funding		
Green Waste Facility	Private Sector	1,000,000	One green waste facility for the Region to be provided by 2009
Biological Treatment	Private Sector	6,900,000	Capacity in the Region for biological treatment capacity of 30,000 – 40,000 tonnes Region by 2008
Thermal Treatment Facility	Private Sector	100,000,000	Related studies to commence by the end of 2005
Municipal Landfill	Local Authorities	21,000,000	Provision for 6 new landfill cells within Region, plus remediation works for a similar number of filled cells
Private Sector Landfill	Private Sector	15,000,000	Initial cost provision, there will be on-going capital investment in new cells over the life of the facility
Construction/Demolition Recycling	Private Sector	5,000,000	New Facilities provided for the Region by 2009
Trial Reuse/Repair	Local Authorities	150,000	One centre for the Region by 2007
Community Bring Facility	Local Authorities	200,000	One trial community facility to be established in the Region by 2007

The total capital expenditure for the Local Authorities over the Plan period is €30,190,000. This figure will decrease with the provision of private sector funding for the upgrading (where possible) of existing Civic Amenity Facilities in the Region to accept WEEE.

### 22.6.5 Future Income

The key driver of future income is projected to be landfill gate fees, as shown in table 22.6 following, in which we also show the estimated financial implications of the Plan.

In preparing these projections, we have assumed that landfill intake, in tonnage terms will remain at current levels and that gate fees will increase at 2% per annum in real terms, i.e. 2% higher than the rate of inflation. It is our expectation that landfill gate fees will come under pressure as the move to the integrated waste approach progresses. Landfill operating costs are fixed to a large extent and, as waste is diverted from landfill to recovery and/or recycling alternatives, it is anticipated that gate fee revenues will fall faster than costs can be reduced.

We have not provided for any closures or rationalisation of regional landfills in these projections, though we have provided for diversion of 40,000 tonnes from regional landfill sites to alternatives such as bio-waste treatment.

We do not project any fall off in landfill income until 2008, when the Biowaste plant may begin to receive material, but we do not perceive any significant impact on landfill tonnages until 2009.

The effect of these assumptions is that projected landfill incomes are some €3.3 million lower in 2010 than in 2004. However, we anticipate some increases in other income sources with the effect that in 2010, total income will fall behind 2004 income by some €2 million.

In overall terms, there was a deficit of €1.8 million in the Region in 2004, and we see little change in the amount of the deficit in 2005. However, there will be a substantial increase in the deficit in 2006, mainly due to the capital costs of new landfill cells and other infrastructure such as Bring Banks. The funding gap will then remain relatively stable until 2009 and 2010 when the reduction in tonnages will lead to a substantial fall in revenues and an increasing deficit of potentially €9-10 million per annum at the end of the Plan period.

This does not include any costs for the assessment, investigation and remediation works of closed landfills or hazardous waste sites that may be required under Sections 22 and 26 of the Waste Management Act, 1996.

Given the limited scope for increasing direct income from waste activities, particularly landfill,

other options will need to be considered to close the funding gap. These options include:

1. Increase in commercial rates: This opportunity appears limited given that the Midlands as a Region does not have a significant rates base.
2. Additional funding from the Environment Fund or the Local Government Fund: Again this may be a limited option given that the income projections set out below already assume a 75% grant for the construction of recycling infrastructure. In addition the Environment Fund is largely funded through the landfill levy and income to the Fund is likely to fall over the next few years as recycling rates increase and landfill decreases. A separate case would have to be made to the DoEHLG for any additional funding from the Local Government fund.
3. Increased cost recovery through the private sector: Nationally the private sector is increasingly taking control of much of the revenue-generating waste activities including household and commercial waste collection, biological treatment facilities, thermal treatment and landfill. Generally the Local Authorities have to provide the non-revenue generating activities such as Bring Banks, Civic Amenity Facilities, environmental awareness staff, regulation & enforcement, etc. The option of moving towards an increasingly integrated waste management system could be considered whereby the private sector would operate a wider range of facilities on behalf of the Local Authorities as part of an overall service contract. Alternatives to this would be to require any company collecting household waste to provide the full range of services outlined in the Plan including Bring Banks, dry-recyclables collection, Civic Amenity Facilities etc or to pay the costs for providing these services to the Local Authorities. It is considered however that enabling legislation may have to be enacted to allow this to be enforced.



**Table 22.6: Income per Activity Group – 2005 – 2010**

	2005	2006	2007	2008	2009	2010	2005 - 2010	%
	€	€	€	€	€	€	€	
<b>Waste Disposal</b>	15,958,976	16,278,156	16,603,719	16,338,554	14,228,589	12,649,058	92,057,051	80.6%
<b>Waste Collection</b>	1,637,700	1,686,831	1,737,436	1,789,559	1,843,246	1,898,543	10,593,315	7.0%
<b>Recycling</b>	485,269	528,775	626,398	682,113	736,948	800,646	3,860,150	2.9%
<b>Litter</b>	122,168	140,493	161,567	185,802	213,673	245,724	1,069,427	0.9%
<b>Enforcement &amp; Awareness</b>	701,837	772,021	849,223	934,146	1,027,560	1,130,316	5,415,104	4.2%
<b>Prevention and Minimisation</b>	115,289	118,587	126,653	135,525	224,370	235,106	955,530	0.9%
<b>Miscellaneous</b>	48,876	49,572	48,644	48,644	48,644	48,644	293,025	0.2%
<b>Total Income</b>	<b>19,070,116</b>	<b>19,574,436</b>	<b>20,153,641</b>	<b>20,114,343</b>	<b>18,323,030</b>	<b>17,008,037</b>	<b>114,243,602</b>	
<b>Total Expenditure</b>	<b>20,574,868</b>	<b>25,373,091</b>	<b>25,589,437</b>	<b>26,180,093</b>	<b>27,245,500</b>	<b>27,172,234</b>	<b>152,135,222</b>	
<b>Surplus / (Deficit)</b>	<b>(1,504,753)</b>	<b>(5,798,655)</b>	<b>(5,435,796)</b>	<b>(6,065,749)</b>	<b>(8,922,470)</b>	<b>(10,164,197)</b>	<b>(37,891,620)</b>	

## GLOSSARY OF TERMS

**Aerated Systems:** controlled composting systems with optimum aeration conditions ensuring aerobic conditions exist for decomposition of biowaste.

**Anaerobic Digestion:** the biological decomposition of biowaste in the absence of oxygen and under controlled conditions in order to produce biogas and digestate.

**Biodegradable Content:** the percentage content of waste which is biodegradable. For municipal waste this usually fluctuates around 60%-70%.

**Biodegradable Municipal Waste (Biowaste):** municipal waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard.

**Biological Treatment:** involves composting, anaerobic digestion or any other process for stabilising and sanitising biodegradable waste.

**Bring Banks:** these are facilities in which members of the public deposit recyclable waste materials such as paper, glass, green waste and plastics in material specific receptacles for subsequent collection and delivery to material recovery facilities.

**Central Composting Facility:** a facility at which the biodegradable waste is delivered to be processed by composting into a compost product – can be for green (garden waste) food waste or a combination of both materials.

**Civic Amenity Facilities:** a manned reception facility that enables householders to deposit a wide range of household waste including recyclable and non-recyclable materials, bulky household waste and certain categories of household hazardous waste

**Co-Incineration:** involves plants where waste is used as a fuel or is disposed of at a plant along with other substances where energy generation or production may take place.

**Collection System:** a system of gathering, sorting or mixing of waste for the purpose of it being transported to a waste recovery or disposal facility.

**Commercial Waste:** waste from premises used wholly or mainly for the purposes of a trade or business or for the purposes of sport, recreation, education or entertainment but does not include household, agricultural or industrial waste.

**Community Composting Facilities:** facilities set up, whereby local communities can become involved in the management of their own wastes, whilst implementing the proximity principle and increasing awareness of waste recycling practices within their own community

**Compost:** the stable, sanitised and humus-like material rich in organic matter and free from offensive odours resulting from the composting process of separately collected biowaste.

**Composting:** the autothermic and thermophilic biological decomposition of separately collected biowaste in the presence of oxygen in order to produce compost.

**Compost Quality Standards:** are usually statutory in nature and designed to regulate potentially harmful aspects of compost production and use, and thereby protect the environment and human health.

**Digestate:** the material resulting from the anaerobic digestion of separately collected biowaste.

**Government Contracts Committee:** this committee assists the Department of Finance in formulating overall policy on public procurement. It is made up of senior officials in the higher spending Departments and is chaired by a Department of Finance representative. The Committee also adjudicates on contracts being awarded by Central Government Departments in certain cases.

**Hazardous Waste:** means "waste of a class listed in the current Hazardous Waste Catalogue, which either:

- Constitutes Category I type waste as specified in Part I of the Second Schedule to the Waste Management Act 1996 and has any of the properties specified in Part III of the same Schedule;

or

- Constitutes Category II type waste as specified in Part I of the Second Schedule to the Waste Management Act 1996 that contains any of the constituents specified in Part II of the same Schedule and has any of the properties specified in Part III of the same Schedule;

or

- Any other waste having any of the properties specified in Part III of the Second Schedule to the Waste Management Act, 1996 that may be prescribed as hazardous waste".

**Home Composting:** a process whereby biowaste is composted and used in gardens belonging to private households.

**Household Waste:** the waste produced within the grounds of a building or self-contained part of a building used for the purposes of living accommodation.

**Incineration:** a process by which heat is applied to waste in order to reduce its bulk, prior to final disposal. The process may or may not involve energy recovery.

**In-Vessel Composting:** the composting of biowaste in a closed reactor where the composting process is accelerated by controlled and optimised air exchange, water content and temperature control.

**IPC Licence:** a licence granted by the EPA in accordance with the requirements of the Environmental Protection Agency Act, 1992 and the Environmental Protection Agency (Licensing) Regulations 1994 (S.I. No. 85 of 1994). The purpose of which is the protection of the environment and the protection of human, animal and plant life from harm or nuisance from certain industrial activities.

**Kerbside Collections:** entail waste collectors collecting a range of recyclable waste from outside private households, employing separate bins for the main waste streams (usually dry recyclables, organic waste, and residual waste).

**Landfilling:** the disposing of waste at a waste disposal facility used for the depositing of waste onto or under the land.

**Landfill Directive:** an EU Directive which aims to, by means of stringent operational and technical requirements on the landfilling of waste, to implement measures, procedures and guidance to prevent or reduce as far as possible negative effects on the environment, in particular the pollution of surface water, ground water, soil and air, and on the global environment, including the green house effect, as well as any resulting risk to human health, during the whole life cycle of the landfill.

**Landfill Levy:** an environmental levy that is paid on top of normal gate fees by any private contractor or Local Authority that wishes to dispose of waste through a landfill site. The landfill levy is collected through landfill operators and forms part of a policy aimed at providing more incentives for re-use and recycling of waste.

**Material Recovery Facilities:** facilities where recyclables are sorted into specific categories and processed, or transported to processors for remanufacturing.

**Mechanical Biological Treatment:** the treatment of residual municipal waste in order to stabilise and reduce the volume of waste to be disposed off. A combination of mechanical processing and biological breakdown are employed.

**Multi-Story Dwellings:** dwellings consisting of numerous floors and occupied by more than one family.

**Municipal Waste:** waste from households, as well as commercial and other waste, which because of its nature or composition, is similar to waste from households.

**NACE:** This is a European system to structure the economy into statistical sectors. NACE is the abbreviation of National Accounts in Europe. Each sector of the economy is given a standard NACE Code.

**National Climate Change Strategy:** this Strategy provides a national framework for achieving greenhouse gas emission reductions by 13% above 1990 levels in-keeping with the EU target to reduce emissions by 8%, as part of the Kyoto Protocol of 1997.

**National Waste Data Base Report:** a national report that provides information on waste generation, waste management and waste infrastructure in Ireland.

**On-Site Composting:** the composting of biowaste where it is generated.

**Pay As You Throw Schemes:** schemes where the fee charged for collection and disposal increases with the frequency of bin or bag collections from households. This provides a financial incentive for residents to reduce waste through reducing, reusing or recycling, which can in turn lead to lower transportation and disposal costs for Local Authorities and private waste collection companies. PAYT schemes may consist of pay per bag, pay per container, pay per volume and may also include a pay per weight.

**Pay By Weight Schemes:** schemes whereby resident's pay for the weight of waste collected per household. This scheme is devised to offer financial incentives for residents to reduce the amount of waste to be collected and disposed off by public or private waste collectors.

**Polluter Pays Principle:** the principle set out in Council Recommendation 75/436/Euratom, ECSC, EEC of 3<sup>rd</sup> March 1975 1(20) regarding cost allocation and action by public authorities on environmental matters.

**Producer Responsibility Initiatives:** a series of initiatives undertaken by the Government to facilitate better management of priority waste streams, in line with the 'Polluter Pays Principle'.

**Quality Assurance Schemes:** are usually non-statutory in nature, and designed to ensure that producers maintain process management and produce a compost product of high quality, which will be easily marketed and profitable in nature.

**Recovery:** any activity carried out for the purpose of reclaiming, recycling or re-using waste in whole or in part.

**Recyclables:** waste materials that may be subjected to any process or treatment to make it re-useable in whole or in part.

**Recycling:** the subjection of waste to any process or treatment to make it re-useable in whole or in part.

**Residual Municipal Waste:** the fraction of municipal waste remaining after the source separation of municipal waste fractions, such as food and garden waste, packaging, paper and paperboard, metals, glass and is usually unsuitable for recovery or recycling.

**Separate Collection:** the separate collection of biodegradable waste from municipal waste in such a way as to avoid the different waste fractions or waste components from being mixed, combined or contaminated with other potentially polluting wastes, products or materials.

**Stabilised Biowaste:** waste resulting from the mechanical/biological treatment of biowaste, unsorted waste or residual municipal waste which does not comply with specified minimum standards of environmental quality.

**Thermal Treatment:** a process by which heat is applied to waste in order to reduce its bulk, prior to final disposal. Thermal treatment can involve a number of processes such as incineration, pyrolysis and gasification.

**Tradable Landfill Permits:** are a flexible economic instrument, devised to minimise the cost of meeting the Landfill Directive targets whilst giving Local Authorities the greatest amount of freedom. Should diversion of waste away from landfill and other actions mean that not all of the permits are required for a particular year, then Local Authorities will be able to trade them. On the other hand, a waste disposal authority who does not have enough permits to cover the amount of waste it intends to landfill would need to either increase its rate of diversion or purchase additional permits.

**Treatment Facilities:** facilities where waste undergoes thermal, physical, chemical or biological processes that change the characteristics of waste in order to reduce its volume or hazardous nature or facilitate its handling, disposal or recovery.

**Variable Charging (or Differentiated Charging):** a method where Local Authorities determine waste disposal fees for various areas within its jurisdiction. These may consist of Pay As You Throw or Pay-By-Weight for example.

**Waste:** any substance or object which the holder discards, or intends, or is required to discard, and anything which is discarded as if it were a waste, as per the Waste Management Act, 1996.

**Waste Collection Permit System:** a system whereby persons with a view to profit or otherwise in the course of business, collect waste are granted with a permit by a Local Authority in whose functional area the waste is collected.

**Waste Management Facility:** a site or premises used for the recovery or disposal of waste.

**Waste Management Plans:** statutory waste management plans prepared and implemented on a Regional basis in Ireland since 2001.

**Waste Minimisation:** any technique, process or activity that either avoids, reduces or eliminates waste at its source, or results in re-use or recycling.

**Waste Prevention:** A reduction in the quantity and harmfulness to the environment of waste and the materials and substances contained within waste.

**Waste Producer:** a person whose activities produce waste or who carries out pre-processing, mixing or other operations resulting in a change in the nature or composition of waste.

**Waste to Energy Plant:** a plant where waste undergoes thermal treatment with a recovery of energy due to the fact that the waste itself contains large amounts of thermal energy ready to be liberated either by combustion or by synthesis gas production followed by combustion. The energy that is recovered is often used to supply electricity.

**Windrow Composting:** the composting of biowaste placed in elongated rows which are periodically turned by mechanical means in order to increase the porosity of the heap and increase the homogeneity of the waste.

## ABBREVIATIONS

<b>AD</b>	Anaerobic Digestion
<b>AER</b>	Annual Environmental Report
<b>ANSWER</b>	A New Solid Waste Environmental Response
<b>BAT</b>	Best Available Techniques
<b>BATNEEC</b>	Best Available Techniques Not Entailing Excessive Costs
<b>BIM</b>	Bord Iascaigh Mhara
<b>BMW</b>	Biodegradable Municipal Waste
<b>BPEO</b>	Best Practicable Environmental Option
<b>C &amp; D</b>	Construction and Demolition
<b>C &amp; I</b>	Commercial and Industrial
<b>CCI</b>	Chambers of Commerce of Ireland
<b>CCN</b>	Community Composting Network
<b>CCRI</b>	Clondalkin Community Recycling Initiative
<b>CHP</b>	Combined Heat and Power
<b>Cré</b>	The Composting Association of Ireland Teoranta
<b>CSO</b>	Central Statistics Office
<b>DEHLG</b>	Department of the Environment, Heritage and Local Government
<b>DLRCC</b>	Dun Laoghaire Rathdown County Council
<b>DOA</b>	Department of Agriculture
<b>DUMP</b>	Disposal of Unused Medications Properly
<b>EAO</b>	Environmental Awareness Officer
<b>ECW</b>	Environmental Control Wardens
<b>ELVs</b>	End of Life Vehicles
<b>EPA</b>	Environmental Protection Agency
<b>ERTDI</b>	Environmental Research Technological Development and Innovation
<b>ESB</b>	Electricity Supply Board
<b>ESRI</b>	Economic and Social Research Institute
<b>EWC</b>	European Waste Codes

<b>FA</b>	Functional Area
<b>FRN</b>	Furniture Recycling Network
<b>GDP</b>	Gross Domestic Product
<b>GNP</b>	Gross National Product
<b>GPS</b>	Global Positioning System
<b>IBEC</b>	Irish Business and Employers Confederation
<b>IFFPG</b>	Irish Farm Film Producers Group
<b>IPC</b>	Integrated Pollution Control
<b>IPPC</b>	Integrated Pollution Prevention and Control
<b>IrBEA</b>	Irish Bio-Energy Association
<b>ISME</b>	Irish Small and Medium Enterprise
<b>LA</b>	Local Authority
<b>LAPD</b>	Local Authority Prevention Demonstration
<b>MBT</b>	Mechanical Biological Treatment
<b>MRF</b>	Materials Recovery Facility
<b>NCDWC</b>	National Construction and Demolition Waste Council
<b>NGO</b>	Non-Governmental Organisation
<b>NHWMP</b>	National Hazardous Waste Management Plan
<b>NRA</b>	National Roads Authority
<b>NWPP</b>	National Waste Prevention Programme
<b>OEE</b>	Office of Environmental Enforcement
<b>PAYT</b>	Pay As You Throw
<b>PCB</b>	Polychlorinated biphenyl
<b>PPP</b>	Public Private Procurement Policy
<b>PRIs</b>	Producer Responsibility Initiatives
<b>R &amp; D</b>	Research and Development
<b>RIWMO</b>	Regional Industrial Waste Minimisation Officer
<b>RPGs</b>	Regional Planning Guidelines
<b>SFA</b>	Small Firms Association
<b>SME</b>	Small-to-Medium Enterprises

<b>SMP</b>	Sludge Management Plan
<b>SWAHB</b>	South Western Area Health Board
<b>TFS</b>	Trans-Frontier Shipments
<b>TPA</b>	Tonnes per annum (also tpa)
<b>WEEE</b>	Waste Electrical and Electronic Equipment
<b>WTE</b>	Waste To Energy



## APPENDIX A - LIST OF RELEVANT LEGISLATION

1967	Council Directive on Classification, Packaging & Labelling of Dangerous Substances	67/548/EEC
1979	(Dangerous Substances) Amending EU Directive	79/831/EEC
1992	(Dangerous Substances) Amending Directive	92/32/EEC
1975	Council Directive on the Disposal of Waste Oils	75/439/EEC
1986	Amending Directive	87/101/EEC
1991	Amending Directive	91/692/EEC
1975	Council Directive on Waste	75/442/EEC
1986	Amending Directive	87/101/EEC
1991	Amending Directive	91/156/EEC
1991	Amending Directive	91/692/EEC
1996	Commission Decision	96/350/EC
1996	Amending Directive	96/59/EC
1976	Council Directive on the Disposal of PCB's	76/403/EEC
1978	Council Directive on Toxic & Dangerous Waste	78/319/EEC
1977	Council Directive on Waste from the Titanium Dioxide Industry	78/176/EEC
1982	Amending Directive	82/883/EEC
1983	Amending Directive	83/29/EEC
1991	Amending Directive	91/692/EEC
1984	Council Directive on the Transfrontier Shipment of Hazardous Waste	84/631/EEC
1984	Amending Directive	85/469/EEC
1986	Amending Directive	86/279/EEC
1985	Amending Directive	87/112/EEC
1985	Council Directive on Containers of Liquids for Human Consumption	85/339/EEC
1985	Council Directive on Sewage Sludge in Agriculture	86/278/EEC
1986	Council Directive on protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture	86/278/EEC
1986	Council Directive on the Disposal of Animal Waste	90/667/EEC
1986	Council Directive on Emissions from New Waste Incineration Plants	89/369/EEC
1987	Council Directive on Environmental Pollution by Asbestos	87/217/EEC
1989	Council Directive on Emissions from Waste Incineration Plants	89/429/EEC
1990	Council Directive on the Disposal of Animal Waste	90/425/EEC
1991	Council Directive on Batteries containing Dangerous Substances	91/157/EEC
1998	Amending Directive 91/101/EC	98/101/EC
1991	Council Directive Concerning Urban Waste Water Treatment	91/271/EEC
1991	Council Directive on Hazardous Waste	91/689/EEC
1994	Amending Directive	94/31/EC

1992	Council Directive on the Supervision and Control of Shipments of Radioactive Waste Between Member States and Into and Out of the Community	92/3/Euratom
1993	Council Regulation on the Supervision and Control of Shipments of Waste Within, Into and Out of the European Community	93/259/EEC
1997	Amended by Council Regulation	120/97/EC
1998	Amended by Commission Regulation	2408/9
1999	Amended by Council Regulation	1420/1999/EC
1999	Amended by Council Regulation	1547/1999/EC
2001	Amended by Commission Regulation	2557/2001/EC
1993	Council Decision On The Control Of Transboundary Movements Of Hazardous Wastes And Their Disposal	93/98/EEC
1997	Amending Council Decision	97/640/EC
1993	Council Regulation on the Evaluation and Control of the Risks of Certain Substances	93/793/EEC
1993	Council Regulation on Shipments of Radioactive Substances between Member States	93/1493/Euratom
1994	European Parliament and Council Directive On Packaging and Packaging Waste	94/62/EC
1994	Commission Regulation Laying Down the Principles for the Assessment of Risks to Man and the Environment of Existing Substances in Accordance with Council Regulation (EEC) No. 793/93	94/1488/EC
1994	Council Directive On The Incineration Of Hazardous Waste	94/67/EC
1996	Control Directive On The Disposal Of Polychlorinated Biphenyls And Polychlorinated Terphenyls (PCB's/ PCT's).	96/59/EC
1996	Control Directive on Integrated Pollution Prevention and Control Directive	96/61/EC
1999	EU Directive on the Landfill of Waste	99/31/EC
2000	Council Directive On the Incineration of Waste	2000/76/EC
	Repeals Directive	89/369/EEC
	Repeals Directive	89/429/EEC
	Repeals Directive	94/67/EC
2001	Strategic Environmental Assessment Directive	2001/42/EC
2002	Council Directive on the End of Life Vehicles	2000/53/EC
2002	European Parliament and Council Regulation on Waste Statistics	2150/2002
2003	European Parliament and Council Directive on Waste Electrical and Electronic Equipment	2002/96/EC
2003	Amending Directive	2003/108/EC
2003	European Parliament And Council Directive On The Restriction Of The Use Of Certain Hazardous Substances In Electrical And Electronic Equipment	2002/95/EC
2003	Council Regulation Laying Down Health Rules Concerning Animal By-Products Not Intended For Human Consumption Animal By-Products Regulations	1774/2002/EC

## National Legislation

1878	Public Health (Ireland) Act	
1979	(Dangerous Substances) (Classification, Packaging & Labelling) Regulations	SI No.383
1980	(Dangerous Substances) Amending Regulations	SI No.34
1983	(Dangerous Substances) Amending Regulations	SI No.27
1984	(Dangerous Substances) Amending Regulations	SI.No.335
1986	Dangerous Substances (Conveyance of Scheduled Substances by Road) (Trade or Business) (Amendment) Regulations	SI No.268
1986	Dangerous Substances (European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)) Regulations	SI No.269
1986	(Dangerous Substances) (Classification, Packaging & Labelling) (Amendment) Regulations	SI No.47
1986	Dangerous Substances (Methods and Apparatus for Testing Petroleum) Regulations	SI No.128
1986	(Dangerous Substances) (Classification, Packaging & Labelling) (Amendment) Regulations	SI No.228
1979	The European Communities (Waste) (No. 2) Regulations	SI No.388
1982	The European Communities (Waste Oils) Regulations	SI No.399
1984	(Waste Oils) Regulations	SI No.107
1992	The European Communities (Waste Oils) Regulations	SI No.399
1979	Waste Regulations	SI No.390
1984	Waste Regulations	SI No.108
1982	Toxic & Dangerous Waste Regulations	SI No.33
1988	Transfrontier Shipment of Hazardous Waste Regulations	SI No.248
1994	European Communities (Transfrontier Shipment of Waste) Regulations	SI No.121
1994	European Communities (Supervision and Control of Certain Shipments of Radioactive Waste) Regulations	SI No.276
1987	Air Pollution Act	SI No.6
1992	Air Pollution Act, 1987 (Municipal Waste Incineration) Regulations	SI No.347
1987	Council Directive on Environmental Pollution by Asbestos 87/217/EEC(Asbestos Waste) Regulations	SI No.30
1993	European Communities (Asbestos Waste) Regulations	SI No.90
1996	Dumping at Sea Act	S.I. No. 14
1997	Litter Pollution Act	S.I. No. 12
1992	Environmental Protection Agency Act.	S.I. No. 7
1985	Diseases of Animals (Feeding and Use of Swill) Order	S.I. No. 153
1987	Diseases of Animals (Feeding and Use of Swill) (Amendment) Order	S.I. No. 133
1991	Sea Pollution Act	S.I. No. 27
1994	Sea Pollution (Prevention of Pollution by Garbage from Ships) Regulations	S.I. No. 45

1996	Waste Management Act	S.I. No. 10
1997	Waste Management (Licensing) Regulations (Revoked by S.I No. 185 of 2000)	S.I. No 133
1997	Waste Management (Planning) Regulations	S.I. No. 137
1997	Waste Management (Register ) Regulations	S.I. No. 183
1997	Waste Management (Packaging) Regulations	S.I. No. 242
1997	Waste Management (Farm Plastics)	S.I. No. 315
1998	European Communities (Licensing of Incinerators of Hazardous Waste) Regulations	S.I. No. 64
1998	Waste Management Amendment of Waste Management Act 1996 (Regulations)	S.I. No. 146
1998	Waste Management (Movement of Hazardous Waste) Regulations	S.I. No. 147
1998	Waste Management (Use of Sewage Sludge in Agriculture) Regulations	S.I. No. 148
1998	Waste Management (Transfrontier Shipment of Waste) Regulations	S.I. No. 149
1998	Waste Management (Licensing) (Amendment) Regulations (Revoked by S.I No.185 of 2000)	S.I. No. 162
1998	Waste Management (Hazardous Waste) Regulations	S.I. No. 163
1998	Waste Management (Miscellaneous Provisions) Regulations	S.I. No. 164
1998	Waste Management (Permit) Regulations	S.I. No. 165
1998	European Communities (Amendment of Waste Management Act 1996) Regulations	S.I. No. 166
1998	Waste Management (Packaging) (Amendment) Regulations	S.I No. 382
2000	Waste Management (Hazardous Waste) (Amendment) Regulations	S.I. No. 73
2000	Waste Management (Licensing) Regulations (Revoked by S.I No. 395 of 2004)	S.I. No. 185
2001	Waste Management (Amendment) Act 2001	S.I. No. 36
2001	Waste Management (Use Of Sewage Sludge In Agriculture) (Amendment) Regulations	S.I. No. 267
2001	Waste Management (Farm Plastics) Regulations	S.I. No. 341
2001	Waste Management (Prescribed Date) Regulations	S.I. No. 390
2001	Waste Management (Licensing) (Amendment) Regulations (Revoked by S.I No. 395 of 2004)	S.I. No. 397
2001	Waste Management (Collection Permit) Regulations	S.I. No. 402
2001	The Prohibition on the Use of Swill Order	S.I. No. 597
2001	Waste Management (Environmental Levy) (Plastic Bag) Regulations	S.I. No. 605
2002	Waste Management (Licensing) (Amendment) Regulations	S.I. No. 336
2002	European Communities (Amendment of Waste Management (Licensing) Regulations, 2000) Regulations (Revoked by S.I No. 395 of 2004)	S.I No. 337
2002	Diseases of Animals Act 1966 (TSE) (MBM and Poultry Offal) Order,	SI. No. 551
2003	Waste Management (Packaging) Regulations	S.I. No. 61

2003	Protection of the Environment Act 2003	
2004	Protection of the Environment Act 2003 (Commencement) Order	S.I. No. 393
2004	Waste Management (Licensing) Regulations	S.I. No. 395
2004	Guidelines for Regional and Planning Authorities in Ireland on implementation of the SEA Directive	
2004	Guidelines For Treatment Of Animal By- Products In Approved Composting Or Biogas Plants In Ireland	



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