

## **12 POLICY AND LEGISLATION CHANGES AND WASTE PROJECTIONS**

### **12.1 INTRODUCTION**

The original Waste Management Plans adopted throughout Ireland have had a dramatic impact on the approach to managing waste throughout the country over the past five years. This chapter assesses the current trends in waste management and how future policies and legislation will impact the Connacht Region.

### **12.2 LEGISLATION AND POLICY IN WASTE MANAGEMENT/ENVIRONMENTAL ISSUES**

European policy on waste management is embodied in a number of Directives, some of which contain statutory targets for minimising, reusing, recycling or recovering of waste, and have set out a certain timeframe in which these targets must be achieved by member states. Much of the legislation governing waste management in Ireland is based on transposing the EU Directives into law.

#### **12.2.1 Recent EU Legislation**

##### **The EU Landfill Directive (1999/31/EC)**

The EU Landfill Directive (1999/31/EC) places an obligation on countries to reduce the amount of biodegradable municipal waste (BMW) that is being landfilled. The Directive imposed targets for the landfilling of biodegradable waste based on comparative quantities from 1995. Targets were set for 2006, 2009 and 2016 for reduction of this waste stream.

##### **EU Directive (2000/76/EC) on the Incineration of Waste**

This Directive supersedes EU Directives (89/368/EEC and 89/429/EEC) on the incineration of non-hazardous waste, and EU Directive (94/67/EC) on the incineration of hazardous wastes. The Directive aims to prevent or limit negative effects on the environment and the resulting risks to human health from the incineration or co-incineration of waste. It sets limit values for the emissions of dioxins, mercury and dusts arising from waste incineration, along with monitoring and operational requirements.

The Directive sets out minimum operational requirements in order to guarantee complete waste combustion. The quantity and harmfulness of incineration residues must be kept to a minimum and residues must, as far as possible, be recycled. All incineration or co-incineration plants planned for Ireland will be licensed and monitored by the EPA, who will specify the type and quantity of waste that should be allowed to be treated in such plants.

##### **EU Directive (2000/53/EU) on End-of-Life Vehicles (ELV)**

The EU Directive on End-of-Life Vehicles (2000/53/EC) was introduced in 2000. This Directive makes provision for the holder/owner of the car to bring the car to a treatment facility free of charge so that it can be recycled and disposed of in an environmentally sustainable manner. In addition, producers must endeavour to reduce the amount of hazardous materials used in the production of vehicles in a way that allows them to be easily dismantled.

### **EU Directive (2002/96/EU) on Waste Electrical and Electronic Equipment (WEEE)**

The aim of this Directive (2002/96/EC) is to increase recovery rates for waste/scrap items, and to reduce the quantities of this waste stream consigned to landfill. Producers of WEEE are responsible for the recovery of end-of-life equipment such as computers, televisions, vacuum cleaners etc, deemed a priority waste by the EU. The Directive includes a target of a minimum of 4kg of WEEE to be collected per inhabitant per year by 2006.

### **EU Regulation on Animal By-Products (1774/2002/EC)**

The Animal By-Products Directive (1774/2002/EC) is important in a waste context in that it regulates the disposal and use of animal by-products that are not intended for human consumption. The Animal By-Products Regulation came into force on 2<sup>nd</sup> May 2003, and divides by-products into 3 categories, specifying the means of disposal for each category.

Meat, poultry and vegetable waste falls within the definition of “catering waste” and is thereby an animal by-product. In addition, there is a requirement for a separate veterinary authorization (in addition to normal waste authorization) of Composting and anaerobic digestion plants treating catering waste (Article 6.6 of S.I. 248 of 2003 (as amended by S.I. 707 of 2005) transposing EU regulation 1774/22002).

### **Liability Directive (2004/35/CE)**

This Directive came into force in April 2004 and must be implemented in member states by 30<sup>th</sup> April 2007. The purpose of the Directive to establish a framework of environmental liability based on the ‘polluter-pays’ principal, to prevent and remedy environmental damage.

It is aimed at preventing environmental damage by forcing industrial polluters to pay prevention and remediation costs.

The Directive aims to establish a framework that would prevent “significant environmental damage” or rectify damage after it has occurred. Significant environmental damage will be defined by reference to:

- Biodiversity, whether protected at EU or national levels,
- Waters covered by the Water Framework Directive and
- Human health (including land contaminated when it is a threat to human health).

## **12.2.2 Recent National Legislation**

Since the making of the last Plan, the following legislation has been introduced with relevance to Waste Planning issues.

### **Waste Management (Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment) Regulations 2005, S.I. No. 341 of 2005**

These Regulations are designed to minimise waste arisings of certain hazardous substances by minimising the use of certain heavy metals in electrical and electronic equipment as required by Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment. These Regulations impose obligations on persons who supply electrical and electronic equipment to the Irish market, whether as retailers, importers or manufacturers.

### **Waste Management (Electrical and Electronic Equipment) Regulations 2005, S.I. No. 340 of 2005**

These Regulations are designed to promote the recovery of waste electrical and electronic equipment. The Regulations impose obligations on persons who supply electrical and electronic equipment to the Irish market, whether as retailers, importers or manufacturers.

### **Waste Management (Use of Sewage Sludge in Agriculture) (Amendment) Regulations 2001**

These replaced the 1991 Regulations on the protection of the environment, and in particular of soil, when sewage sludge is used in agriculture.

### **Waste Management (Licensing) (Amendment) Regulations, 2002**

These Regulations transpose some of the requirements of Directive 99/31/EC on the Landfill of Waste.

### **Waste Management (Amendment) Act 2001**

The making of a Waste Management Plan as an “Executive Function” is provided for under this legislation.

### **Protection of the Environment Act 2003**

This Act updates and improves the legislation governing the Integrated Pollution Control (IPC) licensing regime, such that it is replaced by Integrated Pollution Prevention and Control (IPPC) licensing (in order to comply with EU legislation) and provides a statutory basis for incorporating improved groundwater protection requirements. In specific waste management terms, the Act provided for a number of new measures, including the introduction of explicit new powers for local authorities to charge for waste services.

### **Waste Management (Licensing) (Amendment) Regulations, 2004**

These Regulations provide for waste licences to be issued on the basis of Best Available Techniques (BAT) rather than Best Available Technology Not Entailing Excessive Cost (BATNEEC). The application of BAT will further improve the environmental performance from future waste facilities in Ireland. In addition, changes were made to the amount of information to be supplied by applicants to ensure greater transparency in relation to waste activities. Energy efficiency is now also a consideration in deciding on waste licence applications, and new powers to revoke or suspend a licence based on “fit and proper person” have been introduced. In general, several amendments have been made to Waste Management legislation over the past five years, primarily aimed at reducing certain waste streams from being landfilled, on limiting the inclusion of harmful materials in the production of goods and products and on a more comprehensive permitting and licensing system.

## **12.2.3 Pending Waste Policy & Legislation**

### **EU Soil Strategy**

The EU is taking steps in the development of a comprehensive EU policy on soil protection, which may impact on the spreading of compost, sludge and animal slurries.

### **New Sludge Directive**

A third draft of a working document on sludge was published in April 2000, which proposed to reduce maximum levels of heavy metals in the soil and sludge in comparison with those limits previously stated in Directive 86/278/EEC. The new Directive will require that producers and handlers of sludge must be certified and ultimately be responsible for the quality of sludge produced. The overall objective of this Directive will be to improve the rates of recycling of sludge and organic matter.

The European Commission Communication on the Thematic Strategy for the Prevention and Recycling of Waste (published 21<sup>st</sup> December 2005) proposes that Directive 86/278/EC will be reviewed with a view to tightening the quality standards under which such use is allowed following the adoption of the Thematic Strategy on soil and the associated measures.

## **Draft Waste Management (End of Life Vehicle) Regulations 2006**

The Regulations require 'Producers' to register with the Local Authorities so that there is at least:

- One Approved Treatment Facility (ATF) facility in each Local Authority Area, and
- One ATF per 150,000 of population in all Local Authorities - whichever is the greater.

A 'Producer' is defined as anybody that imports a vehicle. There is no minimum threshold requirement, which would exempt the smaller dealer or individual who undertakes this on a business basis. In effect the car importer or 'Producer' will be obliged to have a contract with an Approved Treatment Facility in each Local Authority Area (and more in those with a pop > 150,000). It may be that the one Approved Treatment Facility (ATF) will have contracts with several 'Producers'. Producers will be required to pay a fee to register. It is expected that fees of the order of €100,000 will accrue to each Local Authority under the current Draft Regulations. The consequence of this is that the workload of the Local Authorities will increase accordingly. The producer can only register if they have a contract with a local ATF.

### **12.2.4 Other Relevant EU Legislation**

Additional European Legislation currently being considered includes a Directive on waste tyres. This Directive is expected to set out a 'producer responsibility' approach to management of this waste stream - the producer/ importer of the products will have to take back and pay for recycling of the products at the end of their life. This in turn will cause companies to rethink their product design in order to minimise recycling costs. The details of how this scheme will operate in Ireland are not yet clear, but it is possible that the role enforcing compliance with the WEEE Directive will fall to the local authority, as is the case with the Packaging Regulations and the Farm Plastics Regulations.

### **12.2.5 Other Environmental Legislation**

Government policy is guided by the National Sustainability Document and a National Environment Partnership Forum to develop the concept of sustainable development. The Forum will represent a cross section of interest groups and a Consultation paper has been produced.

There is also a proposed amendment to Directive 91/689/EC on hazardous waste. This deals with Segregated collection of certain wastes under Segregated collection schemes, and requires each Member State to set up public information campaigns to efficiently implement the Directive. The introduction of new legislation, together with pending legislative enactments has had a significant impact on how Waste Management Practices have developed in the country.

The current Proposal is to Revise Directive 75/442/EEC on Waste (as previously amended by Directive 91/156/EC) and to incorporate updated provisions of Directive 91/689/EC on Hazardous Waste and Directive 75/439/EC on Waste Oils into Revised Directive – with all the original Directives to be revoked.

A list of relevant waste management legislation is contained in Appendix A.

### **12.2.6 EU & National Programmes & Initiatives**

The EU Sixth Environment Action Programme sets out objectives in the shape of Europe's future environment at the start of the 21<sup>st</sup> century. This vision "Environment 2010: Our Future, Our Choice" seeks the following aims:

- To decouple generation of waste from economic growth by establishing most sustainable consumption patterns,
- For waste generated, these should represent very low risks to the environment and our health,
- We should maximise recycling and bring “final disposal to an absolute minimum” and
- Waste should be treated as close as possible to where it is generated (“proximity principle”).

A number of Thematic Strategies were proposed to deal with the environmental challenge of waste. The most advanced of these currently is the *Thematic Strategy on the Prevention and Recycling of Waste*. Among the many issues discussed were the development of material based recycling targets and end-of-life products based targets, the use of economic instruments (such as the plastic bag levy in Ireland) and to ensure that recycling is both easy and clean to maximise the resource value of waste.

In 2000 the Lisbon Strategy set out an ambitious agenda of economic and social reforms to create a highly dynamic and competitive knowledge-based economy. In 2001 a broad Strategy for Sustainable Development was founded by the European Council in Gothenburg and in 2002 its external dimension was defined in Barcelona ahead of the UN’s World Summit on Sustainable Development. On 9<sup>th</sup> February 2005 the EU Commission presented a Communication in the 2005 Review of the EU Sustainable Development Strategy. The Sustainable Development Strategy and the Lisbon Strategy share the same ultimate goal, namely to improve welfare and living conditions in a sustainable way for present and future generations.

Among the issues of relevance to the Regional Waste Management Plans in the 2005 Review of the Sustainable Development Strategy are the following: -

- Managing our natural resource – protecting our water, air and land from threats to our biodiversity,
- Protecting public health and environment,
- Minimising poverty and social exclusion,
- Tackling priority waste streams setting targets and monitoring performance and
- Identifying policies to encourage creation of markets.

Opportunities may exist to implement waste prevention and recycling in partnership with community networks to maximise resource recovery and provide employment thus minimizing social exclusion. To maximise recycling markets at home, the pursuance of “green procurement policies” need to be encouraged in the Plan to help create sustainable markets. More recycling centres to collect household, commercial, and selective industrial waste. (e.g. C&D, electronic, packaging and end of life bulky items) are needed. National initiatives are set out in Table 12.1.

**Table 12.1: Waste Management Initiatives at National Level**

<b>Waste Management Initiative</b>	<b>Comment</b>
National Waste Prevention Programme	The National Waste Prevention Programme (NMPP) was launched in April 2004 by the Minister for the Environment, Heritage and Local Government and is to be implemented by the Environmental Protection Agency
Local Authority Prevention Demonstration Programme	Currently the most relevant component of the NWPP for the Connacht Region is the development of the Local Authority Prevention Demonstration Programme (LAPD). This programme provides local authorities with an opportunity to apply for funding for prevention projects/programmes that demonstrate practical measures for preventing waste. Further targeted action is due to be carried out under the NWPP over the coming years.
Race Against Waste	The Race Against Waste Campaign is a national awareness and communication campaign, established to promote awareness at a national level of the importance of managing waste and to change the behaviour both at home and at work in order to reduce the amount of waste being produced and increase recycling and composting. Developed by the DEHLG the campaign currently works closely with the Environmental Awareness Officers in the local authorities and will continue to do so.
Household 'Use Related Charging'	In 2004 the Minister for the Environment requested local authorities to implement use-related charging for household waste in their areas by January 1 <sup>st</sup> 2005. The policy was given further elaboration in the 2004 Government Policy Statement 'Taking Stock and Moving Forward'.
Producer Responsibility Initiatives	Following the publication of the Government policy statement 'Delivering Change' in 2002, 'producer responsibility initiatives' are being implemented in a number of sectors, promoted by the Department of Environment Heritage and Local Government. The concept of producer responsibility means that industries producing goods and materials need to take responsibility for the environmental impact of placing these goods on the market. Areas targeted include, packaging, newspaper, C&D waste, Waste Electrical & Electronic Equipment (WEEE), end of life vehicles, tyres and farm plastic.
Market Development Group	The Government has established a Market Development Group to drive a market development programme for recyclable materials. This is being funded from the Environment Fund. Three working groups have been established from relevant sectors (including industry, waste companies and the public sector) to work on specific materials: plastics, paper and compost. Local authorities will also need to support market development measures by taking a lead where possible in demonstration of opportunities and pilot schemes. Co-operation from the various industry sectors will also be required.
North-South Co-Operation for Waste Management	The potential benefits of addressing waste management on an all-island basis has been highlighted at Government level and through the research of the North-South Ministerial Council. By considering recyclable materials on an All-Ireland basis, some potential 'economies of scale' become apparent. There is also the opportunity to share expertise and technology resources in the waste management sector.
Improvements in Waste Regulation and Enforcement	In 2003/2004 significant additional resources were provided by the DEHLG to assist in staffing the regulation and enforcement units. The EPA is carrying out two studies aimed at improving the effectiveness of waste regulation and enforcement across the Country. These projects – a Review of Unauthorised Waste Disposal, and a Review of Waste Permitting - will lead to training programmes for local authority staff and new protocols to be used in day-to-day activities. In addition to this, the EPA is co-ordinating a number of useful 'working groups' to assist in efficient and consistent implementation of the Packaging Regulations and the movement of waste internationally under the Trans Frontier Shipment legislation.
Use of Economic Instruments	Current instruments in place include the Plastic Bag Levy and Landfill Levy. Further economic instruments are being considered – for example to help recover costs of litter from fast food and chewing gum. An economic levy is also an option when 'producer responsibility' schemes are being developed. In some countries, a levy is also imposed on incineration plants, in order to keep the emphasis on waste reduction and recycling.

## 12.3 DEVELOPMENTS WITHIN THE CONNACHT REGION

One of the main developments in the Connacht Region during the period of the 2001 Waste Plan has been the consolidation of the waste industry with a small number of larger professional and well-organised companies now offering a high level of service. This is consistent with the situation nationally. A net result of these changes has inevitably been an increase in waste charges to reflect the higher level of service and the move towards an increasingly integrated waste management system.

During this Waste Plan Review extensive consultation was carried out with the private sector to get their views on the future of the waste industry. It is evident that there is strong interest from the private sector in continuing to develop waste facilities in the Region.

### 12.3.1 Trends in Population and Household Growth

Table 12.2 shows the recent trends in population growth in the Connacht Region. It can be seen from the table that between 1996 and 2002 the population of the Region increased by 7.2%.

**Table 12.2: Trends in Population Growth in Connacht Region**

Local Authority	1996	2002	Increase
G City C	57,241	65,832	14.9%
GCC	131,613	143,245	8.7%
LCC	25,057	25,799	3.0%
MCC	111,524	117,446	5.3%
RCC	51,975	53,774	3.5%
SCC	55,821	58,200	4.2%
Connacht Region	<b>433,231</b>	<b>464,296</b>	<b>7.2%</b>

The waste model developed for the Connacht Waste Management Strategy Study (1998) covered a 15 year time period from 1999 to 2013 inclusive. The population projections used were based on the population and labour force projections (1996-2026) produced by the CSO. These growth factors have been revised to reflect demographic trends in the Region over the last five years.

Projection data sets for the Region from a number of sources were examined, namely the Central Statistics Office (CSO) and the relevant Regional Planning Guidelines. Following analysis of the CSO regional population projections it was felt that the relevant fertility and migration factors which govern projections did not reflect the current demographic trends in the Region. The more recent Population and Labour Force Projections (published December 2004) contain much more accurate factors of migration and fertility. These projections were compared with the projection of the relevant Regional Planning Guidelines projections. To obtain a single set of household projections, the mean of these two sets of projections was used. The resulting percentage growth factors are presented in Table 12.3.

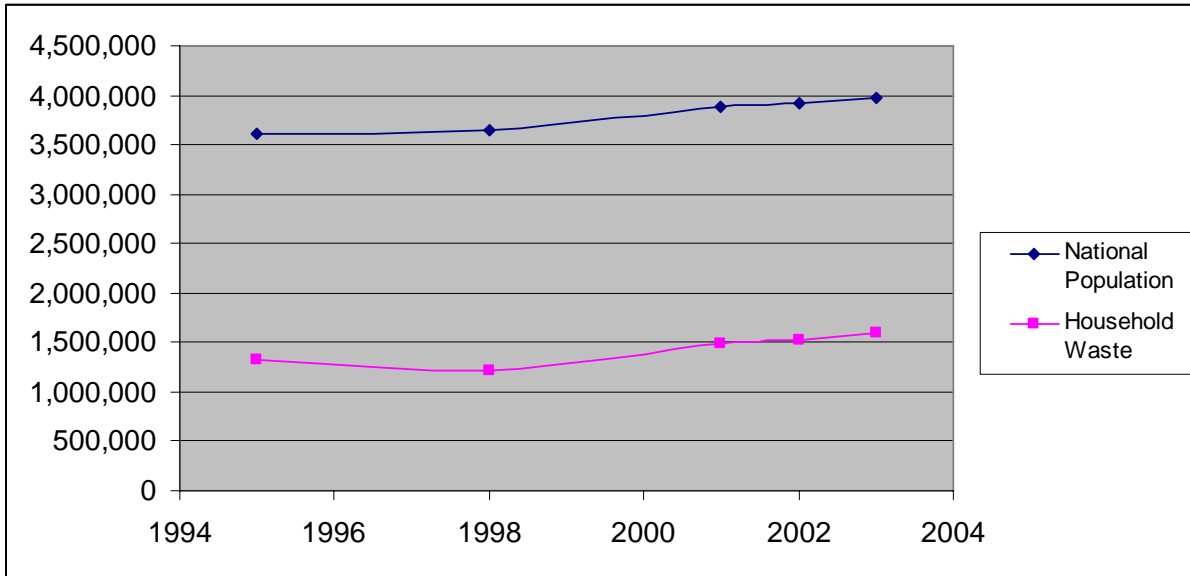
**Table 12.3: Household Population Projections 2002 – 2020**

Year	Mean – No. of Households	Growth (%)
2002	152,544	
2003	156,121	2.34
2004	159,779	2.34
2005	163,520	2.34
2006	167,348	2.34
2007	171,594	2.54
2008	175,946	2.54
2009	180,410	2.54
2010	184,989	2.54
2011	189,689	2.54
2012	194,548	2.56
2013	199,538	2.57
2014	204,665	2.57
2015	209,935	2.57
2016	215,354	2.58
2017	220,655	2.46
2018	226,111	2.47
2019	231,728	2.48
2020	237,484	2.48

### 12.3.2 Recent Trends in Waste Growth (1999- 2004)

#### National

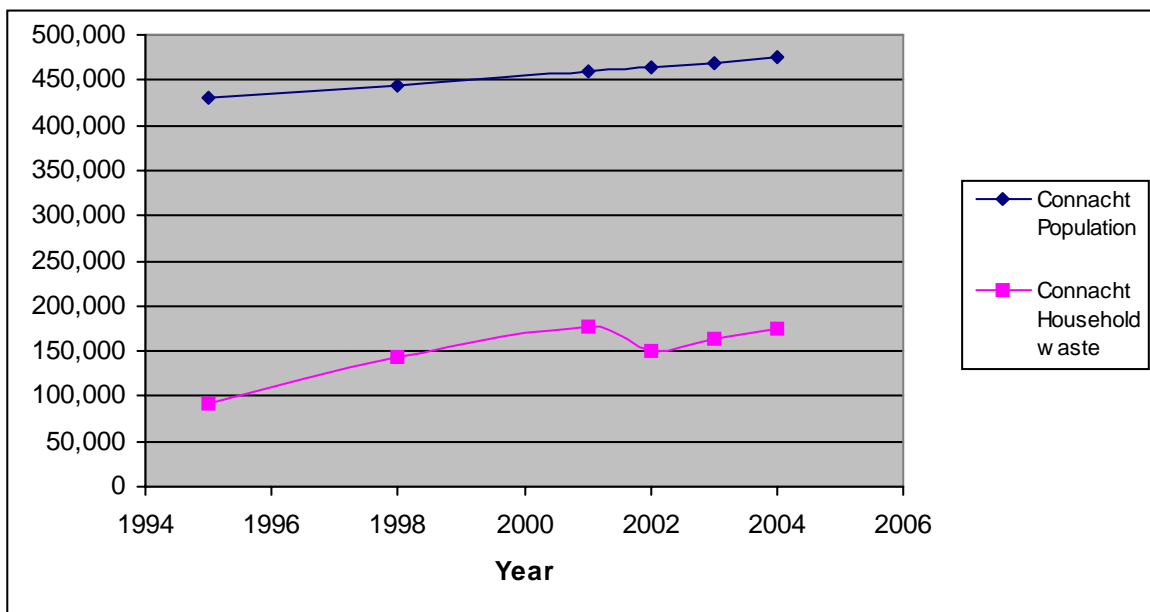
Figure 12.1 illustrates the national growth in household waste arisings from 1995 to 2003. The graph also shows the corresponding increase in population over the same period. The data for 2003 suggests a tempering in the waste growth to fall more in line with the population curve. This may also reflect improvement in the quality of available waste data.



**Figure 12.1: National Profile – Population and Household Waste**

**Connacht Region**

In the Connacht Region, the household waste generation for the same period has been examined and a similar waste growth and population increase has been observed. The waste data for 1995 and 1998 relied heavily on estimates (Figure 12.2).

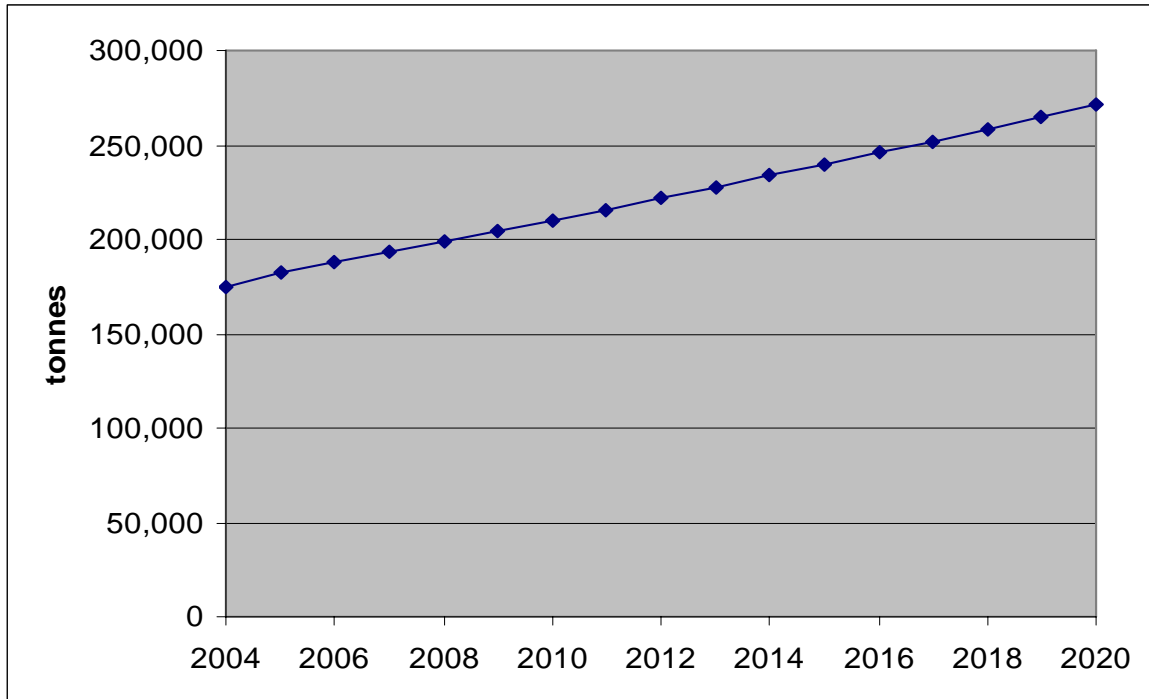


**Figure 12.2: Connacht Profile - Population and Household Waste**

**Source: EPA NWD Reports (1995, 1998 & 2001) and NWD Interim Report 2003 and Local Authority NWD Returns 2004**

In 1998 the generation of household waste was 0.33 tonnes per person nationally. By 2004, household waste arisings in the Connacht Region were 174,951 tonnes for 161,903 households. The corresponding waste arisings per person was calculated to be 0.37 tonnes per annum. In summary the waste arisings per person had risen by 12%, i.e. 2% per annum over a six year period.

This Plan aims to provide a profile of the future trend in waste growth in household waste using household/waste projections for 2003 to 2020. The projected waste growth for the Connacht Region is illustrated in Figure 12.3.

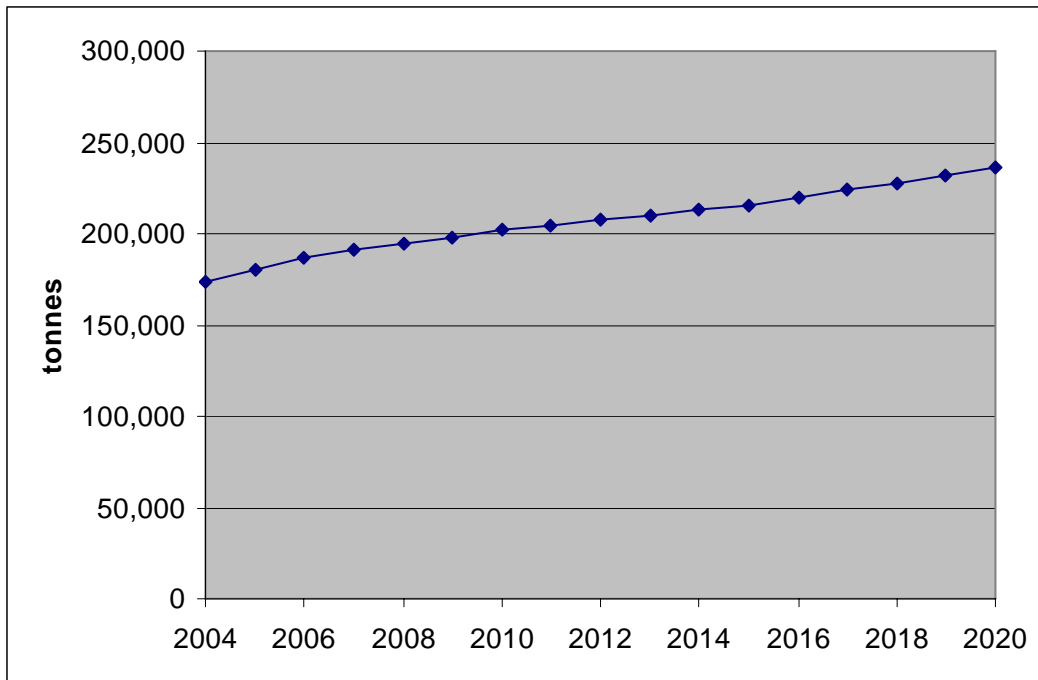


**Figure 12.3: Projected Growth in Household Waste 2003-2020**

### 12.3.3 Commercial / Industrial Waste Generation

The generation of commercial and industrial waste arisings are inextricably linked to national GDP, a trend that has been recorded across the EU.

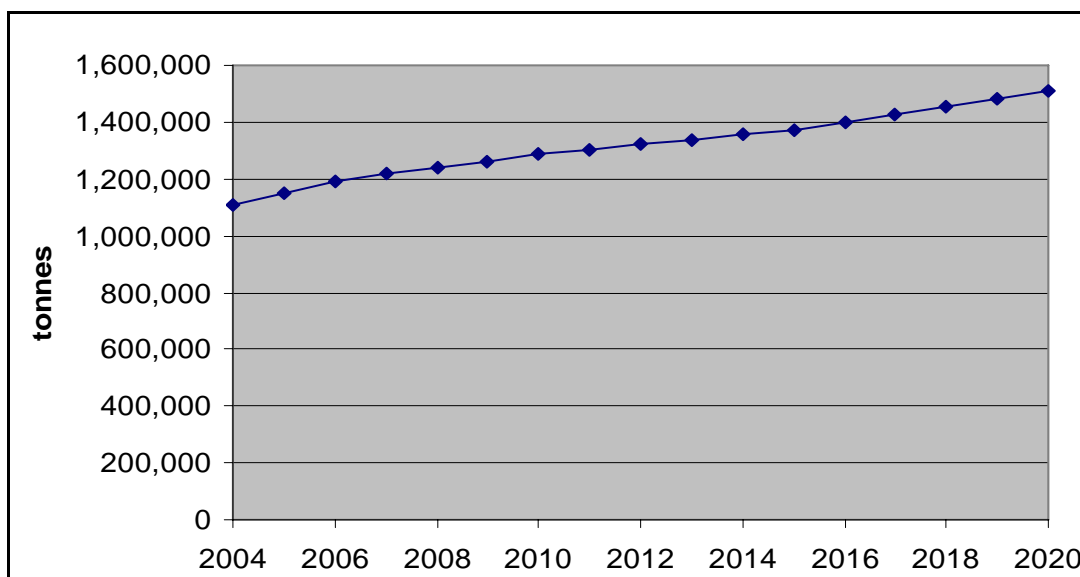
An estimate of commercial and industrial waste arisings from 2004 to 2020 is shown in Figure 12.4 and has been estimated simply using Gross Domestic Product (GDP) factors. The challenge for the Connacht Region is to decouple commercial/industrial waste generation from the national GDP.



**Figure 12.4: Projected Growth in Commercial/Industrial Waste 2004 - 2020**

### 12.3.4 Construction / Demolition Waste Generation

In the absence of reliable statistics over the years, a simple approach must be applied, in which case linking activity in the construction sector to the changing economic circumstance of the country as represented by the GDP. Recent trends indicate that growth in the Construction Industry turnover match the continued growth of national GDP. Similar to the C&I waste stream, a future projection of construction and demolition waste has been generated using GDP estimates, as illustrated in Figure 12.5.



**Figure 12.5: Projected Growth in Construction & Demolition Waste 2004-2020**

Table 12.4 summarises the projected waste arisings per annum in the Connacht Region for the period 2004 – 2020.

**Table 12.4: Waste Projections 2004-2020**

Year	Household (t)	Commercial/ Industrial (t)	Municipal (t)	C&D (t)
2004	174,951	173,695	348,646	1,107,735
2005	182,690	179,948	362,638	1,147,613
2006	187,898	186,426	374,324	1,188,928
2007	193,146	190,900	384,047	1,217,462
2008	198,540	194,527	393,067	1,240,594
2009	204,084	198,029	402,113	1,262,924
2010	209,785	201,990	411,774	1,288,183
2011	215,649	204,615	420,265	1,304,929
2012	221,446	207,275	428,721	1,321,893
2013	227,405	209,970	437,375	1,339,078
2014	233,533	212,700	446,233	1,356,486
2015	239,839	215,465	455,304	1,374,120
2016	246,021	219,559	465,580	1,400,228
2017	252,064	223,730	475,794	1,426,833
2018	258,281	227,981	486,262	1,453,943
2019	264,682	232,313	496,994	1,481,567
2020	271,256	236,727	507,982	1,509,717

## 13 TRENDSETTERS

The following case studies demonstrate recent initiatives in the Public and Private Sector in Waste Management throughout Ireland. These case studies have relevance to all Waste Management Regions.

### 13.1 WASTE PREVENTION & MINIMISATION FOR BUSINESS

In Dun Laoghaire-Rathdown County Council (DLRCC) a full time Green Business Officer has been appointed, whose sole function is to raise awareness and provide support to businesses in the area and who has been carrying out this function by usefully applying a variety of tools and instruments. A number of focused and worthwhile events have been facilitated from 2002 – 2004. An event specific to hospitals was held in November 2002 where information was presented and staff from hospitals could discuss common issues of concern and potential solutions. Such events provide practical information from external experts as well as motivational good practice case studies for local businesses and SMEs.

The DLRCC website ([www.dlrcoco.ie](http://www.dlrcoco.ie)) also provides a wide range of useful and timely information with regard to the most pressing environmental issues for SMEs in the Region. It also provides useful links to external sources of advice and support from, for example, EPA, ENFO, Enterprise Ireland, Envirowise etc.

Part of the remit of the Green Business Officer is to work in co-operation with businesses, business associations, chambers of commerce, elected representatives and recycling companies in the development of a Green Business Network.

This group aims to bring businesses and other stakeholders together to share experiences and allow networking to find environmental solutions for the benefit of individual companies, sectors and the Region a whole. This is an excellent example of a worthwhile co-operative approach to stimulating beneficial environmental change and is based on best practice principles. The Green Business Officer also visits individual companies, outlining their requirements in legislation, giving advice, encouragement and support. Companies can be assisted, free of charge, with a waste review, setting up a management system, talking to staff, providing advice on recyclers, composting, waste handling equipment, etc. According to the *Green Business Programme Report 2003*, 28 companies received a full waste consultation in 2003 and 136 business were visited.

### 13.2 KERRY COUNTY COUNCIL - ECOSENSE ANSWER PROJECT

The ANSWER (A New Solid Waste Environmental Response) Project was a three-year demonstration project funded under the 1999 EU Life Programme. The aim was to develop a new waste management programme for South Kerry. The project required Kerry County Council to work in cooperation with individuals, local communities, commercial sector and non-government organisations to achieve a number of aims:

- To reduce municipal solid waste arisings by 25% by waste avoidance and minimisation measures,
- To identify sustainable outlets to divert 60% of the remaining municipal solid waste from landfill by waste recycling and recovery,
- To identify appropriate supporting financial instruments and
- To assess employment potential of local waste recovery/treatment facilities.

The project programme involved formation of a working group to oversee the project, a public awareness campaign to run the duration of the project, information and advice centres, a central composting scheme to be established in Killarney, on board weighing and identification system on all collection vehicles and identification and development of suitable markets for the recovered/recycled waste.

### **13.3 INTEGRATED HOUSEHOLD WASTE RECYCLING**

Galway City Council and Waterford County Council have taken a lead nationally in the recycling of household waste.

Galway City Council has approximately 18,000 household customers, and since 2001 has implemented a 3-bin collection scheme helping the city reach just over 51% household waste recovery.

Waterford County Council is the first Local Authority to offer a 3-bin system to its entire catchment of household customers, including rural areas. The dry-recyclables collection has been underway since 2003, and the organic waste bin was introduced in 2004. Composting is carried out at a facility established by Waterford City Council (which also have a 3-bin household waste service) operated by a private company. Civic Amenity Facilities have also been set up at Tramore, Dungarvan and Lismore for the deposition of recyclable bulky wastes.

These successful schemes have the following common characteristics:

- Schemes were rolled out with the support of a team of awareness officers – in Galway 10 trained awareness staff called door to door to explain the new system before the phased rollout of bins. Support is ongoing and information campaigns relate the performance back to the public,
- Collections are alternated - dry recyclables and organics are collected one week with the mixed residual bin collected every alternate week to reduce overall collection costs,
- The Local Authorities have benefited from partnership with private waste industry (sorting and baling dry recyclables for both, and composting in the case of Waterford) and
- Bin inspections are undertaken regularly to ensure the householder is using the right bin and contamination is kept to a minimum. Seriously contaminated bins are not collected.

### **13.4 USE-RELATED CHARGING**

The changeover to use-related charging in 2005 has created new challenges for the Local Authorities and waste management companies. A number of collectors – such as Westmeath County Council, Cork County Council, Dun Laoghaire Rathdown County Council, Mulleady (Longford) and Mr. Bin Man (Limerick) have already demonstrated the effectiveness of pay by weight/use systems.

McElvaney Waste in County Monaghan equipped its vehicles and bins with new electronic systems and commenced a 'pay-by-weight' system for its 6,000 household customers from January 1<sup>st</sup> 2003. Two wheelie bins are employed – the residual bin is collected up to 40 times per annum (depending on how often it is filled by the householder). A flat rate of €79 is charged every six months, with an additional charge of €11.50 per 100Kg of waste presented. The dry-recyclables bin is collected monthly.

Since the introduction of the service, the weight of waste presented for disposal has dropped by 40% to 0.7 tonnes/household. About half of the weight has transferred to the recycling bin, with use of bring banks (for glass, textiles, cans), home composting, and waste prevention assumed to be taking the balance. Furthermore the scheme has proven popular with householders after a few teething problems were addressed.

### **13.5 GREEN WASTE COMPOSTING**

A number of Local Authorities have been successfully composting green waste for several years. The system offers a relatively low-cost option that diverts substantial amounts of waste away from landfill. With a growing population and increased attention to landscaping and gardening, the quantities of garden waste will continue to increase in all counties.

Successful green waste composting schemes are operated by Cork City Council, Kerry County Council, South Dublin County Council and Limerick County Council, as well as a growing number of private facilities. The facilities typically comprise a concrete composting slab with leachate collection, and machinery such as windrow turner, shredder and loading shovel. In Ireland, green waste contains low levels of contaminants and as a result the market potential for the finished compost, based on its quality, should be good.

### **13.6 CONSTRUCTION AND DEMOLITION (C&D) WASTE MANAGEMENT FACILITY**

A number of private C&D waste recycling facilities have been put in place that demonstrate the huge potential for recycling of this major waste stream. In the Greater Dublin Region, a range of facilities are in operation achieving high levels of materials recovery. Companies such as Roadstone, A1 Waste and Marrakesh are all producing crushed concrete for use as engineering aggregate while recovering other materials such as metals and timber for recycling.

### **13.7 WASTE-TO-ENERGY (WTE) AND DISTRICT HEATING**

In many Scandinavian countries, district heating systems powered by WTE plants are used to heat houses and offices. Excess heat from the boiler is circulated in a mains pipe as a 'fourth utility' (following water, wastewater and gas). Customers can switch on and off the heat supply when required, and are metered according to use.

District heating systems are highly energy-efficient and as a result offer environmental benefits by reducing greenhouse gas emissions. Because of the overall efficiency, there is lower use of fossil fuels and less local air emissions compared to domestic gas or solid fuel heating systems. Systems can also be developed to supply energy to industries, swimming pools or hospitals. A district heating project is proposed by Dublin City Council to use the excess heat from the proposed Poolbeg Waste-to-Energy Plant.

### **13.8 MARKET DEVELOPMENT**

Developing markets for materials recovered from waste is a key requirement for successful recycling. In a bid to demonstrate what can be achieved with 'waste' materials, the Midlands Local Authorities have decided to put some novel ideas in place in new Civic Amenity Facilities being developed under the Midlands Regional Waste Management Plan. With the help of grant aid from the EPA Cleaner Greener Production Programme, a number of innovative design initiatives are planned for the new Civic Amenity Facilities in Birr, Mullingar and Portlaoise.

- Recycled glass for paving surfaces,
- Asphalt plantings in bituminous pavement,
- Recycled crushed concrete in foundations and
- Compost from household food and garden waste in landscaping.

In addition, a range of other eco-friendly features including renewable energy, rainwater harvesting and sustainable building concepts are being used in the design.

## 14 WASTE POLICY – MUNICIPAL WASTE, CLOSED LANDFILLS AND HAZARDOUS WASTE DISPOSAL SITES

### 14.1 MAIN CONSIDERATIONS GOING FORWARD

Progress towards meeting the adopted Regional Targets and the long-term treatment strategies were assessed during the Review process. The EU Landfill Directive (1999) has imposed strict mandatory limits on the amount of biodegradable municipal waste (BMW) that can be landfilled in the Region going forward and therefore will have a significant effect on residual waste treatment in the Region.

Similarly the Draft National Biodegradable Waste Strategy (2004) has set requirements for disposal of biodegradable municipal waste at landfills. It is anticipated that this Draft Strategy will be finalised in 2006. The effect of the Directive and the Draft Strategy will be to continue to divert waste away from landfill and up the waste hierarchy ladder towards prevention and reuse/recycling.

Table 14.1 shows the statutory requirements of the EU Landfill Directive (1999) and the Draft National Biodegradable Waste Strategy respectively for the specified target years of 2009 and 2016.

**Table 14.1: Biodegradable Municipal Waste – Mandatory Requirements**

<b>EU Landfill Directive 1999</b>
By <b>2009</b> only 50% of the total BMW generated in the Region in 1995 can be landfilled.
By <b>2009</b> approximately <b>69,000</b> tonnes of BMW can be landfilled in the Connacht Region.
By <b>2016</b> only 35% of the total BMW generated in the Region in can be landfilled.
By <b>2016</b> approximately <b>48,000</b> tonnes of BMW can be landfilled in the Connacht Region.
<b>Draft National Biodegradable Waste Strategy 2004</b>
By <b>2009</b> only 24% of the total annual BMW produced in the Region can be landfilled.
By <b>2009</b> approximately <b>63,000</b> tonnes of BMW can be landfilled in the Connacht Region.
By <b>2016</b> only 13% of the total annual BMW produced in the Region can be landfilled.
By <b>2016</b> approximately <b>40,000</b> tonnes of BMW can be landfilled in the Connacht Region.

*Note: These requirements may be delayed if Ireland receives a derogation from the EU but to date this has not been applied for.*

In order to reduce the level of biodegradable content of the residual waste stream being disposed to landfill, it will be necessary to progress the provision of integrated infrastructure in the Region including:

- Sustained promotion of waste prevention and minimisation,
- Expansion of the dry recyclables collection,
- Introducing segregated collection of organic waste in the Region,
- Developing Biological and Thermal Treatment capacity options for the Region, and
- Developing alternative pre-treatments in the Region such as Mechanical Biological Treatment (MBT).