



CROSS-BORDER WASTE MANAGEMENT STUDY

FINAL REPORT

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EXECUTIVE SUMMARY

INTRODUCTION

The purpose and aim of the Cross Border Waste Management Study is to assess current waste management practices being undertaken by Local Authorities and the waste industry within the Cross-Border Region and identify opportunities for Local Authorities and the private sector to build upon the experiences and waste management practices being implemented both in Northern Ireland and the Republic of Ireland. This summary provides an overview of the key issues that have been drawn out by the study and highlights the opportunities and challenges to be faced by Government, Local Authorities and the Waste Industries if these issues are to be addressed and cross border opportunities are to be fully realised.

PART I - CONTEXTUAL SETTING

The Cross Border Context

The Cross Border Region is 37,724 km² in size and accounts for approximately 45% of the total area of the island of Ireland, of which the Northern Ireland planning areas of SWaMP and North-West represents approximately 28% of the Cross Border area and the Republic of Ireland planning areas of Connaught, Donegal and North East accounting for approximately 72% of the land area within the Cross Border Region. The 2001 census figures show that the total population of the Cross Border Region accounts for approximately 31% of the total population of Ireland. The Waste Management Planning Regions covering the Cross Border Region are illustrated below in Figure S.1.

Figure S.1 Waste Planning Regions within the Cross Border Region



The waste management plans covering the region are being reviewed. This Study therefore is timely, as these reviews creates an opportunity to address issues to improve co-operation, and build an integrated network of facilities and services within the cross border region. A priority during the course of the Study therefore has been to ensure that it does not conflict with, or usurp the Waste Planning processes, which are statutory responsibilities.

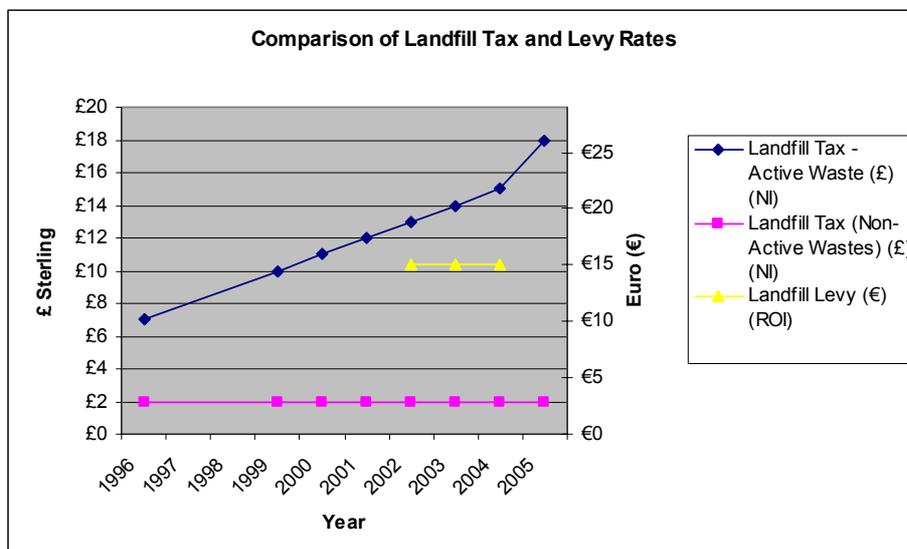
The Policy and Legislative Framework

European Union (EU) Policy provides the overarching framework for waste management both in Northern Ireland and the Republic of Ireland, with EU Directives and Regulations enacted through enabling legislation. Key measures impacting on waste management within the region at present include:

- **Landfill Directive Targets:** with different approaches to meeting the diversion targets for biodegradable municipal waste being adopted in Northern Ireland and the Republic of Ireland. In Northern Ireland, allowances are set for individual councils, with penalties of £200 per tonne if they are not achieved.
- **Hazardous Wastes:** The implementation of the Landfill Directive, with the requirement for classifying landfill sites as inert, non-hazardous or hazardous, has seen the loss of hazardous waste landfill disposal capacity within the region.
- **The Animal By-Products Regulation:** which sets standards for the treatment of not only wastes derived from animal by-products, but also catering wastes, which includes wastes from canteens, restaurants and household kitchens.

Differences in the Landfill Levy (RoI) and the Landfill Tax (NI), which is set to rise to £35 per tonne (€50 per tonne) are illustrated in Figure S.2. These differences have the potential to create cost differentials in the market in the cross border region.

Figure S.2 Comparison of the Landfill Levy and the Landfill Tax



PART II - WASTE STREAMS

A range of waste streams have been considered in the Study. The relevant policy measures and targets have been reviewed, together with: the arisings; the proportions recycled, recovered and disposed of; and the proposed facilities set out in the Waste Management Plans. Key points include:

- **Municipal Waste.** A total of approximately 1 million tonnes per annum is generated within the region, with recycling and composting rates in the waste planning groups ranging from 10 to 18%. Examples of higher performing councils, including Galway City and Banbridge have also been highlighted. One key issue identified is the extent of the household waste collection service provided in the Republic of Ireland, as a significant proportion of households within the Connaught, Donegal and North East waste planning regions either do not have access to, or avail of a household waste collection service.
- **Commercial and Industrial Waste:** It is estimated that nearly 0.6 million tonnes per annum of commercial and industrial wastes are generated within the region. These wastes are managed almost exclusively by the private sector waste industry. There are no data currently available within the region quantifying the proportion of the C&I waste stream that is recycled or recovered. The waste management plans provided for a number of Materials Recovery Facilities across the region to manage these wastes, and it is clear from the measures and initiatives in place, that the proportion of wastes recycled and recovered is increasing.
- **Packaging Waste:** The targets to be achieved for recycling and recovery of packaging waste, which is present in all waste streams, are defined by the Packaging and Packaging Waste Directive. Ireland and the United Kingdom have however adopted fundamentally different approaches to compliance. It is estimated that about 350,000 tonnes of packaging waste per annum are generated in the region, and that recycling and recovery is delivered through the network of recycling and materials recovery facilities.
- **Hazardous Waste:** Hazardous/Special wastes are those wastes that are considered to pose a significant potential danger to the environment or to human health, and are generally produced by industrial processes, or the construction industry (asbestos) although hazardous waste also exist in the household waste stream. There are no hazardous waste landfill sites currently within the region, and there is a strong belief that an all island approach to the management of hazardous wastes would be beneficial.
- **Construction and Demolition Waste:** The Construction and Demolition industry is one of the largest waste producers in Ireland with C&D waste having increased by 35% from 1998 to 2001. The current estimate for C&D wastes within the region is nearly 1.5 million tonnes per annum, but this is likely to be a significant underestimate. These wastes are predominantly inert, comprising subsoil and rubble. The approach adopted for these materials therefore is predominantly one of local re-use or disposal, particularly for land reclamation/improvement purposes.

Overall the review of the waste streams illustrates that significant progress is being made across the region with an increasing proportion being recycled and recovered.

PART III - OPTIONS, ISSUES AND OPPORTUNITIES

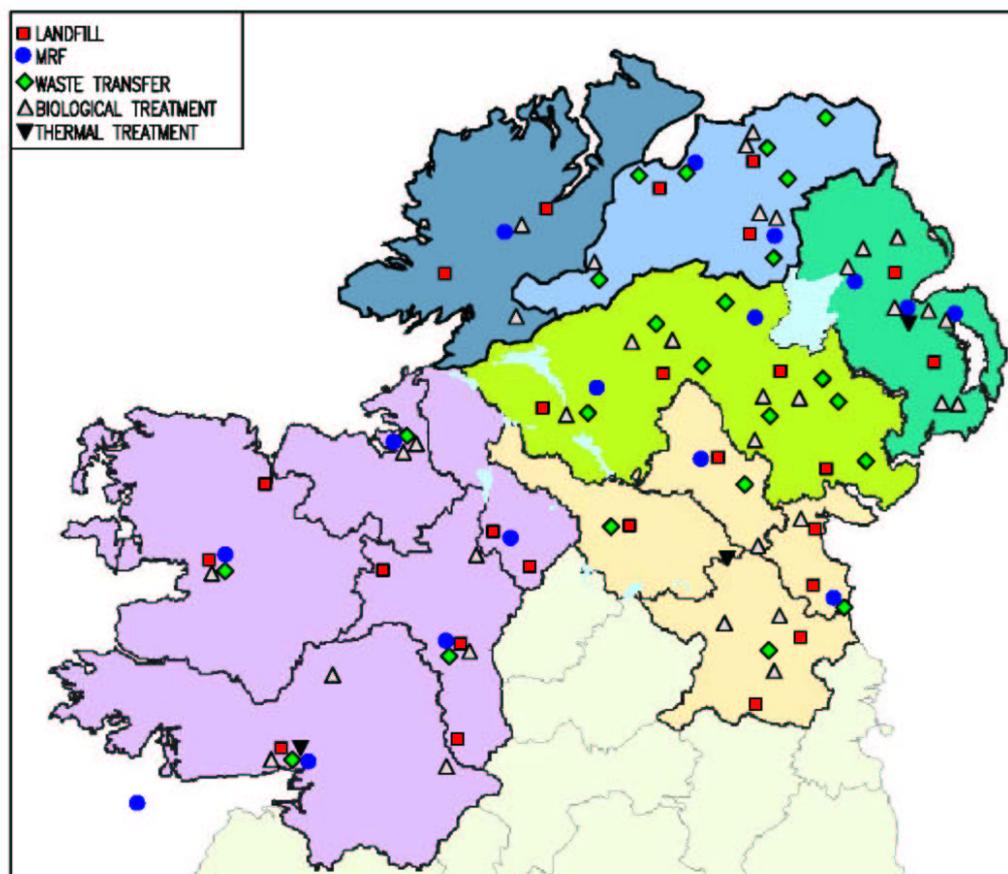
Options Assessment

A fundamental objective of waste planning is to provide an integrated network of facilities for the management of wastes. A review of practice established that the key characteristics of systems that recover a high proportion of waste materials, diverting them from landfill, include:

- Source separated collection systems
- Fiscal instruments eg landfill levy/taxes.
- Restrictions on quantities of wastes landfilled, particularly biodegradable municipal waste.
- Programme of information provision, and raising and reinforcing awareness.
- Mix of technologies including materials recovery, biological treatment, incineration with energy recovery, and finally landfill for the residue.

It is evident therefore that the essential building blocks, as provided for by the waste management plans, are in place in the cross border region, but the measures, and facilities are at differing stages of development. The network of facilities, as indicated in the plans, is illustrated in Figure S.3.

Figure S.3 Proposed Network of Municipal Waste Facilities



The capacity requirements presently identified for the region by 2010 for municipal waste include:

- Recycling/Composting: 425,000 tonnes per annum
- Thermal/Alternative Treatment: 540,000 tonnes per annum
- Landfill Disposal: 400,000 tonnes per annum

These capacity requirements however are likely to change in the light of the recent announcement by the Department of the Environment in Northern Ireland as to the Best Practicable Environmental Option (BPEO) for 2010, which has increased recycling and composting, and Mechanical Biological Treatment.

Key Issues

The Study focussed on identifying the real issues at the 'coal face' through a series of consultations and analyses with stakeholders, including the private sector, the waste industry and local authorities. Those identified included:

- ***Landfill Costs and Its Impacts:*** The relatively high landfill costs within the region were highlighted, particularly in the Republic of Ireland where costs are about twice that in Northern Ireland. These high costs, while they encourage recycling and recovery, also act as an incentive for perverse behaviour, with cross border illegal dumping being seen as a consequence.
- ***Cross Border Movement of Wastes:*** Aspects to this include the administrative and cost burdens, sham recovery, and the need to make provisions in the relevant waste management plans, where it is considered appropriate.
- ***Control of the Household Waste Stream:*** An issue in some areas of the Republic of Ireland where some houses either do not avail of, or do not have access to a collection service. This raises issues as to how these wastes are managed, the environmental and human health risks that they present. It also represents a lost resource.
- ***End Markets:*** For the products of the treatment processes. Landspreading is seen as of limited future potential. There is therefore an urgent need to develop markets for the products of biological waste treatment, for example, as peat substitutes.
- ***Enforcement:*** The enforcement of existing regulations with a view to preventing the illegal cross border movement and dumping of wastes being a priority.

The Way Ahead – Addressing Challenges and Exploiting Opportunities

Waste management is a topical issue within the cross border region, and there are many opportunities for potentially mutually beneficial co-operation. However it is equally clear that there are barriers, some real, some perceived, to allow the full potential to be realised within the region. These need to be addressed if the waste management systems within the region are to be optimised to the benefit of all parties. The Study therefore presents a range of issues/barriers and identifies the opportunities, and the rationale, for addressing them, as follows:

Issue: Illegal Dumping

The illegal dumping of waste circumvents the regulatory framework, undermines legitimate businesses, represents a lost resource and a loss of revenue through the Landfill Tax/Levy, and places an additional burden on the public purse in terms of clean up, and enforcement and prosecution.

Opportunity: To reduce the potential leakage of waste from within the regulated framework, through the introduction of the appropriate contractual conditions, penalty clauses and payment on proof of delivery/compliance, supported by suitable licence/permit conditions and penalties.

Lead: Regulatory Authorities

Support: Local Authorities, Waste Industry, Business Sector

Issue: Standards and Specifications

Difference in standards, for the treatment of waste materials, e.g animal by-products and catering waste, data reporting and specifications for the products e.g compost, and cost implications.

Opportunity: To develop and/or adopt, as far as is practicable, common treatment and data reporting standards and output specifications, for example the PAS100 Composting Standards.

Lead: Central Government

Support: Local Authorities

Issue: Sham Recovery

Sham recovery i.e the processing of wastes for materials recovery, in a lower cost disposal environment, where disposal of a significant proportion of the material is the result. This is both a loss of resource and, if it is a cross border shipment, the disposal of materials represents a lost revenue through landfill tax/levy to the jurisdiction of origin.

Opportunity: To minimise the loss of resource through the provision of clear guidance as to what constitutes sham recovery, and on recommended reporting requirements and contractual obligations.

Lead: Regulatory Authorities

Support: Waste Industry

Issue: Cross-Border Recycling and Re-Processing

At present the drive for cross-border co-operation on waste management is primarily high level, with drivers including government policy and the IBEC-CBI report on waste management. Reservations are coming through at the local level as to its relevance and appropriateness.

Opportunity: To create a Forum for local and central government, the waste industry, and the business sector, to interface, to identify and discuss issues that facilitate the development of competitive cost-effective waste management services within the Region, through the creation of a Recycling and Re-Processing Forum.

Lead: Central Government

Support: Local Authorities, Waste Industry, Business Sector

Issue: Sustainable Markets for Refuse Derived Fuel

Refuse derived fuel can be produced through a Mechanical Biological Treatment (MBT) process, either as a floc, or as a pellet. In either case, an outlet for burning the fuel is required. This could for example be either a cement kiln, or an incinerator with energy recovery, located within or outwith the region.

Opportunity: To explore the potential opportunities for the burning of RDF in an incinerator or as a substitute fuel, in cement kilns within the region, as part of the review of the Waste Management Plan, where appropriate.

Lead: Local Authorities

Issue: Sustainable Markets for Compost

Organic materials are generally collected and treated locally, close to their point of origin, and in accordance with the proximity principle. There are currently uses in the closing and restoration of the old landfill site, but this will decrease within a few years.

Opportunity: The creation of a 'closed loop' for the treatment of organic wastes and sustainable use of the compost. Local authorities to identify their potential use for compost as a peat substitute.

Lead: Local Authorities

Issue: Transfrontier Shipment of Wastes – UK Import Export Plan

The UK Import and Export Plan currently precludes the movement of wastes across the border for disposal. Given Northern Ireland's unique geographic position within the UK there are occasions when such an option would represent the best option. There is therefore an argument to make an exception in the Northern Ireland context.

Opportunity: Review the UK Import and Export Plan to allow an optimised network of facilities to be developed, for the benefit of all communities on the island, and the cross border movement of wastes for recovery and disposal (including thermal treatment) where appropriate. To be supported by a reciprocal tax arrangement, so that differences in the landfill tax/levy do not in themselves become market drivers.

Lead: Central Government

Issue: Transfrontier Shipment of Wastes – Role of Waste Plans

At present only the Donegal, SWaMP, and North West Waste Plans recognise the potential for cross border co-operation. Cross border movement of wastes should be recognised within the appropriate Waste Management Plans, at the point of origin, and destination. Movement of waste in a controlled and regulated environment between facilities located in different waste planning areas and cross border is essential if an effective market is to be developed, through economies of scale and competition between facilities.

Opportunity: To enhance the competitiveness of the economy by driving down costs for waste management through competition, by making provision for the movement of waste between regions and cross border in the Waste Management Plans, as appropriate.

Lead: Local Authorities

Issue: Transfrontier Shipment of Wastes – Costs

The costs of consignment notes for the cross border movement of wastes will add costs to businesses involved in the transfer and re-processing of materials, where materials are exported from the neighbouring jurisdiction. This is seen as a potentially significant financial barrier that will mitigate against the cross border movement of wastes and in particular could impact adversely on SME's and limit potential for growth in this sector.

Opportunity: To encourage economic development opportunities, by reviewing the costs associated with the cross border movement of wastes, where the wastes are moved for re-processing or treatment on the island of Ireland.

Lead: Central Government

Support: Regulatory Authorities

Issue: Transfrontier Shipment of Wastes - Consignment Notes

Different forms are used by different authorities recording Transportation Shipment. This inconsistent approach creates difficulties for businesses.

Opportunity: To develop a template to be adopted by all local authorities for ease of use, enabling businesses to follow a consistent approach.

Lead: Local Authorities

Support: Regulatory Authorities

Issue: Collection of Household Waste

A significant proportion of households within the cross border region in the Republic of Ireland either do not have or do not avail of a collection service. This is a major policy issue, as it not only represents a lost resource, but has potential public health and environmental protection implications.

Opportunity: To extend the coverage of the household waste collection service, thereby reducing the environmental and health risks associated with unregulated disposal activities, and increase the quantity of materials recovered.

Leads: Local Authorities

Support: Central Government

Issue: Control of the Waste Streams – Compliance with Landfill Directive Targets

The Landfill Directive targets for the diversion of Biodegradable Municipal Waste from landfill are a key drive throughout the region. Those councils that collect the wastes directly (all NI and some RoI councils) are well placed as they are in a position to control and direct the wastes to appropriate treatment facilities. Those councils that do not collect wastes are potentially vulnerable, and are reliant on the private sector acting appropriately to meet the targets.

Opportunity: To review the current systems and identify any necessary adjustments to develop a more robust, less vulnerable framework, based on enforceable requirements through appropriate regulations, including the use of bye-laws.

Lead: Central Government

Support: Local Authorities

Issue: Planning Permission

Negotiating the planning process is proving to be a time consuming and costly affair, for applicants, and creates a climate of uncertainty and potential lost locations.

Opportunity: To facilitate the planning process through the Waste Management Plans, by identifying the Best Practicable Environmental Option, and the need and siting criteria for proposed facilities.

Lead: Local Authorities

Issue: Data Reporting

The availability, accuracy and reliability of data varies widely, with NI councils having the best and most readily available data, based on quantity. There are gaps in the data in both the household, the commercial and the industrial waste streams.

Opportunity: To improve data reporting to facilitate waste planning and compliance with statutory targets, including the Landfill Directive Biodegradable Municipal Waste diversion targets, through the introduction of systematic and regular reporting of data by waste collectors, handlers, re-processors, and facility operators.

Leads: Regulatory Authorities

Support: Local Government

PART I
CONTEXT

1.0 INTRODUCTION

RPS-Kirk McClure Morton in association with RPS-MCOS has been appointed to undertake a study on waste management practices in the Cross-Border region on behalf of Monaghan County Council. The aim of this project is to assess current waste management practices being undertaken by Local Authorities and the waste industry within the Cross-Border Region and identify opportunities for Local Authorities and the private sector to build upon the experiences and waste management practices being implemented both in Northern Ireland and the Republic of Ireland. The report also aims to highlight the key barriers and constraints faced by Local Authorities and the waste industry in relation to the control of waste material, meeting targets, procuring services and developing infrastructure.

1.1 WASTE MANAGEMENT PLANNING

It has been widely recognised that effective waste planning impacts throughout Ireland with Local Authorities identifying the need to connect, improve and implement their Waste Management Plans. In order to realise economies of scale, and to develop consistent approaches within a sub-region, Local Authorities have, with a few exceptions, come together to form sub-regional waste planning groups. This has resulted in the development of ten waste management plans in the Republic of Ireland and three in Northern Ireland. These plans provide the forward planning/policy implementation framework for waste management, including the requirements for collecting, recovering, treating and disposing of controlled waste within each Local Authority Area. The Waste Management Plans, which have been prepared by the Local Authorities throughout Ireland, are now scheduled for review. This Review process will contribute to a very significant degree to developing sustainable solutions and maintaining a momentum for change.

1.2 THE REVIEW PROCESS

In the Republic of Ireland the review process commenced in August 2004 with the public advertisement of the waste plan review process and draft waste management plans are expected to be completed and available for consultation in early 2005. In Northern Ireland two out of the three sub regional waste management plans, namely SWaMP and the North West Group are currently under review and are expected to be completed early 2006. The third, namely Arc 21, is due for review in 2006.

These reviews will provide opportunities for Local Authorities to:

- Assess the impact of current policy measures, and to inform the future development of policy, as it affects waste management within the region;

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- Evaluate the progress made with implementation of the Waste Management Plans, and to identify any barriers or constraints that have emerged, including any shortfall in infrastructure, capacity or services;
 - To consider the implementation of innovative technologies for specific waste streams:
 - To manage the flow of waste for specific treatment and disposal methods on both a regional and inter regional basis:
 - Identify key drivers, at the macro- and micro-level, that affect attitudes, approaches and waste management practices;
 - Understanding the waste and resource management issues that affect the business sector within the region; and to identify measures that could improve competitiveness of businesses and/or create economic development opportunities;
 - Engage with the business and waste management industries within the region, to develop a cross-sectoral approach for mutual benefit, optimise resource recovery, and maximise economic development opportunities; and
 - These Reviews will have to include a Strategic Environmental Assessment if not commenced before 30 June 2005, and completed by 30 June 2006.

The Review supports the implementation of the Northern Ireland Waste Management Strategy (2000) and its Review (2005), the DEHLG's Changing Our Ways (1998), Preventing and Recycling Waste: Delivering Change (2002) Policy Statements, Waste Management Taking Stock and Moving Forward (2004) and the National Strategy on Biodegradable Waste Draft Strategy Report (2004). The vision of these strategies is to provide fully sustainable waste management solutions. This means using material resources more efficiently to reduce the quantities of waste produced, and where waste is generated, to manage it in a way that minimises the environmental impact, and contributes positively to economic and social development.

1.3 MARKETS DEVELOPMENT

In building a competitive, value-added and sustainable economy on the island of Ireland, the focus needs to shift from waste management to resource management so that;

- Resources are used efficiently;
- Environmental Impacts are minimised; and
- Associated economic development opportunities are exploited.

This shift towards sustainable waste management presents challenges for all sections of society including businesses, the waste management industry, and the wider community. The role of the private sector both as producers of waste, the user of secondary materials, and the provider of services, is crucial if statutory targets are to be met.

Fundamental to this shift is the development of sustainable markets for the re-processed/recycled materials. This represents a key focus and challenge. Indeed, IBEC-CBI (2004) have suggested that if resource efficiency is to be maximised, a cross-cutting approach will be required, shifting from the current management of wastes based on their origin e.g. household, commercial or industrial, to a materials based approach, with waste categorised and managed by material type.

1.4 CROSS BORDER WASTE MANAGEMENT STUDY

The Cross-Border study builds upon the review process being undertaken on the waste management plans within the Cross Border Region and provides a platform from which to assess the key drivers, barriers and constraints being faced by local authorities and the waste industry within the Cross Border region. The study also builds upon work carried out by ICBAN, the North-West Group, the East Region and information contained within the IBEC-CBI report published in 2004.

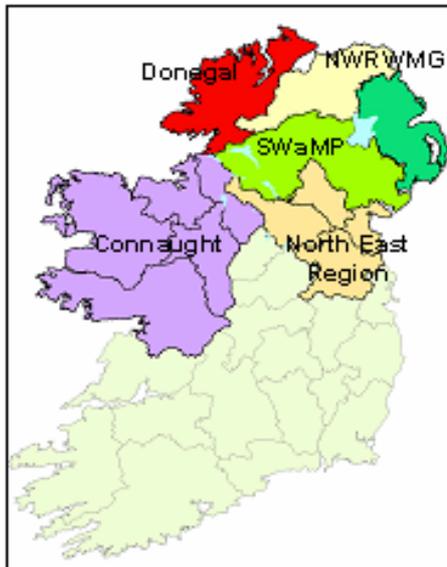
This Study provides an overview of the contextual setting of the project, and also considers the key legislative drivers that have been adopted within Europe, highlighting the main differences in how this legislation has been implemented within Northern Ireland and the Republic of Ireland. The report also examines the key differences in national targets set for each specific waste stream and highlights the impact that these differences will have on waste management practices and market development throughout the island of Ireland.

2.0 CONTEXTUAL SETTING

2.1 INTRODUCTION

The Waste Management Plans covering the Cross Border Region are illustrated below in Figure 2.1, and are detailed further in Section 2.2. For the purposes of this study all data reporting focuses on these waste planning regions.

Figure 2.1 Waste Planning Regions within the Cross Border Region



2.2 WASTE MANAGEMENT PLANNING GROUPS & PLANS

The waste management plans provide the forward planning/policy implementation framework for waste management, including the requirements for collecting, recovering, treating and disposing of controlled waste within each Local Authority. The following paragraphs provide a brief description of each of the existing Waste Management Plans within the Cross Border Region. The implementation of infrastructure and facilities is addressed further in Section 4.

2.2.1 *Connaught Region*

The Connaught Plan is based largely on the successful Connaught Waste Strategy Study, the Waste Management Plan sets out a blueprint for integrated waste management in the Region and covers the five-year period 1999-2004. The Connaught Waste Management Plan was adopted by the six local authorities in September 2001. The review of the Connaught Waste Management Plan has commenced early in 2005.

The Draft Plan is scheduled to be prepared by the end of April 2005, with the Final Plan completed for adoption by end of July 2005 following the statutory consultation period.

2.2.2 Donegal County Council

This plan was adopted in 2000 and provides a framework for waste management in Donegal over a period of 20 years, detailing the implementation actions required over the period 2000 - 2005 to allow for the development of waste management systems and ensure compliance with European and national targets for waste recycling, recovery and diversion.

In 1997 the North West Region Cross Border Group – Waste Management Task Team was formed, comprising Derry, Strabane, Limavady and Donegal Local Authority Areas. Since the formation of the grouping an additional four local authorities have joined, these are: Coleraine Borough Council, Magherafelt District Council, Ballymoney District Council and Moyle District Council as part of the North West Region Waste Management Group. Involvement within this group has consequently provided Donegal County Council with opportunities to utilise the economics, market presence and increased flexibility associated with having access to greater quantities of waste generated by the larger catchment area. The issue of Cross - Border solutions and co-operation has been considered within the Donegal Waste Management Plan.

The Review of the Donegal Waste Management Plan is underway and a timescale is currently being prepared for submission to the Department.

2.2.3 North East Region

The North East Region for the purposes of the Waste Management Plan consists of the administrative areas of the counties of Meath, Louth, Monaghan and Cavan. The North East Region Waste Management Plan was prepared in 1999 and covered the period 1999 - 2004. The purpose of this plan was to provide a framework for the management of non-hazardous wastes in the North East Region over a five year period in accordance with national and EU waste legislation and policy. At the time the Plans had to be adopted by the Elected Members (i.e. reserve function) and the members of Louth County Council did not adopt the Plan. The Plan was not in fact adopted until 2001 until after the amendment to the Waste Management Act when the power to adopt the Plans was transferred to the County and City Managers.

The review of the North East Waste Management Plan commenced at the end of 2004. The Draft Plan will be prepared by the end of February 2005.

2.2.4 North West Region Waste Management Group (NWRWVG)

The North West Region Waste Management Group consists of a voluntary grouping of seven local authorities in Northern Ireland: Ballymoney Borough Council, Coleraine Borough Council, Derry City Council, Limavady Borough Council, Magherafelt District Council, Moyle District Council, Strabane District Council and Donegal County Council. A Waste Management Plan for the Northern Ireland Councils was developed in 2002 to provide a regional approach to improving waste management practices. This approach has been adopted to create mutual benefits including for example, increased opportunity with respect to meeting obligations, through economies of scale, and sharing of resources and targets.

The Waste Management Plan identified a number of key actions and issues to be achieved during the lifespan of the plan, up until March 2006 within the longer-term context, up to and including 2020. The local authorities adopted the North West Waste Management Plan in January 2003. The North West Region Waste Management plan also seeks to identify areas of mutual interest between inter-region and cross border waste management groups and to establish potential opportunities for the inter-region and cross border movement of wastes for recycling.

An Interim Review of this Waste Management Plan was carried out during 2003 and a full Review of the Plan will be completed and adopted by the end of June 2006. These Interim and Annual Reviews will take place alongside Annual Assessments of the Plan to monitor its implementation and performance.

2.2.5 Southern Waste Management Partnership (SWaMP)

The SWaMP Region consists of the following eight local authorities in Northern Ireland: Armagh City & District Council, Banbridge District Council, Cookstown District Council, Craigavon Borough Council, Dungannon and South Tyrone Borough Council, Fermanagh District Council, Newry and Mourne District Council and Omagh District Council.

The SWaMP Plan was developed within the longer-term context, up to and including 2020 with the actions arising for the first 5 years, up to 2005, detailed for each Council area. The local authorities adopted the SWaMP Waste Management Plan in 2002. The SWaMP Plan also seeks to identify areas of mutual interest between inter-region and cross border waste management groups and to establish potential opportunities for the inter-region and cross border movement of wastes for recycling.

An Interim Review of this Waste Management Plan was carried out during 2003 and a full Review of the Plan will be completed and adopted by June 2006.

These Interim and Annual Reviews will take place alongside Annual Assessments of the Plan to monitor its implementation and performance.

2.2.6 Adoption of Waste Management Plans

As highlighted above, following difficulties in getting waste plans adopted by elected members, the waste planning function in the Republic of Ireland has become an executive function and no longer subject to Elected members' approval, although, statutory public consultation requirements remain the same. In addition to this, the decision on planning permissions for the development of waste management facilities has also become an executive function. This has allowed for the ongoing implementation of the waste plans. However it has not removed all barriers and opposition to development of waste infrastructure.

In Northern Ireland the adoption and ultimate responsibility for the implementation of the regional waste management plans remains with the individual councils and their elected members. Planning, on the other hand, is the responsibility of Planning Service, and Agency of the Department of the Environment.

2.3 CROSS BORDER REGION

The Cross Border Region is 37,724 km² in size and accounts for approximately 45% of the total area of the island of Ireland, of which the Northern Ireland planning areas of SWaMP and North-West represents approximately 28% of the Cross Border area and the Republic of Ireland planning areas of Connaught, Donegal and North East accounting for approximately 72% of the land area within the Cross Border Region.

Population figures for each of the areas within the Cross Border Region are shown in the Table 2.1 below. The 2001 census figures show that the total population of the Cross Border Region accounts for approximately 31% of the total population of Ireland.

Table 2.1 Population Figures for the Cross Border Region

Sub Region	Year				
	1999	2000	2001	2002	2003
SWaMP ¹	443,260	446,220	449,179	t.b.c	t.b.c
North-West ¹	309,013	311,790	314,658	t.b.c	t.b.c
Donegal ²	133,506	134,863	136,220	137,383	137,575
North-East ²	324,561	331,361	341,107	344,965	344,965
Connaught ²	448,424	453,715	459,006	464,296	464,296

Note 1 Population Figures are taken from the 1991 and 2001 Northern Ireland Census Results.

Note 2 The 1999, 2000, 2001 figures are extrapolated from Census 1996 figures. For the purpose of this study 2002 Census figures are used for 2003.

Donegal and Connaught have low population densities, approximately 28 persons/km², and are therefore sparsely populated rural areas which account for approximately 55% of the Cross Border Region.

2.4 CONSULTATION & MEDIA CAMPAIGNS

The Waste Management Plans within the Cross Border Region place emphasis on waste minimisation and meeting recovery targets through education and awareness campaigns. In addition to the specific measures being implemented by the Groups and the Councils, within their areas, there have been three broader campaigns in both Northern Ireland and the Republic of Ireland, designed to educate the public and to raise awareness of waste management issues. These are summarised below.

Wake up to Waste

In Northern Ireland the Environment and Heritage Service public awareness and information programme is called 'Wake up to Waste' and aims to raise the profile of waste management and engage the public and businesses in using resources more sustainably. The campaign builds upon the strategic vision of the Northern Ireland Waste Management Strategy to support implementation of minimisation, recycling and recovery schemes at the local level.

A variety of media have been used in the campaign including a high profile launch event, hard hitting radio and TV adverts, billboards and bus backs, a leaflet delivered to all homes and a series of adverts and editorials tailored to various commercial publications, regional and local press.

The campaign is based upon the theme of the 3 R's: Reduce, Re-use and Recycle: which represents the Waste Hierarchy, a central theme of EU Waste Policy.

Race Against Waste

Race Against Waste is the Department of the Environment, Heritage & Local Government's (DEHLG) in the Republic of Ireland, campaign to raise awareness of waste issues and change behaviour among people at home and at work in order to reduce the amount of waste being produced and increase recycling and composting.

The Race Against Waste campaign:

- Works closely with Environmental Awareness Officers in all of the local authorities, who work locally with householders, schools, businesses and community groups
- Provides advice and information directly to the public through a lo-call telephone information line and email, both operated by Environmental Scientists

- Encourages communities to minimise, recycle and compost their waste through the national Tidy Towns competition's Race Against Waste module
- Runs a programme of action for business, including nationwide seminars, in partnership with the Chambers of Commerce of Ireland
- Informs the public through an on-going public relations campaign in national and local press and media
- Raises awareness through an extensive advertising campaign on TV, radio, press and outdoors.

In 2005, new programmes of action for the public sector, youth and sport will be launched.

Cross Border Waste Awareness Campaign

A new Cross Border Waste Awareness Campaign was launched on 14 September 2004 by Environment Ministers from Northern Ireland and the Republic of Ireland. This €2.5 Million campaign funded by the EU, under the INTERREG IIIA programme, and is a joint initiative of the Environment and Heritage Service Northern Ireland and the Department for Environment, Heritage and Local Government in the Republic. The campaign carries the message "The Change Will Do You Good" and highlights that by simply separating out the things you throw away and allowing them to be recycled, you help to create new resources and raw materials which can be used to manufacture many every day products.

2.5 OTHER CROSS BORDER GROUPINGS AND REPORTS

There are a number of other Cross Border Groupings and Reports which have paved the way for the preparation of this report examining Cross Border waste management issues. These Groupings and Reports have not only examined waste management issues but have focused on Cross Border co-operation in general. For example, these initiatives have been developed to address the concerns of local businesses and small-to-medium sized enterprises (SMEs) in the Cross Border Region, as well as to increase Cross Border co-operation leading to markets and industry development. These initiatives have also encouraged a combined approach by local authorities to issues on both sides of the border.

IBEC-CBI Joint Business Council

In the period from 1991 – 1999 the IBEC-CBI Joint Business Council (JBC) has acted as a catalyst for expanding and maximising the level of trade, business development and economic co-operation between Northern Ireland and the Republic of Ireland. In 1999, Intertrade Ireland was set up with responsibility for Trade and Business Development, at this stage JBC redefined its mission as:

"Developing and sustaining business co-operation within the island of Ireland and addressing international competitiveness."

The Joint Business Council implemented a new strategy from 2002 – 2006 with the objective of:

- Improving the north-south business environment in which SMEs operate in the areas of telecommunications, energy, supply chain logistics and transportation and waste management;
- Developing north-south business innovation and entrepreneurship and promoting business/education linkages across a number of sectors including biotechnology, medical devices, and ICT;
- Promoting cross-border employment and removing barriers to cross-border mobility of labour.

The Joint Business Council (JBC) included a study carried out by IBEC-CBI entitled *Waste Management in the Interreg Cross Border Region from an SME Perspective*. The main objective of this integrated study was to facilitate the development of north-south trade by identifying issues critical to SMEs and evaluating policies and appropriate actions to make SMEs more competitive to trade on and off island. The study further sought to identify any waste management issues that might be impeding north-south trade, to recommend appropriate actions and to promote best practice and increase business development.

ICBAN

ICBAN (Irish Central Border Area Network) was established in 1995 and is made up of ten local authorities, five in Northern Ireland and five in the Republic of Ireland. The group spans the central Cross Border Region with Tyrone, Fermanagh, Sligo, Armagh, Donegal, Cavan Monaghan and Leitrim at its centre. Since its formation in 1995, ICBAN has received core funding from the European Regional Development Fund (ERDF) under the INTERREG initiative.

INTERREG

The European Union's INTERREG IIIA Programme encourages cross-border co-operation between adjacent regions and aims to develop cross-border social and economic centres through common development strategies.

The INTERREG region is made up of the 26 district councils within Northern Ireland and the following 6 bordering Counties within the Republic of Ireland:

- Donegal County
- Sligo County
- Leitrim County
- Cavan County
- Monaghan County
- Louth County

Waste management in this cross border area has been and remains the focus of attention, for a number of reasons. One recent major contribution has been the waste awareness and information campaign, described above, which is being carried out under the INTERREG IIIA Programme at a cost of €2.5M.

East Border Region

The East Border Region Committee is a local authority led cross border grouping which comprises six local authorities: Newry & Mourne, Down, Banbridge District Councils and Craigavon Borough Council in Northern Ireland and Louth and Monaghan County Councils in the Republic of Ireland. Since its formation in the 1970s the Committee has endeavoured to promote the development of the region as a vibrant economic unit. Following the completion in 1998 of an Integrated Economic Development Strategy, five priority themes for development in the region were identified:

- Tourism
- Indigenous Business Growth
- Infrastructure and Environment
- Community Economic Development
- Human Resource Development

To facilitate a co-ordinated partnership approach the Committee has been extended to include key players from the statutory, public, private and community sectors in the region as well as Councillors and Officials.

2.6 ILLEGAL DUMPING

Illegal dumping of wastes in the cross border region has become a highly publicised issue in recent times. Primarily this has related to the illegal dumping of wastes in Northern Ireland, which originated in the Republic of Ireland.

In Northern Ireland, under current legislation, for landowners to be able to dispose of waste material on their land they must be in possession of an appropriate waste management licence, or exemption certificate, along with appropriate planning permissions. Dumping of wastes without this documentation is therefore an offence, punishable by fines and/or imprisonment, in addition to the costs of cleaning up the land itself. This practice can also be hazardous to the public and the environment.

Recent BBC and RTE Primetime investigations have indicated that contractors in the Republic of Ireland can be paid up to £2,500 to dump a 20 tonne load of waste, and in Northern Ireland landowners are being allegedly offered money to allow this waste to be dumped on their land.

This practice at present, therefore, clearly offers potentially significant rewards to those criminals involved in the illegal cross-border trafficking of wastes. It reportedly involves organised crime, and is the subject of measures by the authorities, including the police, on both sides of the border to prevent it.

This issue, of the need to control the movement of waste material, is considered further in later sections of this report.

3.0 POLICY FRAMEWORK

3.1 INTRODUCTION

European Union (EU) Policy provides the overarching framework for waste management practices both in Northern Ireland and the Republic of Ireland.

There has been a raft of environmental and waste management policy and legislation emanating from the EU, with the aim of promoting more sustainable waste management practices. The two key Strategies which create the overarching policy framework for waste management are:

- **The EU Sustainable Development Strategy**, which requires sustainable development to be at the core of member state policies.
- **The EU Waste Management Strategy**, which enshrines key principles, including the waste hierarchy, the proximity principle and self sufficiency.

EU environmental policy however continues to evolve, including three Thematic Strategies that relate to waste management currently in the process of development:

- ***Prevention and Recycling of Waste***, which is likely to prioritise waste prevention, and recognise the need for a mix of instruments and waste treatment technologies to deliver sustainable solutions.
- ***Sustainable Use of Natural Resources***, which is likely to focus on measures to reduce the consumption of primary resources.
- ***Protection of Soils***: a strategy to protect soils from pollution, developed in response to concerns about the degradation of soils in the EU. Within this a number of specific measures are being developed such as the 2004 Directive on Compost and Biowaste, aimed at controlling potential contamination and encouraging the use of certified compost.

Measures to deliver the strategic policy objectives are primarily implemented in the form of EC Directives, which can be categorised as follows:

- Framework Directives
- Waste stream Specific Directives and
- Technology Specific Directives

Member states must ensure that the requirements of these directives are implemented through National Legislation and Regulations in a timely manner in order to avoid infraction proceedings. However the way that this national legislation is developed and implemented may vary between member states.

In addition, a policy may be implemented through a European Regulation which does not require national legislation for it to become effective in Member States.

This section provides an overview of the main legislative drivers that are likely to impact upon strategic planning within the cross border region and highlights the key differences in how they have been implemented within each jurisdiction.

3.2 KEY EU WASTE DIRECTIVES

3.2.1 The EU Waste Framework Directive (75/442/EEC) as amended 91/692/EEC

The overall driver for waste management in the European Union is the EU Waste Framework Directive, which establishes the following key principles:

- Prevention Principle
- Precautionary Principle
- Polluter Pays Principle
- Proximity Principle, and
- The Waste Hierarchy

The Waste Framework Directive also sets out a number of requirements, including: the preparation of waste management plans; licensing of waste management facilities; and permitting/registration of carriers. The measures have been introduced through appropriate enabling legislation in both Northern Ireland and the Republic of Ireland. However, there is one difference between the two jurisdictions that merits highlighting, namely the introduction of a 'duty of care', which applies throughout the United Kingdom.

In Northern Ireland, this has been introduced through the introduction of the Controlled Waste (Duty of Care) Regulations 2002. These Regulations:

- Place the onus on the producer to ensure that any waste they produce is handled safely.
- Applies to anyone who produces, imports, carries, keeps, treats or disposes of controlled waste from business or industry.
- Has no time limit, and extends until the waste has either been finally and properly disposed of or fully recovered.
- Ensures that the movement of waste is recorded and monitored from the point of generation to the point of disposal.

This Duty of Care however does not extend to householders.

3.2.2 Transfrontier Shipment of Wastes

The Transfrontier Shipment of Wastes, EC Regulation 259/93 controls international waste movements. The Regulations are responsible for developing a supervision and control system for shipments of waste, normally by means of a tracking system. The system must record, supervise and control all waste shipments, whether hazardous or non-hazardous. Wastes are categorised into green, amber or red lists, based on their potential to pose a risk to the environment.

Key Differences

Northern Ireland	Republic of Ireland
<p>The Regulations are implemented through the United Kingdom Management Plan for the Export and Imports of Wastes</p> <p>The draft Transfrontier Shipment (NI) Regulations propose a fee of approximately £450 for the assessment of notification of ship waste for either a disposal or recovery operation, and £20 per load thereafter.</p>	<p>Local authorities have responsibility for export of waste with the EPA having the responsibility for import of waste under the Waste Management (Transfrontier Shipments of Waste) Regulations, 1998.</p> <p>There is no fixed charge for in fees involved in the shipment of waste with local authorities charging different rates for initial registration and monitoring of the waste load.</p>

The introduction of charges for moving wastes across the border has important implications within the cross-border region. It has the potential to create a barrier to all island recycling and reprocessing, in terms of development of economically competitive and sustainable markets. There is a widespread recognition of the potential mutual benefits to an all island approach to aspects of waste infrastructure, recycling and recovery, which is well documented within the Waste Plans and other reports. However, businesses on both sides of the border that handle, process or recycle/recover waste materials, may find themselves at a competitive disadvantage, if that benefits through factors such as economies of scales, proximity or access to markets cannot be realised without attracting additional costs that businesses in comparative areas do not bear.

'Sham Recovery' or environmental dumping, is also recognised as an issue not only within the Border Region, but also across the EU, in the context of the movement of wastes, particularly across a border between jurisdictions. For example, it is identified as one of the priorities to be addressed in the Thematic Strategy on the Prevention and Recycling of Wastes.

It occurs when wastes are moved under the pretext of recycling and recovery to another area where disposal costs are lower, so that the majority of wastes are disposed of, rather than recovered. Definitive guidance and standards as to the levels of material recovery acceptable are therefore required to minimise sham recovery, with consideration given to returning waste residues to the producer for disposal, in situations where these standards are not achieved.

3.2.3 Landfill Directive (1999/31/EC)

This Directive was adopted in 1999 and sets out the technical standards that all landfill disposal sites must meet in the future in terms of improved and consistent operation and ensuring environmental protection. These standards include:

- Categorisation of landfills as inert, non-hazardous and hazardous
- Banning certain types of waste from landfills
- Standard waste acceptance procedures, which include the treatment of waste before landfilling
- Operating permits, including the provisions for closure and aftercare
- Technical standards for the lining and capping of landfills.

The Landfill Directive is a key driver of change in municipal waste management throughout Europe. It is intended to prevent or reduce the adverse effects of the landfilling of waste on the environment, in particular on surface water, groundwater, soil, air and human health. The Directive has also introduced a staged reduction on the amount of biodegradable municipal waste that is sent to landfill up to 2016. The UK has taken the option of a 4-year derogation on this target due to its high level of reliance on landfill, and Northern Ireland has opted to avail of this option. To date, the Republic of Ireland has not taken the derogation. The landfill Diversion Targets and the differences between Northern Ireland and Republic of Ireland in terms of implementation is illustrated below in Table 3.1.

Table 3.1 Landfill Directive Targets

Target To reduce the total amount of biodegradable municipal waste going to landfill to:	Date of implementation for:	
	Northern Ireland**	Republic of Ireland*
1995 Baseline BMW Generation	631,900 tonnes	1,160,690 tonnes
75% of 1995 levels by:	2010	2006
Tonnage Allowance	470,000 tonnes	843,303 tonnes
50% of 1995 levels by:	2013	2010
Tonnage Allowance	320,000 tonnes	562,202 tonnes
35% of 1995 levels by:	2020	2016
Tonnage Allowance	220,000 tonnes	393,541 tonnes

* Source: Draft Biowaste Strategy.

** Source: The Landfill (Scheme Year and Maximum Amount) Regulations, 2004

Key Differences

Northern Ireland	Republic of Ireland
<p>Northern Ireland has formal obligations to meet the Landfill Directive Targets under the Northern Ireland Allowances Scheme. This scheme has been developed under the requirements of the Waste and Emissions Trading (WET) Act, 2003, which sets interim annual targets for the diversion of biodegradable municipal waste away from landfill, with the first target year starting in April 2005.</p> <p>Under the scheme, individual district councils are given allocations of the amount of BMW they are allowed to landfill. They have a statutory obligation to meet these targets, with failure potentially resulting in fines of £200 per tonne.</p>	<p>The following mechanisms are proposed to encourage the diversion of BMW from landfills:</p> <ul style="list-style-type: none"> ▪ Implementation of Waste Management Plans ▪ Promotion of Separate Collection ▪ Restricting Disposal Outlets ▪ Restricting Illegal Activities ▪ Developing markets ▪ Producer Responsibility Mechanisms ▪ Introduction of pay by weight/volume. <p>An indirect mechanism has been the high charges for landfill but it is anticipated that as landfill charges decrease, this will no longer be a driving mechanism for change.</p>

It can be seen from the above table that the two approaches for implementing the Landfill Directive and meeting the Targets are fundamentally different in Northern Ireland and in Republic of Ireland.

Northern Ireland has a formal mechanism and a regulatory approach to encourage measures to be put in place to meet the targets with the potential for significant fines to be applied to Local Authorities if these targets are not met. This approach places a defined responsibility on Local Authorities. The Republic of Ireland has adopted a much wider approach, based essentially on compliance with policy and statutory targets through implementation of measures set out in the Waste Management Plans, but without defined sanctions in the event that targets are not met. The likely result of this is that the key stakeholders in Northern Ireland and the Republic of Ireland will adopt a different view of the risks associated with non-compliance with targets.

3.2.4 The Packaging and Packaging Waste Directive (94/62/EC)

This Directive aims to harmonise national packaging legislation with the twin objectives of preventing or reducing the environmental impacts associated with packaging and packaging wastes. The Directive is a Producer Responsibility initiative and sets out specific targets for the recycling and recovery of packaging waste, which were due to be reached by 2001, both with respect to overall recovery rates, and material specific recycling rates.

The targets have subsequently been amended, with the adoption of post 2005 targets for Member States. Under these amendments, Ireland is required to achieve by 2011:

- an overall packaging waste recovery rate of 60%, and
- an overall recycling rate of 55%.

In addition, material specific targets are as follows:

- Glass: 60%
- Paper/board 60%
- Metal: 55%
- Plastics: 22.5%
- Wood: 15%

The Directive provides member states with a degree of latitude in terms of the measures that can be adopted to meet the obligations and provisions of the Directive. The key differences in this between Northern Ireland and Republic of Ireland are highlighted in the table below.

Key Differences

Northern Ireland	Republic of Ireland
<p>Obligations are transposed into law through the Producer Responsibility Obligations (Packaging Waste) Regulations (Northern Ireland) 1999. Regulations currently apply to obligated businesses whose annual turnover is greater than £2m and who handle 50 tonnes of packaging or packaging materials annually.</p> <p>This is a market based approach where the cost of recycling each material fluctuates in response to market conditions, and where the recycling and recovery obligations are shared between all parts of the packaging chain. The scheme was designed to operate seamlessly across the UK, therefore preventing baseline information on packaging wastes in Northern Ireland being available.</p> <p>In practice however, significant quantities of packaging waste are captured by local authority recycling schemes. As such therefore the United Kingdom has in practice adopted a twin track management approach to the recycling and recovery of packaging waste, based on:</p> <ul style="list-style-type: none"> ▪ Obligations placed on business ▪ Recycling by District Councils 	<p>Transposed into Irish Law through the Waste Management (Packaging) Regulations, 1997. Obligations are placed on all persons and businesses who supply packaged products, packaging materials or packaging. Additional obligations are placed on major producers of packaging waste i.e those who have an annual turnover in excess of €1m and who handle more than 25 tonnes of packaging waste.</p> <p>Packaging waste from households is managed through the recycling infrastructure. Commercial and Industrial packaging waste is managed by enforcement of Packaging Regulations by Local Authorities and provision of information to producers.</p> <p>An exemption from the obligations of Packaging Regulations is available to companies who are participating in a collective packaging-waste-recovery scheme operated by REPAK Ltd.</p> <p>In addition, landfill operators may at their discretion, place a ban on the landfilling of certain commercial packaging waste.</p>

3.2.5 Hazardous Waste Directive 91/689/EEC

Council Directive 91/689/EEC on hazardous waste implemented the Waste Directive 75/442/EEC in relation to hazardous waste. The Directive seeks to provide a clear and concise definition of hazardous waste while also setting out the requirements for the management and the permitting of hazardous waste recovery and disposal facilities.

Significantly though, the Directive does not include provision for the hazardous fraction of domestic waste, unless segregated fractions are separately collected.

The key differences in this between Northern Ireland and Republic of Ireland are highlighted in the table below.

Key Differences

Northern Ireland	Republic of Ireland
<p>Implemented through the Special Waste Regulations (Northern Ireland) 1998. They apply to persons who produce, carry and receive special waste whether for the purpose of keeping treating or disposal.</p> <p>A common chapter has been included within the three Waste Management Plans to deal with hazardous wastes. In addition to this a Hazardous Waste Forum, encompassing Central and Local Government, waste producers, the waste management industry and NGOs, was set up in Northern Ireland in June 2003 to advise on a way forward for safe hazardous waste reduction, recovery and management.</p> <p>The Forum will monitor implementation of recommendations through an Implementation Plan, published in Autumn 2004</p>	<p>Implemented through the Waste Management Act, 1996 and Protection of the Environment Act, 2003.</p> <p>Hazardous waste management is the responsibility of the EPA. The National Hazardous Waste Management Plan was published in July 2001. The Plan considers the prevention and minimisation as well as the recovery, collection, movement and disposal of hazardous waste.</p> <p>The plan identifies the extent of hazardous waste arisings and the recommendations contained in the plan must be taken into account by the Local Authorities when they are preparing Waste Management Plans</p> <p>Implementation of measures within this Plan is the responsibility of Local Authorities.</p>

3.2.6 Animal By-Products Regulation (1774/2002/EC)

The EC Animal By-Products Regulations (1774/2002/EC) was published on 1 May 2003. These Regulations aim to protect animal and public health by strictly regulating the disposal and use of animal by-products which are not intended for human consumption and by reducing the risk of transmission of disease such as the spread of foot and mouth disease.

The Animal By-Products Regulations divides products into 3 categories and specifies the means of disposal for each category. Category 1 relates to materials of a very high risk, Category 2 to materials of high risk and Category 3 to those of low risk.

Category 1 materials must be destroyed and are banned from use as feedstock in biogas and composting plants. Category 2 materials may be used in composting and biogas plants but only after pre-treatment by rendering in approved Category 2 processing plants at 133°C, 3-bar pressure for a continuous period of 20 minutes. Kitchen and organic waste will contain category 3 animal by-products and hence the processing of these wastes in biogas or composting plants will require the following treatment requirements:

- Treatment is to be enclosed (in-vessel)
- All material must be shredded to maintain a maximum particle size of 12mm.
- Anaerobic digestion plants must have a pasteurisation/hygenisation stage of 70°C for one hour or 57°C for 5 hours.
- Composting plants must have a pasteurisation/hygenisation stage of 70°C for one hour or 60°C for 2 days.
- Composting plants must have a two-stage system with separate digestion vessels for systems without mixers. Systems that involve material mixing may be able to achieve both stages in one vessel.
- Processes must be designed to prevent recontamination (by segregation of clean and unclean areas).
- Salmonella must be absent in the end product biofertiliser.
- The site and all plant must be validated by the SVS (State Veterinary Service).
- A HACCP (Hazard Analysis and Critical Control Points) Plan must be submitted prior to the facility commencing operation.
- Restrictions will be placed on using the biofertiliser on pasture land.

EU Animal By-Products Regulations 2003 have been transposed into Northern Ireland by way of the Animal By-Products Regulations (Northern Ireland) 2003. Facilities treating animal by-products or catering wastes are subject to approval by the Department of Agriculture and Rural Development (DARD).

In the Republic of Ireland approval to operate such a plant containing Animal By-Products must also be obtained from the appropriate competent authority, that is, the Department of Agriculture and Food who will ensure that the appropriate treatment standards are met before granting approval.

These regulations have increased the level of treatment required for waste containing any animal by-products, including catering/kitchen wastes. As a result of this, windrow composting of these wastes is no longer adequate and In-vessel Composting facilities, Anaerobic Digestion plants or some alternative biological treatment facility will be required to treat mixed organic wastes in order meet these treatment standards. This higher level of treatment is likely to increase the future costs of management of this particular waste stream.

3.3 WASTE MANAGEMENT POLICY

Both Northern Ireland and Republic of Ireland have produced waste management policy documents based on the principles of EU Waste Management and the EU Waste Management Hierarchy, and in direct response to the requirements of the EU Waste Framework Directive. In Northern Ireland this has taken the form of the development of a Waste Management Strategy while in Republic of Ireland, a number of policy documents have been published. It is anticipated that both the Northern Ireland Waste Management Strategy and the Republic of Ireland Policy Documents will form the basis on which integrated and sustainable waste management is achieved in the long term. These are considered further below.

3.3.1 Northern Ireland Waste Management Strategy

The Waste Management Strategy for Northern Ireland (DOE, 2000), which is at present the subject of a review process, sets out a long-term vision for the future development of waste management in Northern Ireland. It reinforces the Waste Management Hierarchy, which is at the centre of EU Waste Management Policy, emphasising the need to move away from disposal and up the waste management hierarchy to more sustainable waste management practices in Northern Ireland.

The Strategy further recognised the potential benefits that should be achieved through councils working together with respect to strategic planning and economies of scale, and recommended the creation of groups or partnerships between Councils. As a result, three voluntary regional groupings of councils have been established for the purpose of waste planning in Northern Ireland.

The key targets to be achieved in accordance with the Northern Ireland Waste Management Strategy are:

Recovery of 25% of household waste by 2005.
Recovery of 40% of household waste by 2010, of which 25% shall be recycling or composting.
Diversion of 25% of biodegradable municipal waste from landfills by 2010.
Diversion of 50% of biodegradable municipal waste from landfills by 2013.
Diversion of 65% of biodegradable municipal waste from landfills by 2020.

3.3.2 *Changing Our Ways (1998)*

The policy document 'Changing Our Ways' was published by the Minister for the Department for the Environment and Local Government (DOELG) in October 1998 and provided a national policy framework to address the issues surrounding waste management and the development of strategic waste planning.

The policy statement set out to promote sustainable waste management of waste in an integrated manner with clear targets set for treating waste over a fifteen-year period, whilst also endorsing the EU Waste Management Hierarchy.

The targets aim to achieve:

A diversion of 50% of household waste from landfill
The development of composting and other biological treatment facilities capable of treating up to 300,000 tonnes of biodegradable waste per annum
Recycling of 35% of municipal waste
Recycling of at least 50% of construction and demolition (C & D) waste within a five year period, with a progressive increase to at least 85% over fifteen years.

3.3.3 *Delivering Change- Recycling and Preventing Waste, 2002*

This Government statement focussed on waste prevention and recycling and further emphasised the national approach to regional waste management planning. This statement was based on the principles of 'Changing our Ways'. The policy statement was supported by a capital grants scheme under the National Development Plan for the provision of infrastructure to encourage greater reuse and recycling of waste. It advanced the use of the Producer Responsibility principle to other waste streams such as C&D waste, WEEE, and newspapers. In addition to this, the Policy Statement put forward a number of actions to be undertaken at all levels of the waste management hierarchy for the management of goods and materials, at all stages from production through to disposal.

3.3.4 Waste Management- Taking Stock and Moving Forward

Waste Management, Taking Stock and Moving Forward was published in April 2004 and, together with the National Overview of Waste Management Plans, gave a five year report on Irelands' waste management progress from 1998-2003. The Policy was rooted in the concept of an integrated approach to waste management.

3.4 LEVIES AND TAXES

Economic instruments, in the form of levies or taxes, have been used across the EU to encourage a move to more sustainable waste management practices, through changing the economies of waste disposal and to encourage a change in attitude or behaviour.

This section of the report considers the Landfill Tax and Levy, measures which have been introduced in Northern Ireland and the Republic of Ireland respectively, and the Plastic Bag Levy, which is currently only applicable to the Republic of Ireland.

These instruments therefore have the potential, all other factors being equal, to change public perception and behaviour and to act as a driver encouraging the movement of wastes towards the lower tax regime.

3.4.1 Landfill Levy/Tax

The Landfill Levy was introduced in the Republic of Ireland under the Waste Management (Landfill Levy) Regulations 2002. From this date a levy of €15 per tonne is payable for each tonne of commercial and domestic waste deposited at landfills. The landfill levy is set to rise although the subsequent increase of this amount will not be by more than €5 per tonne per annum. This is in order to discourage the landfilling of waste and encourage alternative options such as waste minimisation, reuse and recycling. The landfill levy regulations provide related regulatory powers, including powers to require that the proceeds of the levy be paid into the Environment Fund.

The revenues from the Landfill Levy and those generated from the Plastic Bag Levy (discussed below) are paid into an Environment Fund which is managed and controlled by the Minister for DEHLG and allows the monies raised to be used for the development of further environmental programmes and initiatives. Monies are collected from the owners and operators of landfill sites by the Local Authorities.

The Landfill Tax was introduced in the UK under the Landfill Tax Regulations 1996 and subsequent amendment in 2003. A disposal is therefore subject to landfill tax if the following criteria apply:

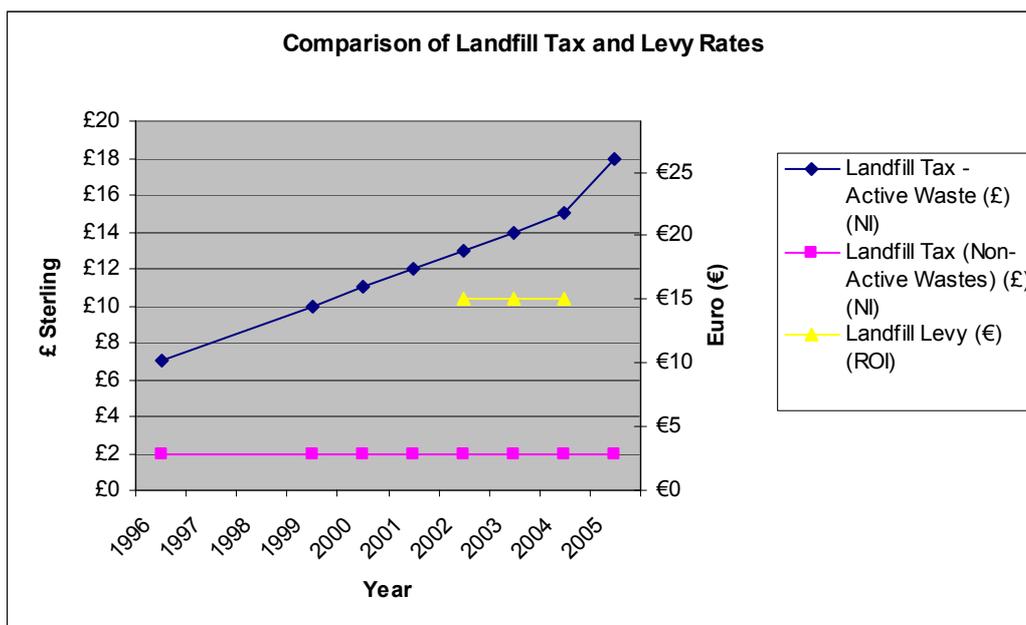
- The material is disposed of as waste;
- The disposal is made by way of a landfill at a landfill site.

The standard rate for active waste started at £7 per tonne in 1996/1997 and has since increased annually. In addition to this, there is also a lower level of tax of £2 per tonne for non-active wastes.

The increase in the landfill tax for active wastes is illustrated in the graph below and compared to the landfill levy. The current rate of landfill tax in the financial year 2004/2005 is £15/tonne.

The 2003 Budget announced reforms to improve waste management, which included:

- An increase in landfill tax to £18 per tonne in 2005-2006
- An increase in the landfill tax of £3 per year from 2005-2006 onwards
- A projected medium-to-long term rate of £35 per tonne.



The differences between the landfill levy and the landfill tax create a cost differential (all other things being equal) which has the potential to act as a driver in the market for wastes to move from the high tax to the low tax environment.

3.4.2 Plastic Bag Levy

In addition to the landfill levy, the Republic of Ireland has introduced Regulations for an environmental levy on plastic bags.

The Waste Management (Environmental Levy) (Plastic Bag) Regulations 2001 provided for the imposition of an environmental levy of 15 cents on plastic bags from 4 March 2002. This charge applies at the point of sale and the full amount must be passed on by retailers to customers, and is itemised on all receipts or invoices issued. The charge was introduced to encourage the use of reusable bags and to change people's attitudes to litter and pollution.

The revenue generated from this levy, from an estimated 1.3 billion shopping bags (14,000 tonnes) issued annually, is paid into the Environment Fund, as discussed above. To date the implementation of these Regulations has resulted in a 90% reduction in plastic bag use, from a pre-levy consumption of 340 bags/inhabitant/year to a post-levy consumption of 20 bags/inhabitant/year. To date this levy has generated approximately 20 million Euro paid into the Environment Fund for environmental purposes.

This form of environmental levy has not been introduced in Northern Ireland.

PART II
WASTE STREAMS

4.0 MUNICIPAL WASTE

4.1 INTRODUCTION

Municipal waste is defined as: waste from households, and other waste that, because of its nature or composition, is similar to waste from households. It therefore includes waste from households, commercial premises, offices, institutions, and some of the waste generated on industrial premises, such as from canteens. In the Republic of Ireland municipal waste is reported on this basis, and therefore includes waste from a range of sources.

In Northern Ireland, as in the rest of the United Kingdom, a pragmatic approach to reporting municipal waste has traditionally been adopted, and the term refers to wastes under the control of local authorities, including street litter, collected recyclate, wastes from parks and gardens, household waste, waste from Council offices and some small scale commercial wastes (trade wastes).

This difference in approach to describing municipal waste therefore needs to be borne in mind when considering the Northern Ireland and Republic of Ireland data sets, and the differences in approaches to managing this waste stream.

4.2 POLICY REVIEW

The publication of national and regional waste management policy, namely the *Changing our Ways* in 1998, *Delivering Change* in 2001 and *Taking stock & Moving Forward* in 2004 in the Republic of Ireland and the Waste Management Strategy in 2000 in Northern Ireland set key recycling and diversion targets for household and municipal waste. These targets are in line with European Waste Policy Principles and the Waste Management Hierarchy.

The overall recycling targets to be achieved for household and municipal waste in Northern Ireland and the Republic of Ireland are detailed below in Table 4.1.

Table 4.1 Recycling Targets

Northern Ireland	Republic of Ireland
Recover 25% of household waste by 2005	Recycling of 45% paper and cardboard from Households by 2009
Recover 40% of household waste by 2010, of which 25% shall be by recycling or composting	Diversion of 40% of textiles by 2009
	Diversion of 50% of household waste from landfill by 2013
	Recycling of 35% of municipal waste by 2013

The Landfill Directive is also a key driver of change in the implementation of waste management practices for municipal waste and sets targets for the diversion of biodegradable municipal waste from landfill. Table 4.2 highlights the landfill diversion targets and the implementation dates for Northern Ireland and Republic of Ireland.

Table 4.2 Landfill Directive Targets

Target To reduce the total amount of biodegradable municipal waste going to landfill to:	Date of implementation for:	
	Northern Ireland**	Republic of Ireland*
1995 Baseline BMW Generation	631,900 tonnes	1,160,690 tonnes
75% of 1995 levels	2010	2006
Tonnage Allowance	470,000 tonnes	843,303 tonnes
50% of 1995 levels	2013	2010
Tonnage Allowance	320,000 tonnes	562,202 tonnes
35% of 1995 levels	2020	2016
Tonnage Allowance	220,000 tonnes	393,541 tonnes

* Source: Draft Biowaste Strategy.

** Source: The Landfill (Scheme Year and Maximum Amount) Regulations, 2004

The Draft National Biodegradable Waste Strategy in the Republic of Ireland and the Landfill (Scheme Year and Maximum Amount) Regulations, 2004 in Northern Ireland also set targets for diverting biodegradable municipal waste away from landfill and have been designed to ensure that the key landfill directive targets, as mentioned above, are met.

4.3 WASTE PLAN IMPLEMENTATION

The Waste Management Plans provide details of the type of infrastructure and number of each facility for the reprocessing of municipal waste that needs to be implemented over the period of the plans in order for the aforementioned targets to be achieved. Tables 4.3 to 4.7 provide a summary of the number of waste facilities projected under the Waste Management Plan along with the current numbers of each facility that have been developed by 2003 within each region by Local Authorities or through service contracts with the private sector within NI, or either by Local Authorities or the private waste industry in the Republic of Ireland.

Table 4.3 Implementation of Infrastructure within the Connaught Region

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Recycling Points	1 bank per 500 households	1 bank per 303 households
Civic Amenity Sites	21	8 no. in operation 2 no. under construction.
Materials Recovery Facility	6	1 no. local authority in operation (8 no. private)
Waste Transfer Stations	4	3 no. private and 1 no. local authority in operation
Green Waste Composting	6	3 no. in operation 1 no. under construction.
Biological Treatment	3 central facilities	3 no. in operation 1 no. under construction.
Thermal Treatment	1 (150,000 – 200,00 tpa Galway)	3 no. in operation 1 no. under construction.
Landfill Sites	2 regional facility	4 no. landfills currently in operation in the Region. 1 no. private landfill (Greenstar) for Galway City and Galway County to be proposed for 2006. 2 no. regional landfills proposed, one in North Connaught and one in South Connaught

Table 4.4 Implementation of Infrastructure within Donegal

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Recycling Points	80% coverage	52 in place, providing coverage to all significant centres of population within the County
Civic Amenity Sites	80% coverage	1 in operation. 3 others about to be advanced
Materials Recovery Facility	-	Procurement of facilities being advanced in association with the NWRWMG
Waste Transfer Stations	t.b.c.	t.b.c.
Green Waste Composting	50% of households with gardens to be supplied with home composters	4000 subsidised composters distributed
Biological Treatment	-	Procurement of facilities being advanced in association with the NWRWMG
Thermal Treatment	none	none
Landfill Sites	2 - 4 regional facility	1 no. landfill currently in operation in the Region.

Source: National overview of Waste Management Plans

Table 4.5 Implementation of Infrastructure within the North East Region

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Recycling Points	1 bank per 500 households	1 bring bank per 1,212 households
Civic Amenity Sites	10	7 (2 in planning)
Materials Recovery Facility	2	*4 Licensed and several Permitted MRFs/ Transfer facilities
Waste Transfer Stations	4	A number of smaller scale facilities in operation. Further being developed by private sector
Green Waste Composting	2	No regional facilities, small permitted private sector taking green waste
Biological Treatment	1	No regional facility for biowaste from households or commerce
Thermal Treatment	1	At advanced planning
Landfill Sites	1 regional facility	3 Council owned landfills in operation and one private facility in Meath.

Table 4.6 Implementation of Infrastructure within SWaMP

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003	Comments
Recycling Points	94 new facilities	70	The Local Authorities intend to develop 21 facilities in 2004/2005. A further 7 facilities to be developed 2005/06
Civic Amenity Sites	15 new sites; enhancement of 3 existing	8	The Local Authorities intend to develop the remaining 7 new sites in 2004/2005.
Materials Recovery Facilities	1 or 2 facilities	None	Councils have procured services for the reprocessing of MDR collected with the Council areas and therefore to date MRF's within the region have been developed by the private sector.
Waste Transfer Stations	8 facilities	3	3 LA's have secured contracts for the treatment of materials within their Council area thus removing the need for transfer stations.
Green Waste Composting	2 – 3 facilities	None	LA's generally have short term contracts for the composting of green wastes collected by LA areas at CA Sites Generally these composting facilities have been developed by the private sector.
Biological Treatment	1 facility	None	Awaiting clarification and guidance of the Animal by Products. LA's intend to procure services for the biological treatment of mixed organic wastes collected by LA's through segregated kerbside collections..
Thermal Treatment	None	None	
Landfill Sites	1 new facility	None	Planning Permission for site granted. IPPC application lodged awaiting decision.

Table 4.7 Implementation of Infrastructure within NWRWMG

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003	Comments
Recycling Points	41 new facilities	16 new facilities	
Civic Amenity Sites	22 new sites; enhancement of 5 existing	No new CA sites developed by 2003.	
Materials Recovery Facilities	1 or 2 facilities	None	The Group has procured a service contract for the reprocessing of MDR collected by LA's and therefore the MRF for this contract has been developed by the private sector
Waste Transfer Stations	7 facilities	6 facilities	Councils have either developed their own WTS or have procured the service of one from the private sector.
Green Waste Composting	2 – 3 facilities	None	LA's generally have short term contracts for the composting of green wastes collected by LA areas at CA Sites Generally these composting facilities have been developed by the private sector. Although some LA's have developed their own windrow composting areas at their own landfill sites.
Biological Treatment	1 facility		LA's have commenced on the procurement of services for the biological treatment of mixed organic wastes collected by LA's and therefore most facilities are likely to be developed by the private sector. 1 small scale In-Vessel Composting Facility is also to be provided by one LA following planning approval.
Thermal Treatment	None	None	
Landfill Sites	Development landfill capacity	New cells have been provided at 2 existing sites:	A service contract is also currently being procured for the provision of landfill capacity to serve the waste disposal needs for 20 years in the region.

The development of waste infrastructure throughout Ireland has predominately been by the private sector with a network of small scale materials recovery facilities, windrow composting, and in-vessel composting facilities being developed both north and south of the border. However in general terms, in Northern Ireland, landfill sites, civic amenity sites and waste transfer stations generally remain under the control and ownership of local authorities, although there is evidence of a shift towards greater private sector involvement.

HOUSEHOLD WASTE RECYCLING CENTRES**Examples of Best Practice within the Region**

A number of new Civic Amenity Sites / Recycling Centres have been developed as part of the implementation of the waste management plans. These sites encourage the separation of households waste into various recyclable materials.

The recent facilities at Magherafelt, Dundalk and Navan, which are designed to encourage the segregation of materials, through the provision of a wide range of collection containers, a well-designed user-friendly layout, and well-trained, knowledgeable and committed staff, have achieved high levels of recycling and materials

In order to deliver the objectives of the Waste Management Plans, Local Authorities within Northern Ireland are seeking increasingly to procure long term service contracts for the collection, transfer, reprocessing and delivery to end market of segregated materials collected from households by councils. Key to achieving this is the ability of local authorities to control the revenue streams and direct the waste materials.

SERVICE CONTRACTS FOR MIXED DRY RECYCLABLES**Example of Best Practice within the Region**

In 2004 the North West Region Waste Management Group let a contract for the collection, reprocessing and delivery to end markets of mixed dry recyclables. This was the first of its kind in Northern Ireland, involving the seven Council areas coming together to procure a service contract .

Key features of this contract include:

- Demonstrated security of markets for materials for a defined timescale
- Significant economies of scale
- Fair apportionment of risk between private and public sectors
- Assured supply of materials to the contractor
- Cost certainty for future financial planning
- Common costs for the provision of the service across the region

The implementation of this contract has resulted in a step change in recycling within the region.

4.4 MUNICIPAL WASTE ARISING

As part of the ongoing review of the waste management plans within the Cross Border Region current waste arisings data is being collated. This includes data on waste generation; municipal & household waste arisings; waste collection; recycling rates and infrastructure development for each Local Authority. The key information has been incorporated within this section to allow for current and future capacity requirements to be evaluated and for opportunities for co-operation within the Cross Border Region to be identified.

At the time of writing this report some waste data figures were not available for all regions and waste streams as the review of the Waste Management Plans for each of the waste planning regions will not be completed until mid 2005.

Household Waste

The term household waste is used to describe all wastes that come from domestic properties or living accommodation, including caravan, residential homes, schools and universities, hospitals and nursing homes. However it excludes minerals, synthetic oil or grease, asbestos, clinical waste and any special or hazardous waste.

The following Table 4.8 show the current household waste arisings within the Cross Border Region.

Table 4.8 Household Waste Arisings (tpa)

Sub Region	Year			
	1999/2000	2001	2002	2003
Connaught ¹	144,595	176,267	150,612	163,947
Donegal	32,792 ²	34,550 ¹	26,764 ³	28,505 ³
North East	126,491	155,165	153,544	151,922
North West	152,430	155,796	174,135	166,521
SWaMP	203,308	215,683	237,069	239,542
TOTALS	659,616	737,461	742,124	750,437

Note 1 Source EPA Databases 1998, 2001, 2002

Note 2 Extrapolated from waste plan

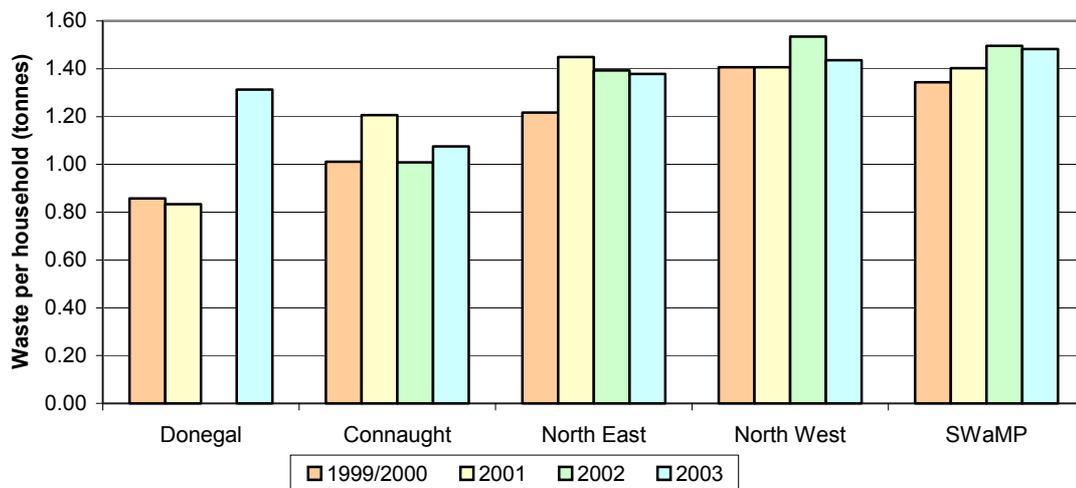
Note 3 EPA Waste returns DCC

These figures show the quantities of household wastes that have been collected throughout the different areas of the Cross Border Region between 1999 and 2003. There is great deal of variation in annual growth rate for household waste arisings between years. The average growth rate for the period 1999/2000 to 2003 has been calculated as 4.8% for SWaMP, 2.5% of North West, 3.6% for Connaught, -3.5% for Donegal and 5.4% for the North East Region.

These growth rates are significantly higher than those predicted within the waste management plans and therefore this makes it difficult to project future waste arisings and future capacity requirements.

The quantity of waste generated per household, calculated as the quantity of household waste produced in a region divided by the number of households, provides an indicator to assess the performance of waste reduction activities and evaluate broad trends in household waste generation.

Figure 4.1 Waste generated per household



This graph, suggesting that the waste generated per household, is starting to stabilise, provides an indication that the waste reduction initiatives, such as recent education and awareness initiatives, including the media campaigns are beginning to influence the public's view on waste management and to change public behaviour.

Another key indicator in the effectiveness of waste management practices such as the introduction of segregated recycling and composting schemes is the recovery rates that are currently being achieved within the Cross Border Region. The following Table 4.9 shows the average household waste recovery rates for each of the waste planning regions within the Cross Border Region and future projected rates up until 2005 and compares them to policy targets.

Table 4.9 Average Household Waste Recovery Rates (2003)

Sub Region	Recovery Rates			Targets	
	2003	2004/05	2005/06 ³	2005	2009/10
Connaught ¹	15.9%	18%	20%	20%	45% (paper & card)
Donegal ²	10%	12.5%	19%	19%	45% (paper & card)
North East ¹	14%	17%	20%	20%	45% (paper & card)
North West	9.9%	16.9%	19.8%	25.0%	40%
SWaMP	18%	22.5%	25.7%	25.0%	40%

Note 1 Assumption: all waste separately collected is recycled or recovered. (Source: LA Waste Data)

Note 2 Source DCC

Note 3 Projected rates

The implementation of segregated waste collection scheme has been a key part of the implementation of the regional waste management plans and the achievement of the above recovery rates.

HOUSEHOLD WASTE RECYCLING AND RECOVERY

Example of Best Practice

A number of separate kerbside collection systems for the collection of Mixed Dry Recyclables (MDRs) and Compostables have recently been rolled out in the Region. Examples where high recycling rates of collected household waste are being achieved include Banbridge and Galway City.

Key features of these successful arrangements include:

- Control of collection by the local authorities
- High coverage of three bin source – separated collection – the higher the coverage, the higher the recycling/recovery rate
- Commitment to high level performance by the Councils and support by the public
- Track record of an ongoing awareness and information campaign supported by local recycling/environmental education officers
- Local re-processing capacity and markets for the organic waste fraction (Galway City uses the compost it produces itself)

It should also be noted that in general, in the Republic of Ireland, where there is greater control over waste collections by Local Authorities, higher waste recovery rates have been achieved. For example, Galway City is now reporting recycling rate of 58% for collected household waste.

Municipal Waste

The quantity of municipal waste, and particularly its biodegradable fraction, is a key indicator of waste management performance given its relationship to the landfill diversion targets under the Landfill Directive (1999/31/EC) and the subsequent infraction fines that could incur if these targets are not met.

The total amount of municipal waste produced by each planning region has been presented below in Table 4.10.

Table 4.10 Municipal Waste Arisings (TPA)

Sub Region	Year			
	1999/00	2001	2002	2003
Connaught ³	231,128	332,375	312,178	322,827
Donegal	38,000 ¹	48,546 ²	39,032 ⁴	40,357 ⁴
North East	188,048	206,362	236,636	266,913
North West	211,126	200,539	205,103	190,067
SWaMP	256,667	279,606	268,803	265,365
Total	924,969	1,067,428	1,061,752	1,085,529

Note 1 Source Donegal waste management plan

Note 2 Source National Waste Database report 2001

Note 3 EPA Databases 1998, 2001, 2002, 2003

Note 4 Source DCC

As with household waste, the annual growth rates in municipal waste has varied between 1999/2000 and 2003 with an average growth rate calculated at 0.9% for SWaMP, - 2.7% for North West, 10.6% for Connaught, 1.65% for Donegal and 11.2% for the North East Region. These variations make it difficult to project future waste arisings and hence future treatment capacity requirements, with great certainty. These variations are likely to be due to a number of factors, including for example, changes in reporting and accounting practices, introduction of weighbridges, adjustments between waste categories, and increased collection coverage. Notwithstanding this, confidence in the data is increasing, but it also serves to highlight the importance of data collection and reporting as a key element in waste management planning. It is generally accepted that waste generation is continuing to increase, although the introduction of the new pay-by-weight scheme in the Republic of Ireland from the 1 January 2005 is also likely to have an influence on reported future waste arisings, with an increase in home composting and waste prevention anticipated

Biodegradable Municipal Waste Arisings

Biodegradable municipal waste refers to that portion of the municipal waste stream that is capable of undergoing anaerobic or aerobic decomposition.

The principal 'biodegradable' components of municipal waste therefore are paper, cardboard, food wastes and garden waste. These also tend to be the heaviest components and account for about 60 – 70% of the municipal waste stream, by weight. The policy focus on the biodegradable fraction is driven primarily by environmental considerations including the reduction of the quantities of greenhouse gas (methane) generated when these wastes are landfilled.

Table 4.11 Biodegradable Municipal Waste Landfilled

Sub Region	Year			
	2003	2004/05	2005/06	2005/06 Target
Connaught	209,838	209,838	157,379	115,503
Donegal ¹	24,700	31,555	25,371	26,232
North East	164,966	164,966	123,725	77,016
North West	124,252	120,548	120,818	128,839
SWaMP	155,622	153,567	151,276	160,619

Note 1 Assumes 65% of Municipal waste is biodegradable (source National Strategy for Biodegradable Waste)

Additional facilities for collection and treatment of biodegradable municipal waste will be required within the Connaught and North East Regions if the 2006 landfill directive targets are to be achieved. According to the Draft National Strategy for Biodegradable Waste the current operational capacity in the Republic of Ireland is approximately 60,000 tonnes/annum this must increase to approximately 350,000 tonnes/annum in 2009 if the landfill directive targets are to be met. In SWaMP and NWRWMG a combined capacity of approximately 170,000 tonnes/annum is required by 2009 if the landfill directive targets are to be achieved.

4.5 MANAGEMENT SYSTEMS

Data Collection

The production and collation of reliable and up to date data is key to ensuring effective future waste management planning. In order for reliable data to be obtained waste data collection mechanisms have been established both in Northern Ireland and the Republic of Ireland as detailed below.

In Northern Ireland the Department of Environment has the authority to collect waste management data on a regular basis in order to satisfy requirements under the Waste and Contaminated Land (Northern Ireland) Order, 1997. In order to facilitate this, Key Performance Indicator data sheets have been compiled to compare best practice and performance towards the meeting of waste management targets on a Council basis.

These data sheets detail the primary indicators for municipal and household waste management and also indicators to be measured for kerbside collection schemes, bring schemes and civic amenity sites. The information is presented to the Department on a quarterly basis and then amalgamated into an annual report for each calendar year.

To facilitate a single reporting mechanism and hence ensure consistency of reporting across the UK, a new reporting system is currently being phased into the reporting system in Northern Ireland. When fully implemented, this system will replace the Key Performance Indicator data sheets. This system, entitled WasteDataFlow, has been designed *“to enable authorities responsible for waste collection, recycling and disposal in the UK to carry out their waste reporting in a timely and structured manner by utilising a single, user friendly online reporting system”*. WasteDataFlow enables the verification of waste data to ensure its consistency and it allows individual authorities not only to monitor their own performance but also to compare their performance against other similar authorities. The data is subjected to various auditing and checking mechanisms prior to its final submission to ensure consistency of reporting and to eliminate errors.

In the Republic of Ireland, the Environmental Protection Agency has a requirement for waste data questionnaires to be completed by Recycling Organisations, Industrial Organisations and Local Authority questionnaires on an annual basis. The information produced from the annual returns is used for the production of a National Waste Database Report. This report provides information, commentary and trends on waste generation and management in Ireland and it aims to provide the best information available in relation to waste generation, waste management and waste infrastructure.

Three National Waste Database Reports have been produced to date (1995, 1998 and 2001). The next Report to be prepared will cover the year 2004 and will be available in late 2005/early 2006.

The differences in the reporting mechanisms between Northern Ireland and Republic of Ireland make it difficult to quickly and efficiently assess current waste arising throughout Ireland and therefore predict future capacity requirements and opportunities. Streamlining of these two processes could improve consistency and timing of reporting, which would facilitate the establishment of baseline conditions against which future progress within the region can be monitored.

Waste Collection

There are a number of differences, in relation to waste collection arrangements, which impact upon waste management in the Cross Border Region.

In Northern Ireland waste collection is under the control of Councils who provide a collection service for household waste to every household within their Council area, whereas in the Republic of Ireland essentially a 'free market' operates, with waste collection provided by private waste companies over large geographic areas, with collection by councils generally concentrated around cities and large towns. These arrangements are summarised in Table 4.12. The level of coverage of collection services therefore varies significantly between each local authority area and each regional planning area.

Table 4.12 Collection Arrangements

	Collected by Council	Collected by private Collectors	¹ contains uncollected areas
Connaught			
Galway Co		✓	✓
Galway City	✓		✓
Leitrim		✓	✓
Mayo	✓	✓	✓
Roscommon		✓	✓
Sligo		✓	✓
Donegal			
Donegal		✓	✓
North East			
Meath		✓	✓
Monaghan		✓	✓
Louth		✓	✓
Cavan	✓	✓	✓
NWRWMG			
Ballymoney	✓		
Coleraine	✓		
Derry	✓		
Limavady	✓		
Magherafelt	✓		
Moyle	✓		
Strabane	✓		
SWaMP			
Armagh	✓		
Banbridge	✓		
Cookstown	✓		
Craigavon	✓		
Dungannon	✓		
Fermanagh	✓		
Newry & Mourne	✓		
Omagh	✓		

Note 1 In terms of uncollected waste in Connaught and the North East households have the offer of a collection service but many do not avail of the service.

This issue of coverage of collection services is further illustrated in Table 4.13, which shows the percentage of households served with a black bin for general mixed wastes, and separate collections for recyclables and compostables within the Cross Border Region and the percentage recycling that is being achieved.

Table 4.13 Collection Coverage Rates 2003 for Cross Border Region

	Connaught	Donegal	North East	NWRWMG	SWaMP
Total no. of households	152,544	37,000 ¹	110,263	115,999	161,547
No. of Households served by a general waste bin	96,102	28,000	77,184	115,999	161,547
% Households served with general waste bin	63%	49%	70%	100%	100%
No of households served by recyclables Bin	51,000	0	65,998	62,195	82,328
% Households served with recyclables Bin	33%	0%	60%	54%	51%
No of households served by compostables Bin	21,800	0.	0	0	26,995
% Households served with compostables Bin	14%	0%	0%	0%	17%
% Recycling Rate	15.9%	12.5%	14%	9.9%	18.0%

Note 1 Source 2002 Census

The fact that there are areas where households do not avail of/or have access to waste collection services illustrates a fundamental difference in approaches between Northern Ireland and the Republic of Ireland. In Northern Ireland, under the governing legislation, the collection of waste has primarily been viewed as a public health issue, hence the collection from every household. In the Republic of Ireland, the less than 100% collection coverage appears to be driven by cost considerations, based on interpretation of the legislative requirements. However, those wastes which are not collected must be disposed of by other means, including dumping and backyard burning which represent public health, animal health and environmental risks.

The requirement to recover/recycle an increasing proportion of the municipal waste stream does have important implications for the future, as experience across the EU demonstrates that integrated waste management systems are founded to a large degree on municipal waste management services, which are controlled directly by the municipalities, and the facilities required to support them.

No example has been identified in any other EU member state where management of municipal waste is not under the control and direction of the municipalities, albeit in some places the private sector collect and/or treat the wastes on behalf of municipalities following competitive tenders.

The lack of control on waste arisings by local authorities within the Republic of Ireland has potentially significant implications, with respect to forward planning, guaranteeing the provision of collection services, and in securing long term contracts for the collection, treatment, reprocessing and delivery to end markets of waste materials. Clearly it remains in principle unacceptable to roll back the private sector involvement, which is operating in a free market environment. However where waste is uncollected it represents a lost resource.

This issue therefore has the potential to impact on the ability of Local Authorities to ensure compliance with targets, and appears vulnerable. It also has potential implications for future investment and investor confidence, and as the market responds through a process of consolidation, it also appears to have the potential for the creation of monopolies or oligopolies within geographic areas, which could give rise to a loss of competition in the medium to longer term.

5.0 COMMERCIAL & INDUSTRIAL WASTE

5.1 INTRODUCTION

Commercial and Industrial waste is described as waste from premises used wholly or mainly for business, trade, recreation or entertainment, excluding household waste, mines, quarries and agricultural waste. Industrial waste refers to waste produced or arising from manufacturing or Industrial activities or processes

The Commercial and Industrial (C & I) waste stream also includes a range of priority and other waste streams, for example, packaging waste, batteries, waste oils, tyres, waste electrical and electronic equipment, end of life vehicles, healthcare waste and sewage sludge.

These are subject to increasing amounts of waste specific legislative measures that aim to implement the Producer Responsibility Principle.

5.2 POLICY REVIEW AND TARGETS

The publication of national and regional waste management policy, namely the *Changing our Ways* in 1998, *Delivering Change* in 2001 and *Taking stock & Moving Forward* in 2004 in the Republic of Ireland and the Waste Management Strategy in 2000 in Northern Ireland have specified key recycling and diversion targets that Local Authorities must comply with in order to ensure the requirements of European Legislation such as the Landfill Directive are met.

The overall targets to be achieved for Commercial and Industrial (C & I) waste in Northern Ireland and the Republic of Ireland are detailed in Table 5.1 below.

Table 5.1 C & I Targets

Northern Ireland	Republic of Ireland
To reduce the landfilling of industrial and commercial wastes to 85% of 1998 levels by 2005.	No specific strategy targets have been set for C&I Waste. However individual waste plans set out target recycling rates as part of their implementation action plans.

5.3 WASTE PLAN IMPLEMENTATION

The Waste Management Plans provide details of the type of infrastructure and number of each facility for the reprocessing of Commercial and Industrial (C & I) waste that need to be implemented over the period of the plans in order for the aforementioned targets to be met.

Tables 5.2 to 5.5 provide a summary of the number and type of facilities projected under the Waste Management Plan along with the current numbers of each facility that have been developed within each region.

Table 5.2 Implementation of Infrastructure within the North East Region

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Commercial & Industrial Recycling and Disposal Facilities	2 MRFs	t.b.c

Table 5.3 Implementation of Infrastructure within the Connaught Region

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Commercial & Industrial Recycling and Disposal Facilities	2 MRFs	t.b.c

Table 5.4 Implementation of Infrastructure within the SWaMP Region

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Commercial & Industrial Recycling and Disposal Facilities	Materials Recovery Facilities with a total treatment capacity of >23,500 tpa. Landfill capacity for C & I disposal of 85,000 tpa at 2002, reducing to 72,250 tpa in 2005.	t.b.c

Table 5.5 Implementation on Infrastructure within the North West Region

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Commercial & Industrial Recycling and Disposal Facilities	Materials Recovery Facilities with a total treatment capacity of >17,500 tpa. Landfill capacity for C & I disposal of 63,000 tpa at 2002, reducing to 53,500 tpa in 2005.	t.b.c

It is recognised that further facilities will be required for the range of priority waste streams classified under C&I waste, as the legislation is developed, and implemented. At this stage however, it is not possible to define the timing, nature, scale and location of such facilities, but it is anticipated that these will evolve in response to market requirements, and be located within each region as appropriate, subject to demand and compatibility with land use planning policies on specific sites.

5.4 WASTE ARISING

This section provides a brief overview of current waste data available for Commercial and Industrial (C & I) waste and highlights some of the opportunities and barriers that they present.

Table 5.6 Estimated Arisings of C&I Waste within the Cross Border Region

Region ¹	Tonnes/Annum
SWaMP *	137,100
North West *	75,000
Connaught **	Commercial: 57,022 Industrial: 122,237
North East ***	Commercial: 69,588 Industrial: 116,527
TOTAL	577,474

* Data from the Waste Arisings Survey, 2000

** Estimates for industrial waste have been derived using waste generation figures for different sectors from Irish industry obtained from MCOS industry surveys.

*** Commercial figure for Co. Meath was obtained from the landfill at Basketstown.

1: Data from Donegal is not available at the present time

5.5 MANAGEMENT SYSTEMS

In Northern Ireland and the Republic of Ireland C & I wastes are generally collected by private companies, although they may be disposed of at landfill sites, owned and operated by local authorities. Trade wastes, in some areas are collected by local authorities, on a chargeable basis, and these figures are therefore reported within the municipal waste data.

In principle a range of treatment options exists for the treatment of C & I wastes. These options include landfill, recycling, recovery, re-use and reduction. The proportion of waste managed by each of these treatment options will vary over time in response to the prevailing market and economic conditions, and availability of facilities to treat the waste

It is recognised that, at present, reliable data on the quantities of C & I waste produced are limited, due to limited recording, with the quantities estimated on the basis of surveys and extrapolations. There is therefore not a high level of confidence in the data which must be recognised in the current Waste Management Plan review process and identification and sizing of suitable infrastructural requirements.

Waste producers, service providers, local government and central government all have a key role to play to ensure that C & I wastes are managed in a more sustainable manner, and policy and legislative targets are met. Whilst the role of central and local government's role is primarily about creating a supportive market and regulatory regime, the private sector must take primary responsibility for managing the wastes.

This includes accurate recording and reporting of data, the provision of services and facilities, improvement of waste management practices internally including waste prevention and introduction of clean technology.

6.0 PACKAGING WASTE

6.1 INTRODUCTION

Packaging is defined as all products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods. Packaging waste therefore is present in all waste streams including for example, household, commercial and industrial, and construction and demolition.

Quantities of packaging waste have increased as economies have grown and levels of consumer spending have increased. It is therefore widely recognised that action is needed in order to reduce, recover and recycle packaging waste. This has resulted in policy measures being introduced at a European level, and transposed into national obligations, through legislation and the waste planning process, to encourage the recycling and recovery of packaging wastes.

This section reviews the policy and targets implemented in Northern Ireland and Republic of Ireland and looks at the key issues surrounding the overall management of this waste stream, including the current waste arisings and the implementation of initiatives within the waste plans.

6.2 TARGETS

Packaging Waste is an important focus of EU Environmental and Waste Management Policy, where it is defined as a *priority waste stream* covered by EC Directive 94/62/EC on Packaging and Packaging Waste. The Directive aims at harmonising national packaging legislation with the twin objectives of preventing or reducing the environmental impacts associated with packaging and packaging wastes.

In order to implement this Directive, a number of targets have been set. These have been summarised in the table below.

- | |
|--|
| <ul style="list-style-type: none">▪ 25% recycling rate to be achieved by 1st July 2001▪ Between 50% and 65% (by weight of packaging waste should be recovered by 2005▪ Within this general target, between 25% and 45% by weight of the total amount of packaging materials contained in packaging waste will be recycled, with a minimum of 15% (by weight) for each packaging materials |
|--|

6.3 WASTE ARISING

Table 6.1 represents the estimated packaging waste arisings within the cross border region. The data, representing the best available, are taken from each of the Waste Management Plans so it is accepted that the overall quantities may have increased in recent years.

Table 6.1 Packaging Waste Arisings

Waste Type	North East ¹	Connaught ¹	North West ^{2,3}	SWaMP ^{2,3}
Household	26,880	33,331	34,000	45,000
Commercial and Industrial	74,056	55,488	32,000	58,000
Total	103,190	88,819	66,000	103,000

Notes

1. The Packaging content of household waste was estimated at 25%, Commercial waste 33% and Industrial waste 30%.
2. C&I packaging waste quantities are estimated from Northern Ireland Waste Arisings Survey 2001
3. Household packaging waste quantities are estimated on the basis of data from the NI2000 Household Waste Characterisation study, carried out in 2000.

6.4 MANAGEMENT SYSTEMS

The management of Packaging Wastes is undertaken in a different manner in the United Kingdom than in Republic of Ireland. The key issue emanating from this is an inconsistency of available data against which progression towards targets as well as cross border co-operation development of markets can be monitored.

The Producer Responsibility Obligations (Packaging Waste) Regulations (Northern Ireland) 1999, implementing the Packaging Waste Directive in Northern Ireland, require obligated businesses to submit data for packaging wastes generated as a result of their commercial activities. This system is designed to be seamless across the UK and therefore data for Northern Ireland alone cannot be extracted. There are no obligations placed on local authorities for monitoring and measuring quantities of packaging waste.

Although the Directive is designed as a Producer Responsibility initiative in the UK, and hence Northern Ireland, unlike other EU Member States, local authorities are not formally involved in the recovery of packaging wastes as part of the Producer Responsibility scheme. In practice however in Northern Ireland, and in the rest of the United Kingdom, there is a twin track approach to the recovery of packaging waste due to:

- Obligations placed on business through the implementation of legislation; and
- Recycling by Councils to capture packaging waste within the municipal waste stream. (The reprocessing of this material aids the Councils in meeting its recycling/recovery targets).

This is a market based approach where the cost of recycling each material fluctuates in response to market conditions, and where the recycling and recovery obligations are shared between all parts of the packaging chain.

This concept of shared producer responsibility on obligated businesses only, is therefore based on a narrower definition than in Republic of Ireland and other EU states where the approach has been to adopt a cross sectoral approach, including local authorities as well as industry. The UK approach means that local authorities and consumers are only likely to be formally or contractually involved when their input is needed by the packaging producers and compliance schemes to help them fulfil their obligations.

There are however some issues associated with the management of packaging waste in this manner. The scheme was designed to operate seamlessly across the UK, therefore reliable baseline information on packaging wastes in Northern Ireland is not available. The Packaging Waste Forum in Northern Ireland has already recognised this gap and recommended that this information be reported in order to allow an accurate baseline to be established. On the other hand, the packaging waste recycling and recovery targets do not apply to Northern Ireland as a region, and requirements are imposed only on obligated businesses.

In the Republic of Ireland, packaging waste from households is managed through the recycling infrastructure including bring schemes, recycling centres and kerbside collections. Commercial and Industrial packaging waste is managed by a combination of enforcement of Packaging Regulations by Local Authorities and provision of information to producers of packaging waste.

An exemption from the obligations of Packaging Regulations is available to companies who are participating in a collective packaging-waste-recovery scheme operated by an approved body. REPAK Ltd was set up in 1997 under voluntary agreement between Industry and Government for this purpose. The functions of REPAK are to assume responsibility on behalf of its members for the recovery and recycling of packaging waste in the industrial, commercial and domestic sectors. This is achieved through the raising and dispersing of funds from industry and other sources and agreeing as well as implementing strategies with industry, government and local authorities for meeting targets. In addition to this, REPAK monitor progression towards targets through the collection of packaging waste statistics. This management system thus ensures that comprehensive data is available against which progress can be made. Unlike Northern Ireland therefore, local authorities received funding for their packaging waste recycling initiatives, such as bring banks, as part of the overall design and operation of the scheme.

7.0 HAZARDOUS WASTE

7.1 INTRODUCTION

Hazardous/Special wastes are those wastes that are considered to pose a potential danger to the environment or to human health. The Hazardous Waste Directive defines hazardous wastes as those wastes featuring on a list drawn up by the European Commission, because they possess one or more of the properties listed in Annex II of the Directive.

In 1994 a comprehensive list of all wastes, known as the European Waste Catalogue, was produced and from this, a Hazardous Waste List (HWL) was identified.

The way in which hazardous waste is managed is evolving significantly, driven by a series of European Directives affecting resource use and waste management. Among other impacts, these Directives will direct hazardous waste away from landfill, impose more stringent requirements for waste treatment and incineration and increase the number and types of waste described as hazardous.

This section considers the key issues associated with the management of this waste stream both within Northern Ireland and the Republic of Ireland.

7.2 POLICY AND TARGETS

Council Directive 91/689/EEC on hazardous waste implemented the Waste Directive 75/442/EEC in relation to hazardous waste. The Directive seeks to provide a clear and concise definition of hazardous waste while also setting out the requirements for the management and the permitting of hazardous waste recovery and disposal facilities. Significantly though, the Directive does not include provision for the hazardous fraction of domestic waste, unless segregated fractions are separately collected.

In Northern Ireland, the Directive is implemented through the Special Waste Regulations (Northern Ireland) 1998. These Regulations transfer the regulatory authority from District Councils to EHS. They apply to persons who produce, carry and receive special waste whether for the purpose of keeping treating or disposal.

In the Republic of Ireland, the Directive is implemented through the Waste Management Act, 1996 and Protection of the Environment Act, 2003 which provides the framework for a series of waste management regulations. This Act requires that a National Waste Management Plan be prepared to facilitate a life cycle approach to the management of hazardous wastes. This has been published by the Environmental Protection Agency in 2001.

The following targets for reduction in hazardous waste quantities have been established.

Table 7.1 Hazardous Waste Prevention Targets

Northern Ireland	Republic of Ireland
No specific targets have been set for hazardous waste reduction over and above the C & I waste strategy targets	<ul style="list-style-type: none"> ▪ A “standstill scenario” for hazardous waste disposal with 1996 as the base year for that target. ▪ The elimination of unreported hazardous waste.

It can be seen from Table 7.1 that no specific targets have been set for hazardous waste reduction in Northern Ireland. Concerns have been raised that this situation may serve to act as a disincentive for future improvements in the management of this waste stream. In recognition of this, and to meet Directive requirements, a common chapter on Hazardous Wastes has been included in the three Northern Ireland Waste Management Plans. Recognising the critical importance of managing this waste stream and the critical shortfall in the availability of hazardous waste disposal facilities, a Hazardous Waste Forum has been established.

The Landfill Directive with its requirement to designate landfill sites as inert, non-hazardous and hazardous, has had a significant impact, with no hazardous wastes landfill sites currently available on the island of Ireland.

7.3 WASTE ARISING

It is estimated that in Republic of Ireland 296,017 tonnes of hazardous waste were produced in 1998, representing a rise of 29% since the previous data recording in 1996. Of this waste, 44.5% was sent to recovery and disposal facilities on site, 13% was sent to recovery and disposal facilities off-site, 1% was to landfill offsite in Ireland, 34% was exported and 7.5% was recovered and disposed of at an unspecified location.

Waste arisings in Northern Ireland refer to 1999/00 and therefore cannot be used in direct comparison. However, during this period, the total special waste arisings was approximately 44,350 tonnes. Of this, approximately 31% was sent for recycling/treatment in Northern Ireland while 25% was sent to GB for recovery, treatment or disposal. Landfilling accounted for 18%, while 14% went to transfer stations, 12% to sewage works and 0.02% to incineration.

It should be noted however that this split of treatment options relates to the period before the introduction of the Landfill Directive. With the loss of hazardous waste landfill sites on the island, this balance is likely to have now changed.

There remains the problem in both Northern Ireland and Republic of Ireland of unreported quantities of hazardous waste. Hazardous waste produced by households, commercial activities (such as shops, offices and other services) and farms is not reported by the above mechanisms.

The absence of up to date uniform data for all hazardous waste in both Northern Ireland and Republic of Ireland has highlighted the potential for a hazardous waste database to be established under which an up to date baseline for hazardous waste could be established and quantities of all hazardous waste monitored.

7.4 MANAGEMENT SYSTEMS

There are issues associated with the management of this waste stream which are common to both jurisdictions including the introduction of waste licensing and permitting system, as well as a consignment note system requiring a unique code for each particular movement of hazardous waste as a system for control for dangerous and difficult to handle wastes.

The management options for waste recovery and/or waste treatment are solely dependent on the nature of the hazardous component of the waste.

In Northern Ireland these options have included:

- **Metal recycling/processing** of non ferrous/ferrous metals, batteries, scrap
- **Recycling and treatment** of waste oils
- **Sewage works** treatment of inorganic chemical processing waste
- **Transfer stations** for paint waste, special wastes, waste solvents, photographic wastes, automotive, organic wastes, clinical wastes (certain categories only) and hydrocarbons
- **Exports to GB**

Healthcare wastes have, in the past, been consigned for incineration however, all these facilities have now closed and healthcare wastes are currently consigned for treatment or sent to GB.

Northern Ireland currently has no hazardous waste disposal facilities in operation as landfilling of hazardous wastes is no longer permitted and therefore all hazardous wastes for disposal are exported. There are problems associated with the present consignment note system for the export of wastes from Northern Ireland to GB.

There is presently no formal mechanism for identification of wastes exported to GB and information is limited on the final destination. There needs to be an improvement in this system in order to extend the available information on hazardous waste.

In the Republic of Ireland, the options for recycling and recovery have included:

- **Metal recycling/processing** of batteries, mercury from fluorescent lamps, steel from oil filters, silver from photochemical waste
- **Recycling and treatment** of waste oils
- **Sewage works** treatment of inorganic chemical processing waste
- **Transfer stations** for waste solvents, photographic wastes, automotive, organic wastes and hydrocarbons, prior to exporting of the wastes for final treatment and disposal
- **Landfilling** for sludges, non lead-acid batteries, paint and ink waste, agrichemical waste, asbestos.

Many of the above facilities are not operating to capacity due to a variety of reasons, including, but not limited to: inadequate collection rates or insufficient take-up of collection services. Notwithstanding that, there is a widespread perception that an all-island approach to the management of some hazardous wastes is appropriate, as evinced for example by the all island contract for fridges/freezers. A key barrier to developing an all island solution at present however is the UK Management Plan on the Import and Export of Waste which at present prevents the movement of waste between Northern Ireland and Republic of Ireland for disposal. There is therefore a strong argument that supports the development of a more open market and creation of a 'level playing field' by having a consistent approach to implementation and enforcement of legislation, to enable all island solutions for both recovery and disposal of hazardous wastes to be implemented, given the limited quantities of hazardous waste generate in total on the island of Ireland.

8.0 CONSTRUCTION & DEMOLITION WASTE

8.1 INTRODUCTION

Construction and Demolition (C & D) Waste is a subgroup of Commercial and Industrial (C & I) Waste and comprises mainly bulky, inert materials such as bricks, concrete, tiles, glass, insulation, gypsum, plastics and metals which are neither biodegradable or suitable for thermal treatment and therefore have historically been disposed of at landfills. Smaller quantities of material such as topsoils, blacktop and wood, also present within this waste stream, tend to generally be reused.

The most significant component of C & D waste, in terms of quantities, is inert material. In general the projects generating these waste materials are medium to large scale, involving a level of control, through the involvement of clients, designers and contractors, who would be seen as part of the mainstream construction and building industries. There is another sector of the construction industry concerned with the building, repair, maintenance and renovation of houses and small buildings. This sector operates on a smaller scale with a much lower level of control. The wastes produced from this source is typically highly variable with inert and active materials mixed together in the same skip.

The Construction and Demolition industry is one of the largest waste producers in Ireland with C&D waste having increased by 35% from 1998 to 2001. Waste Management Changing our Ways (1998) the policy statement by the DoEHLG, sets out a recycling target of 85% by 2013 for C&D waste. Draft Best Practice Guidelines on the preparation of Waste Management Plans for Construction and Demolition Projects have been produced by DoEHLG. These provide guidance on the preparation of construction and demolition waste management plans and provide local authorities, engineers and developers with an agreed basis for the content of C&D waste management plans. Coinciding with these draft guidelines, the National Construction and Demolition Waste Council (NCDWC) launched a Voluntary Construction Industry Initiative in October 2004. This initiative places responsibility on each participant in the construction industry to encourage best practice in waste management by promoting waste prevention, reduction and reuse of materials and recycling (National Construction and Demolition Waste Council, 2004).

In Northern Ireland, there is a widespread practice of using C & D wastes for 'agricultural land improvement'. There is a perception that this practice is being used to simply avoid the proper treatment and disposal of these wastes, and that is having an adverse environmental impact, particularly on wetlands. A Working Group has recently been established to investigate ways to improve the management of these wastes, and is due to report shortly.

8.2 TARGETS

The publication of National policy and regulations, namely the *Changing our Ways* in 1998, *Delivering Change* in 2001 and *Taking stock & Moving Forward* in 2004 in the Republic of Ireland and the Waste Management Strategy in 2000 in Northern Ireland have specified key recycling and diversion targets. The overall targets to be achieved for Construction and Demolition (C & D) wastes in Northern Ireland and the Republic of Ireland are detailed in Table 8.1 below.

Table 8.1 C & D Targets

Northern Ireland	Republic of Ireland
To reduce the amount of Construction and Demolition (C & D) waste landfilled to 85% of 1998 levels by 2005.	To recycle at least 50% of C & D waste within a 5 year period with a progressive increase to at least 85% over 15 years.

In addition to these targets, the Northern Ireland Waste Management Strategy also identified the following actions:

- The Department to establish recycled product specifications for recycled aggregates and metal finish for roads
- Government departments and district councils to integrate requirements for sustainable waste management into all construction and maintenance contracts

8.3 WASTE PLAN IMPLEMENTATION

The Waste Management Plans provide details of the type of infrastructure and number of each facility for the reprocessing of Construction and Demolition (C & D) waste that need to be implemented over the period of the plans in order for the aforementioned targets to be met. Tables 8.2 and 8.5 provide details of the number of facilities projected under the Waste Management Plan along with the current numbers of each facility that have been developed within each region by Local Authorities.

Table 8.2 Implementation of Infrastructure within in the North East Region

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Construction & Demolition Recycling Facility	2	None

Table 8.3 Implementation of Infrastructure within the Connaught Region

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Construction & Demolition Recycling Facility	1 (Galway other areas served by mobile plant)	t.b.c

Table 8.4 Implementation of Infrastructure within the SWaMP Region

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Construction & Demolition Recycling and Disposal Facilities	Materials Recovery Facilities with a total treatment capacity >55,000 tpa. Landfill capacity for C & D disposal for 355,000 tpa reducing to 300,000 tpa by 2005.	t.b.c

Table 8.5 Implementation of Infrastructure within the North West Region

	Infrastructure Requirements Identified	Infrastructure Delivered By 2003
Construction & Demolition Recycling and Disposal Facilities	Materials Recovery Facilities with a total treatment capacity > 35,000 tpa. Landfill capacity for C & D disposal of 245,000 tpa reducing to 210,000 tpa by 2005.	t.b.c

8.4 WASTE ARISING

The estimated C & D wastes arising with the cross-border region are summarised in Table 8.6 below.

Table 8.6 Estimated Arisings of C & D Waste within the Cross Border Region

Region	Tonnes/Annum
SWaMP *	616,448
North West *	430,688
Connaught	201,510
North East **	174,251
TOTAL	1,422,877

* From the Environment Agency C & D Waste Survey 1999 – 2000 for England and Wales, which equates 1.38 tonnes of C & D waste per head of population. Applying this figure allows the following estimates for C & D wastes for each District to be estimated.

** Landfill Surveys 1998, National Waste Database 1995, Questionnaire Surveys 1998, North East Waste Management Strategy Study, Draft Report, May 1999.

The data confirms that this represents the single largest waste stream within the region. However, there is a low level of confidence in the data, and a belief that they represent a significant underestimate due to unreporting of a proportion of C & D wastes, which are managed and disposed of outside the formal systems of control.

8.5 MANAGEMENT SYSTEMS

The collection of C & D Wastes for recycling or disposal is usually managed locally due to the bulky nature and weight of the wastes and the logistics and costs involved in transporting this type of material long distances for disposal. The issue of transportation therefore needs to therefore be taken into consideration when developing treatment facilities for C & D wastes.

The disposal or recycling/reprocessing of C & D wastes depends upon the classification of the wastes as either inert, non-hazardous or hazardous. Management of inert C & D wastes can either include re-use on or off-site, recycling on or off-site, disposal to licensed landfill or used for land improvement. Management of non-hazardous C & D wastes can either include re-use on or off-site, recycling on or off-site or disposal to licensed landfill. Only two options exist for C & D wastes classified as hazardous these are disposal to hazardous landfill or treatment to remove the hazardous component.

It is recognised that at present reliable data on the quantities of C & D waste produced is limited, therefore the tonnages of C & D Wastes being recorded is an underestimate of that which is being produced, as noted above. The construction industry, including designers and contractors/builders, has a key role to play to ensure that the aforementioned targets are met. Data management systems need to be developed to ensure that the nature and quantities of waste arisings are recorded, along with the management options adopted to ensure traceability and the availability of reliable and accurate data and allow for future planning.

It has already been recognised (The Royal Town Planning Institute in Ireland, 2002) the important role that the planning system can play in raising awareness of good C & D waste management practices, and encourage designers to minimise the quantities generated in the first place, and incorporate recycled materials where appropriate in the specifications. It has been suggested therefore that guidance documents should be made available to assist local authority planners in implementing appropriate waste management measures in developments.

It has also been recommended in both Northern Ireland and the Republic of Ireland that Construction and Demolition Waste Plans should become a standard requirement of a planning application for developments exceeding a certain threshold. These should be complemented with the Best Practice Guidelines on C&D Waste Management Planning.

It has also been proposed that Waste Prevention and Management plans should be prepared for major infrastructure projects, with public sector clients including it as a contractual obligation, but with contractors encouraged to adopt it as a matter of good practice.

PART III
OPTIONS, ISSUES & OPPORTUNITIES

9.0 OPTIONS ASSESSMENT

9.1 INTRODUCTION

It is a fundamental requirement of the Waste Framework Directive for EU Member States to provide an integrated network of facilities for the management of the wastes arising within the State.

This is an obligation on Ireland and the United Kingdom as Member States, but Northern Ireland has also accepted the same obligation through the Northern Ireland Waste Management Strategy.

The question arises therefore as to what constitutes an integrated network of facilities, both on the island of Ireland and within the cross-border region. Any such network of facilities needs to be designed so as to not only meet statutory obligations, but also to:

- Contribute to the competitiveness of the economy and businesses through the provision of cost effective, sustainable waste management facilities and services.

Economic efficiency is a key consideration in today's globally competitive market, not only for businesses, but for the public as well, who deserve to be provided with cost-effective services.

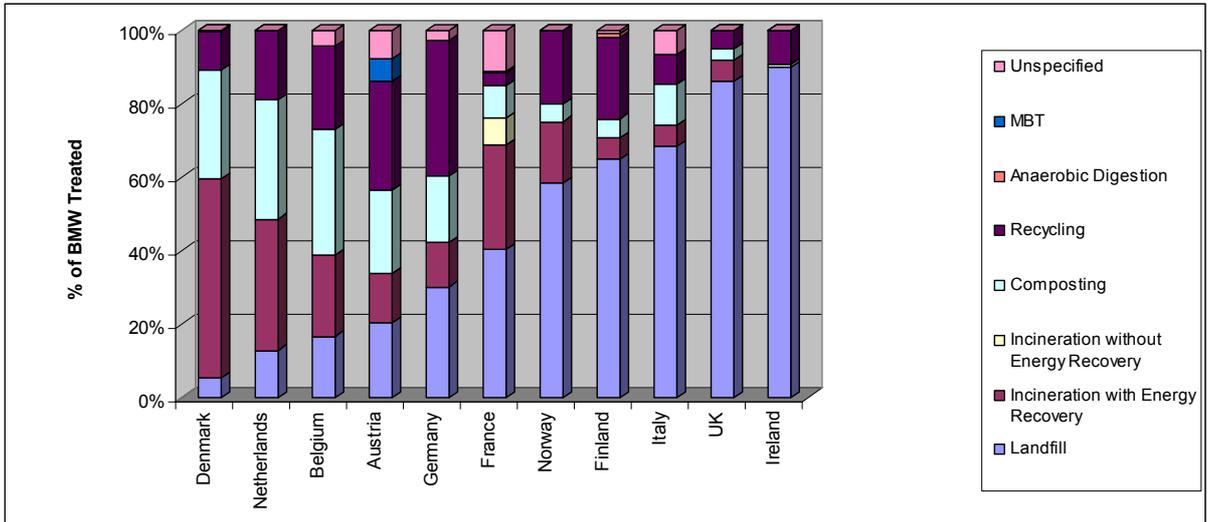
9.2 AN INTEGRATED APPROACH

An integrated approach to the management of wastes implies the development of a range/mix of technologies reflecting the waste management hierarchy. However, it can be seen from the review of data and systems that wastes management practices differ widely across the region. In some areas, for example source-separated collection is widespread, and in others waste does not appear to be collected.

Against this background, it is appropriate to consider the practices elsewhere within the EU, so that any lessons can be learnt for the future development of an integrated network of facilities and the provision of services. In general terms EU experience suggests that the provision of waste management infrastructure is founded on the facilities required to manage municipal wastes with the management of other specific waste streams building upon this network of facilities. It is considered appropriate therefore for the purposes of this assessment to review municipal waste management practices, and in particular Biodegradable Municipal Waste, given the imperative of the Landfill Directive targets.

The European Environmental Agency (EEA, 2002) has surveyed the management of Biodegradable Municipal Waste in a number of Member States. Figure 9.1 provides an overview, for the most recent year for which reliable data was available, of BMW waste management practices in the countries surveyed.

Figure 9.1 EU approach to treatment of BMW

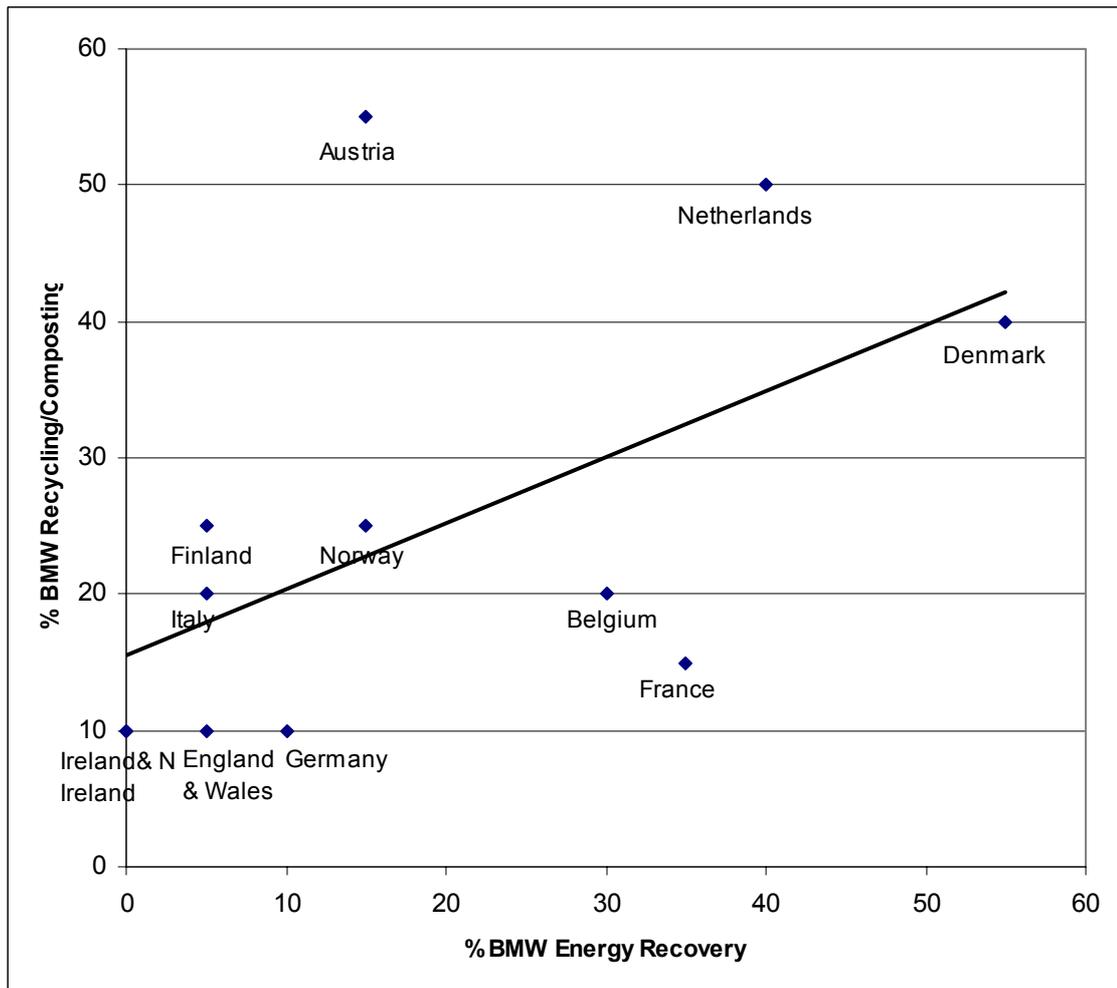


Source: European Environment Agency 2002

This data gives a good indication of the mix of technologies and practices applied. What is evident is that those countries that have a low reliance on landfill employ a mix of technologies, including incineration, composting and recycling to treat the wastes produced. For those countries that have a high reliance on landfill, such as Ireland and the United Kingdom, incineration (with or without energy recovery) is either very limited or absent.

The relationship between incineration and recycling/recovery is further illustrated in Figure 9.2. This demonstrates the relationship between incineration with energy recovery and recycling/composting, demonstrating that the two methods of treatment are not incompatible. In general terms, the evident trend is the higher the level of recycling/composting, the higher the level of incineration with energy recovery. In terms of functionality, the objective appears to have been to maximise the levels of recycling and recovery as far as practicable, with thermal treatment for the residual waste, in preference to simply landfilling it.

Figure 9.2 Relationship between Incineration with Energy Recovery and Recycling/Composting



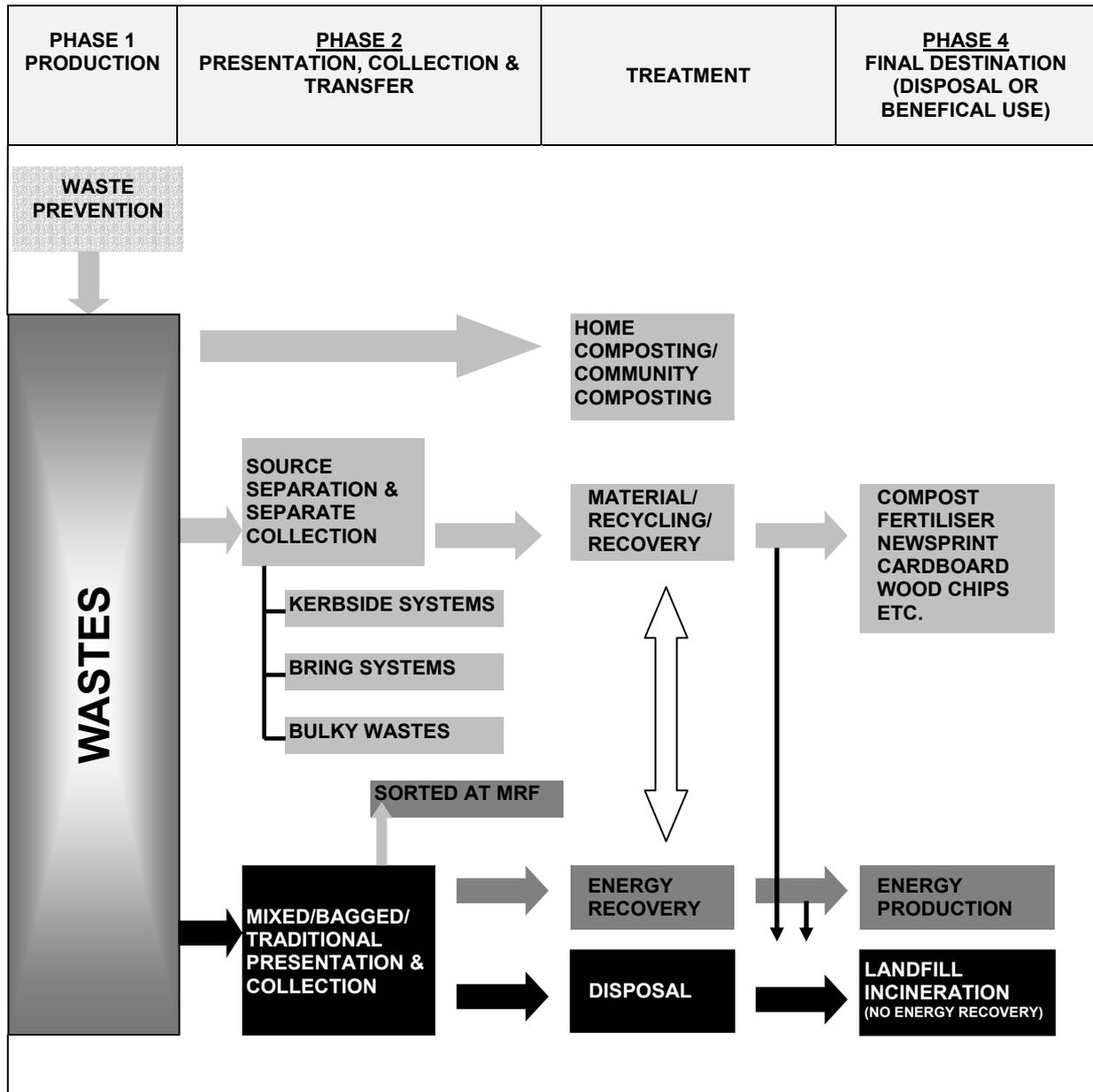
The survey also established that those countries that divert high levels of materials from landfill have adopted a range of instruments and practices in order to maximise materials and energy recovery.

These include:

- Source separated collection
- Fiscal instruments e.g landfill levy/taxes
- Home composting
- Restrictions on quantities of BMW to be landfilled
- Programme of information provision, and raising and reinforcing awareness

To understand this, it is useful to consider the typical flow of waste materials, as illustrated schematically in Figure 9.3.

Figure 9.3 Summary of Flow Chart for Biodegradable Municipal Waste¹



Note 1: Adapted from Report by the European Environment Agency (2002)

The flow can be considered in four specific phases as follows:

- **Phase 1 – Production:** This requires a comprehensive understanding of the wastes produced. It is also the point of intervention for successful waste prevention and minimisation measures. Relevant measures therefore include: awareness and education programmes; reduction and re-use initiative; and waste composition analyses and survey.
- **Phase 2 – Presentation, Collection and Transfer/Movement of Waste:** This phase is of critical importance because of the scope for controlling wastes entering the waste cycle through control of how it is presented. How the waste is collected has a profound impact on what treatment options are realistically available.

- **Phase 3 – Waste Treatment:** This consists of the treatment options available for managing the wastes collected and transferred to the treatment facilities.
- **Phase 4 – Materials and Energy Recovery or Disposal:** This phase marks the end-use or disposal of the materials. Key issues relate to the markets and outlets that are available for the materials and/or energy recovered, and the disposal of the residues.

Table 9.1 provides an overview of the strategies and approaches appropriate to intervene or support each of these phases.

Table 9.1 Summary of Instruments, Programme and Issues

Phase	Instruments, Programmes and Issues
1. Waste Production	<ul style="list-style-type: none"> ▪ Awareness and Education Programme ▪ Reduction and Re-Use Initiatives ▪ Waste Surveys and Composition Analyses
2. Presentation, Collection and Transfer of Wastes	<ul style="list-style-type: none"> ▪ Source separated collection: <ul style="list-style-type: none"> ~ Materials collected ~ Size and type of container ~ Frequency of collection
3. Waste Treatment	<ul style="list-style-type: none"> ▪ Availability of a range of treatment re-processing capacity options ▪ Restrictions on types/quantities of wastes to be landfilled ▪ Landfill Levy/Tax
4. Recovery and Disposal	<ul style="list-style-type: none"> ▪ Markets Development <ul style="list-style-type: none"> ~ Materials specifications and uses ~ Renewable energy contribution ~ Local markets

In summary therefore it is evident from the review of EU waste management practices that an integrated network of facilities provides for the full range of technologies, including:

- Materials recovery through recycling
- Biological treatment of organic and green wastes
- Thermal treatment with energy recovery
- Landfill disposal

Over and above this it is equally evident that it is not sufficient just to provide facilities. A range of instruments and measures need to be used to control or divert the flow of materials to ensure that the wastes are treated by the appropriate technologies in such a manner that the mix delivers the required policy objectives. This is consistent with the waste management hierarchy, on which EU waste policy is firmly based.

9.3 CURRENT PROVISIONS WITHIN THE WASTE MANAGEMENT PLANS

The review of EU practices has established the key features of an integrated approach to waste management. It is against the background that the provisions within the waste management plans, and supporting legislation have been compared to assess whether the essential building blocks necessary to delivery an integrated and more sustainable approach are in place. These are summarised in Table 9.2.

Table 9.2 Relationship between the Waste Hierarchy and Waste Treatment Technologies

Waste Hierarchy	Phase	Technologies/ Programmes	Proposals in Waste Management Plans					
			SWaMP	North West	Arc21	Donegal	North East	Connaught
Prevention Reduction Reuse	1. Waste Production	Education and	✓	✓	✓	✓	✓	✓
		Awareness	✓	✓	✓	✓	✓	✓
		Programmes ¹	✓	✓	✓	✓	✓	✓
		Surveys and Analyses ²	✓	✓	✓	✓	✓	✓
Recycling and Composting	2. Collection	Source Separated Collection ³	✓	✓	✓	✓	✓	✓
		Landfill Levy / Tax	✓	✓	✓	✓	✓	✓
	3. Treatment	MRFs, Windrow and In- Vessel Composting	✓	✓	✓	✓	✓	x
Mechanical and Biological Treatment (including AD)		x	x	✓	x	✓	x	
Incineration Gasification/Pyrolysis		x	x	✓	x	✓	✓	
Energy Recovery	4. Recovery and Disposal	Markets Development	✓	✓	✓	✓	✓	✓
		Landfill	✓	✓	✓	✓	✓	✓
Disposal								

Notes:

1. This includes the Race Against Waste, Wake up to Waste and the Cross Border Waste Awareness Campaign, as well as local authority interaction.

2. Surveys and analyses include the systematic collection and reporting of data.

3. Source separated collection also includes the collection of materials at bring sites.

It is evident from the above that, in principle, the essential building blocks are in place in the cross-border region. The measures, programmes and facilities are at differing stages of development and implementation, and it will take time therefore until a fully integrated approach evolves. It is also clear that a number of key decisions will need to be taken to re-affirm proposals set in the current Waste Management Plans, and to fill in some of the apparent gaps.

The development of an integrated network of facilities is further illustrated in Figures 9.4 and 9.5, which show the networks of facilities at the time of preparation of the Waste Management Plans, and as proposed in the Plans. This demonstrates the mix of technologies that are scheduled to be available within the Region for the treatment of municipal wastes but which will also therefore be capable of treating other wastes streams as well.

This mix includes, thermal treatment, in the form of incineration with energy recovery, which is recognised in three of the six plans, at present. None of the analyses set out in any of the plans indicate that the medium to longer term Landfill Directive targets can be met without the provision of such (or similar) technology. Thermal treatment with energy recovery also offers potential benefits in terms of district heating which increases the efficiency of such plants significantly. It is recognised however that there are also concerns over the performance and impact of such facilities. The approach adopted for the proposed thermal treatment plant at Ringsend in Dublin therefore is considered to be an example of best practice with respect to stakeholder and community consultation, a model that could usefully be followed elsewhere.

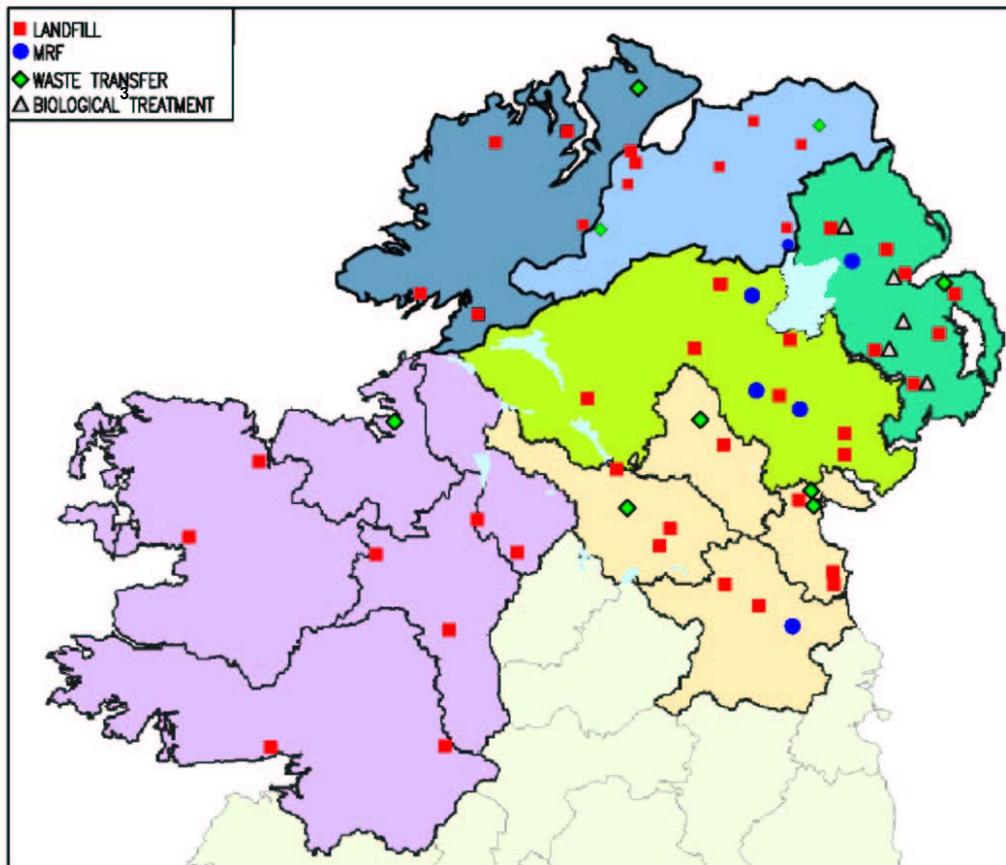
Mechanical Biological Treatment is also an emerging technology with two elements, namely a mechanical and a biological treatment component. For the purposes of this assessment, it is interpreted broadly, and is deemed to include, for example, treatment of residual waste through an anaerobic digestion plant (with an element of screening) or through a dirty Materials Recovery Facility, both of which will serve to increase the recovery of materials.

In this regard, it should be noted that the Department of the Environment in Northern Ireland, at a conference on 21 January 2005 announced the results of their Best Practicable Environmental Option (BPEO) Assessment for 2010, which comprised:

- Three bin source separated collection
- 35% minimum recycling and composting (by treatment at destination)
- Mechanical Biological Treatment of a proportion of the residual to meet the Landfill Directive Targets and as a pre-treatment to landfill.

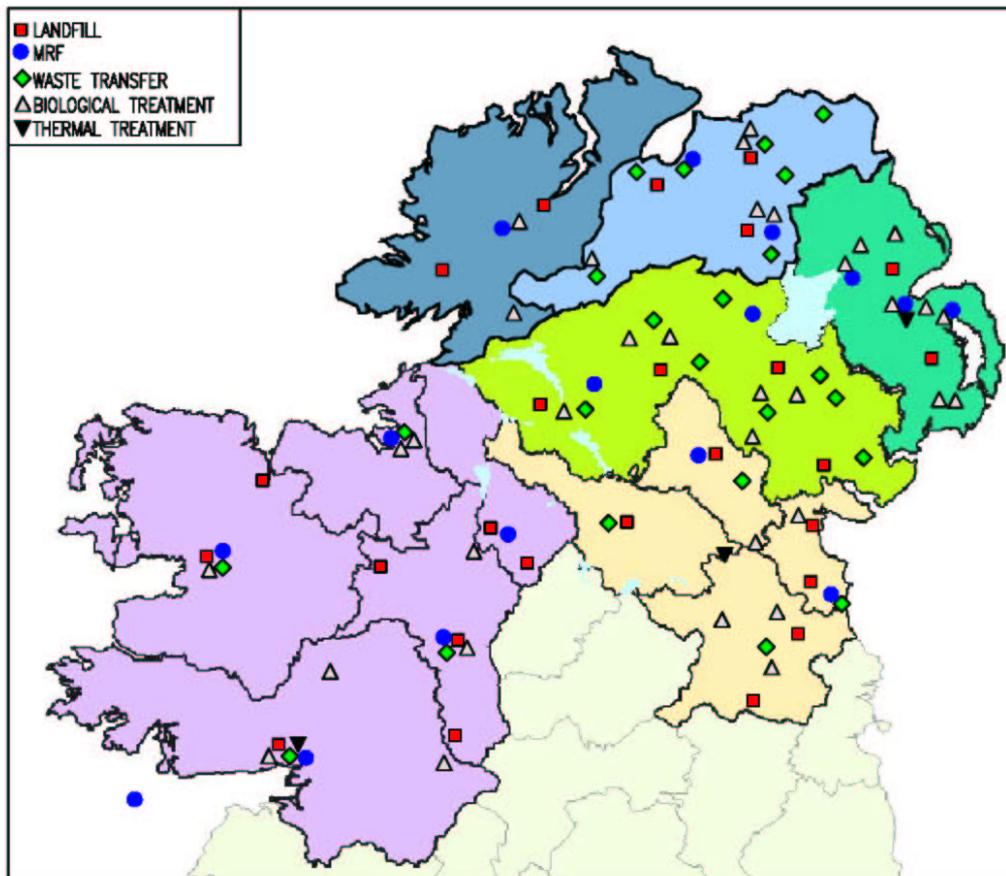
The requirements for BPEO for the 2013 and 2020 targets are due to be announced by the summer, with the interim indication being that incineration with energy recovery will be required. These long lead in times are being provided in recognition of the timescales involved to negotiate the procurement, planning and licensing process.

Figure 9.4 Existing Network of Municipal Waste Facilities¹



- Notes:
1. At the time of preparation of the Waste Management Plans
 2. Map is for schematic illustration purposes only
 3. Biological treatment facilities include in-vessel and windrow composting and anaerobic digestion

Figure 9.5 Proposed Network of Municipal Waste Facilities¹



- Notes: 1. As identified in the current Waste Management Plan
2. Map is for schematic illustration purposes only

In summary therefore, an integrated network of facilities will include a mix of technologies, as already provided for within the current Waste Management Plans. The likely scale of such facilities is summarised in Table 9.3.

Table 9.3 Treatment Facilities and Scale

Treatment Facility	Likely Scale of Facility
Transfer Stations	Local ¹ / Sub-Regional ²
Materials Recovery	Sub-Regional ² / Regional ³
In-Vessel Composting	Sub-Regional ²
Windrow Composting	Local ¹ /Sub-Regional ²
MBT Plant	Sub-Regional ² / Regional ³
Thermal Treatment/Incineration with Energy Recovery	Regional ³
Landfill	Sub-Regional ² / Regional ³

Notes:

1. Local refers to an individual Council area.
2. Sub-Regional refers to a sub-division of the waste planning groups.
3. Regional refers to waste planning group area.

9.4 CAPACITY REQUIREMENTS AND TECHNOLOGY OPTIONS

The waste management plans set out implementation action plans to ensure that statutory targets are met. As highlighted within this report this has included for the development of key infrastructure to provide sufficient treatment capacity. The following table highlights the potential capacity requirements for 2010 identified by the National Overview of Waste Management Plans published by the Environmental Protection Agency in 2004 (EPA, 2004), and the 2003 Annual Reviews by SWaMP , the North West Group and arc21.

Table 9.4 Potential Treatment Capacity Requirements in 2010

	Total Arisings (tonnes)	Recycling /Composting (tonnes)	Thermal/ Alternative Treatment (tonnes)	Landfill (tonnes)
SWaMP	319,169	77,042	63,178	173,033
North-West	228,787	39,159	63,430	189,628
Donegal	61,000	14,000	38,000	9,000
North-East*	280,000	108,920	159,880	11,200
Connaught	415,000	185,090	218,075	11,205
Total	1,303,956	424,211	542,563	394,066

Notes:

1. Annual Review of NI WMPs.
2. National Overview of Waste Management Plans (EPA, 2004).

The range of waste treatment technologies available to treat MSW are summarised in Table 9.5. This includes an indication of the outputs produced by the process. The capacity of these plants, and hence the costs of processing wastes, vary widely.

Table 9.5 Waste Treatment Technologies

Technology	Outputs
MRF¹	Segregated recyclables that are balled for reprocessing.
Windrow Composting (of green wastes only)	Compost
In Vessel Composting	Compost
Anaerobic Digestion	Biogas- a methane rich gas which can be used as a fuel. Residual material, a fertiliser compost residue, has the potential to be sold as a soil fertiliser.
Autoclaving	An organic fibrous material which has a number of potential uses: <ul style="list-style-type: none"> ▪ Gas Conversion ▪ Refuse Derived Fuel (RDF) ▪ Compost & Gas ▪ Wood Substitute.
Mechanical Biological Treatment	Segregated recyclables that are balled for reprocessing. <ul style="list-style-type: none"> ▪ An organic fibrous material which can be used as a RDF
Gasification & Pyrolysis	Hydrocarbon gases (syngas to be used as a fuel) Hydrocarbon liquids (oils) Char (carbon black & ash)
Incineration (Waste to Energy)	Heat from incineration process is used to produce steam, which drives turbines and can be used to generate electricity. This can be used at the plant or as a saleable product.
Landfill	Landfill Gas Leachate

Note : 1. North West Waste Management Group

The Waste Management Plans provide an indication of typical capacities considered appropriate to their region. In general terms, the biological treatment and material recovery facilities tend to be smaller within the cross-border compared to the larger-scale facilities that can be seen throughout Europe. The net result is that small-scale facilities that do not maximise the economies of scale are likely to cost more to process the waste on a £/€ per tonne basis than larger plants. This in turn raises the issue whether the Waste Management Plans at present have optimised the scale and distribution of facilities within the region to deliver the most economically sustainable solutions, an aspect therefore that needs to be considered in the review of the Plans.

Table 9.6

Facility	Indicative Capacities (tpa)					
	SWaMP	N West	ARC21	Donegal	Connaught	N East
MRFs	5,000 – 15,000	5,000 – 15,000	20,000 – 40,000	7,000 – 15,000	13,000 – 15,500	8,000 – 25,000
Dirty MRFs			50,000 – 100,000			
Open Windrow Composting	2,500 – 4,000	2,500 – 4,000		2,000 – 20,000	11,000	6,500
In-Vessel Composting	> 5,000	> 6,000				
Anaerobic Digestion			50,000 – 70,000		15,000	23,500
Thermal Treatment			75,000 – 500,000	40,000 – 90,000	185,000	216,000

In summary therefore, the options assessment has identified that by 2010 (and 2013) additional requirements for the management of municipal wastes will require the provision of waste treatment facilities for:

- In-vessel composting
- Mechanical biological treatment
- Thermal treatment

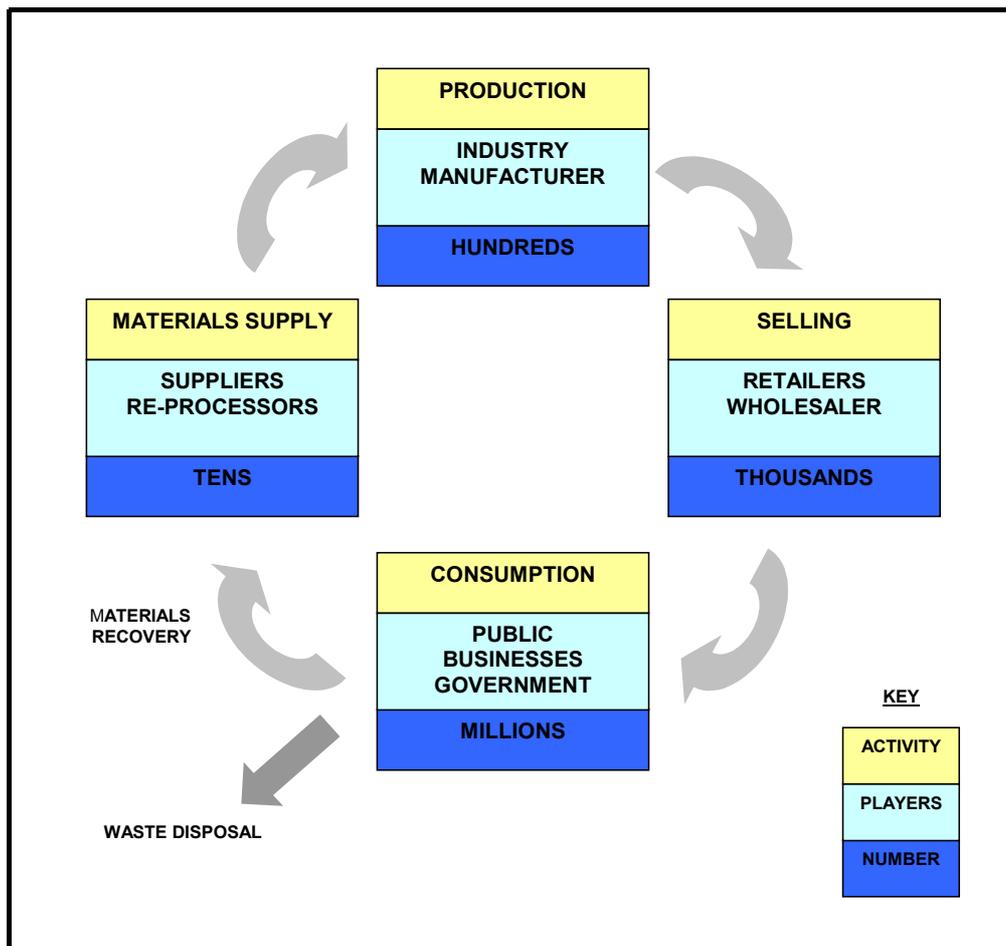
The scale, location, capacity and cost of these facilities are properly within the scope of the review of the waste management plans. Further comment on such issues therefore is not appropriate for this assessment.

9.5 RESOURCE RECOVERY AND STAKEHOLDERS

One further aspect that merits highlighting is that an effective resource management approach requires an appreciation of the flow of materials, and the generation of waste at each stage in the life cycle of a product. The fundamental challenge is to minimise the quantities of waste produced, and maximise the recovery of materials and energy from those wastes that are generated.

To maximise the recovery of materials requires the engagement of all players. The challenge that this represents can be illustrated by considering the life cycle of a product from the perspective of the role and number of players involved at each key stage in the cycle, as illustrated in Figure 9.6

Figure 9.6 Product Life Cycle



Source: Amended from IBEC-CBI Study, 2004

The numbers of players involved at each stage in the cycle gives some indication of the potential logistical challenges associated with the recovery of materials. This is particularly true for the post-consumption stage, where the materials need to be collected from a very large number of players/waste producers and concentrated back into a limited number of re-processors.

This highlights the importance of how waste materials are presented for collection, and the key role the Waste Management Plan has in developing an integrated approach to the collection of materials for re-processing, on a cross-border sectoral basis. Fundamental to this are effective communications, information and awareness programmes, designed to engage stakeholders and win their support and participation, building upon those that have already been initiated within the Region.

10.0 KEY ISSUES

10.1 INTRODUCTION

In considering the issues associated with waste management in the cross-border region it is perhaps worthwhile noting the wider control provided by previous initiatives which include:

- **The 'political' context:** with waste management, along with a range of other areas, being signed up as an area for joint co-operation by the British and Irish Governments under the terms of the Belfast Good Friday Agreement.
- **The 'economic' context:** with the work of IBEC-CBI Joint Business Council culminating in their published report entitled 'Waste Management in the InterReg Cross Border Region from an SME Perspective'. This focussed on identifying issues critical to enhancing the competitiveness of business on the island, and the development of business co-operation within the island of Ireland.

From these high level perspectives therefore it is apparent that in principle there is a belief that co-operation on waste management in the cross-border context can provide mutual benefits for all communities on the island of Ireland, and is to be supported.

On the other hand, whilst there are these high level drivers supporting cross border co-operation in waste management, it is not clear that there are the same drivers on the ground. For example, the consultations indicate that there is a certain 'stigma' attached to the movement of wastes, both cross border and between the regions, perhaps seen as giving an indication that a region cannot manage its own wastes effectively. Therefore there is a perception that it can often be easier to develop collections and facilities on a 'stand alone' basis within an area, rather than seek to expand or be reliant on others within the Cross Border Region.

This Study therefore has focussed on identifying the real issues at the 'coal face' through a series of consultations with Local Authorities, the waste management sector and businesses in the cross border region. The Study has also been informed by feedback from consultations and discussions undertaken as part of the waste planning review process. There has therefore been a wide source of views, supported by analysis of data, that has culminated in identifying the key issues that impact on the management of wastes in the Cross-Border Region.

10.2 LANDFILL COSTS AND ITS IMPACTS

Landfilling is the least desirable waste treatment option and also, in many respects, the least acceptable to communities. It does however remain at present as the dominant technology within the region. The costs of landfill are known to fluctuate widely and this is illustrated in Table 10.1. In the Republic the landfills in the Region at present are typically owned and operated by local authorities.

Table 10.1 Landfill Costs within the Cross Border Region

	Average Gate Fee	Landfill Tax	Total
SWaMP ¹	(€ 50) £35	(€ 21) ² £15	(€ 71) £50
North West ²	(€ 53) £37	(€ 21) ² £15	(€ 74) £ 52
North East*	€117 (£81)	€15 (£10) ³	€132 (£91)
Connaught*	€126 (£87)	€15 (£10) ³	€141 (£97)
Donegal*	€126 (£87)	€15 (£10) ³	€141 (£97)

Note: 1. SWaMP Pers Comm.

2. NW Pers. Comm

3. RPS-MCOS Pers. Comm

Figures are subject to a conversion from Euro to £ Sterling by a rate of 0.7 and rounded to the nearest € or £.

It is evident from Table 10.1 that gate fees in Northern Ireland are significantly lower than in the Republic of Ireland. There is a widespread perception that the high gate fees in the Republic do not reflect the true cost of landfilling. Rather, the high costs are attributable to other factors including:

- Deterrence to waste tourism
- Revenue raising to support other council activities
- Generation of funds to pay for remediation and closure, following previous under-investment at sites
- Lack of competition between facilities

It is also apparent that with these high gate fees, the landfill levy, as an economic instrument, is a relatively minor factor given its low proportion, about 10%, of the total gate fee.

In Northern Ireland, on the other hand, there is both public and private sector involvement, resulting in lower gate fees, as a result of this competition. These sites also generally tend to be modern engineered landfill sites, opened relatively recently. Hence, these costs are seen as more accurately reflecting the true cost of landfill disposal. On the basis of this comparison therefore there is significant scope for the costs of landfill in the Republic to be driven down through efficiencies and economies of scale, which is likely to be triggered as the private sector plays an increasingly greater role in developing and operating disposal facilities.

The relatively high costs of waste management in the Region is further reinforced by a comparison of waste disposal costs elsewhere in the UK, as illustrated in Table 10.2.

Table 10.2 Summary of CBI Survey of Waste Disposal Costs across the UK (2002)¹

Waste	NI	N East/ Scotland	N West England	W Midland	S East England	S West England
C & I	£28 (€ 40)	£9 - £15 (€ 13 - € 21)	£10 - £12 (€ 14 - € 17)	£8 - £10 (€ 11 - € 14)	£14 - £18 (€ 20 - € 26)	£8 - £10 (€ 11 - € 14)
Special	£200 (€ 286)	£15 - £18 (€ 21 - € 26)	£15 - £18 (€ 21 - € 26)	£15 - £18 (€ 21 - € 26)	£23 - £25 (€ 33 - € 36)	£23 - £25 (€ 33 - € 36)

Note: 1. These gate fees exclude landfill tax and VAT

The cost of landfill in Northern Ireland is again relatively higher than in the rest of the UK. This reflects to quite a large degree, the benefits of economies of scale but it also reflects the fact that quite a number of sites in the UK are in old clay pits. These costs therefore are expected in general to rise to about £25/tonnes (excluding landfill tax) as the older generation sites are phased out. This may also be a factor in Northern Ireland, when the Dargan Road Landfill site at Belfast closes in 2006. At present, its gate fees are relatively low to attract greater quantities of waste to facilitate its shaping and closure. On the other hand, additional sites in the Belfast area are likely to receive planning permission shortly. As private sector facilities, competition will increase. Therefore, increases in landfill disposal costs, whilst expected, are likely to be limited. The costs of landfill disposal, and hence the cost of waste management services in both Northern Ireland and the Republic of Ireland are relatively high, which reinforces the importance of providing competitive cost effective services to enhance the competitiveness of the economies on the island.

The high landfill costs in the Republic of Ireland also have two other impacts. Firstly they act as a significant driver for perverse behaviour as people seek to avoid the high charges. Evidence of this is provided by the illegal dumping not only in the cross-border region, but also in Wicklow, for example.

This therefore is not an issue about the flow of materials from a high cost to a low cost environment, but simply about cost avoidance, with cross-border disposal being used as a confounding factor for the regulatory authorities.

The second consequence of the high landfill costs is its influence on promoting recycling and recovery. There is no doubt that recycling within the Republic of Ireland is driven to a large degree by the high disposal costs. There is however a real possibility that, with increased private sector involvement in the operation of landfill site, gate fees will be lowered due to increased competition. As a consequence, recycling and composting rates could be adversely affected if lower cost disposal becomes an option.

10.3 CROSS-BORDER MOVEMENT OF WASTES

EU Issue

The cross-border movements of wastes is an issue across the EU. Indeed it is worth noting that a recent project by the European Union entitled Seaport Project 1 estimated that 20% of transfrontier waste shipments in Europe between spring 2003 and summer 2004 were illegal.

History

The cross border movement of wastes is not a recent issue within the Region. Historically, the movement of wastes across the border has been very much based on local needs and local solutions. This is perhaps best illustrated by the historic movements of wastes, for example, between Derry in Northern Ireland and Donegal in Republic of Ireland, which was seen as mutually beneficial, but has now ceased as a practice.

Administration and Paperwork

Another aspect of the cross-border movement of wastes is the paperwork and costs associated with it. TFS Notes are issued by Local Authorities prior to waste movement, many service providers described problems that they have faced with this system, which include a lack of uniformity in the forms between Local Authorities who issue the TFS notes, and also the time that it takes to process applications. There is therefore the potential in the Republic of Ireland for Local Authorities to develop a template that is used by all authorities to provide consistency.

Costs of Shipments

A key concern raised is also the costs associated with the transfrontier shipment of wastes. Firstly, there are differences in fees that have to be paid for the issue of TFS Notes in different Local Authority areas in the Republic. In Northern Ireland, historically transfrontier shipment has been the responsibility of district councils, but typically fees have not been charged.

However, with responsibility shifting to DoE Environment and Heritage Service, fees will be levied, and there are concerns as to their level. Fees of the order of £450 per consignment note and £20 per load are under consideration. Such charges would add significant costs to the movement of recyclates for re-processing, creating a barrier to movement and adversely affecting the competitiveness of those businesses involved in re-processing materials, using waste from both Northern Ireland and the Republic of Ireland, particularly SME's.

An additional cost issue is that TFS Notes also require the provision of a bank bond to cover the cost of any potential problems that may arise following shipment. Service providers have noted that these can be difficult to obtain and any minor changes in the shipment will require changes to be made to the bank bond which can be a difficult process. They would therefore support changes in this process such as a bank bond being required on a company basis rather than for each shipment.

Waste companies within Northern Ireland where the TFS charges are going to be standardised (and increased) also see this as a significant disincentive to cross border co-operation. These additional costs makes them less competitive and in some cases have 'knocked them out of the market'. There is feeling that this works against the ethos of the proximity principle and the promotion of recycling of materials within the cross border region.

Provision in Waste Management Plans

Under current legislation, the control and movement of wastes across international boundaries is controlled by the Transfrontier Shipment of Wastes Regulations in the Republic of Ireland, and by the UK Import and Export Plan in the United Kingdom/Northern Ireland. The UK requirements precludes the exporting of wastes for disposal outside the United Kingdom, but does permit the export of materials for recycling and recovery. Strictly however such movements should be recognised with the respective Waste Management Plans. At present only the SWaMP, Donegal and North West Plans make provision for such movements of waste. It is suggested therefore that the review of the Plan be used as an opportunity to incorporate appropriate provisions to permit the movement of wastes cross border and between the regions, where appropriate and beneficial.

It should also be noted that CBI-IBEC strongly support the movement of waste (in a controlled and regulated environment) between waste planning groups and cross border as an essential element in developing an effective and competitive market. In fact in April 2004, the Irish Government announced that guidelines limiting the acceptance of waste at facilities from within their own region would be reviewed, following lobbying by the waste industry.

Sham Recovery

Sham recovery is the processing of wastes for materials recovery, in a lower cost disposal environment, where disposal of a significant proportion of the material is the result. This is both a loss of resource and if it is a cross border shipment, the disposal of materials represents a lost revenue through landfill tax/levy to the jurisdiction of origin. Anecdotal evidence suggests that there is an issue with 'sham recovery' in the cross border region, with waste transported from the Republic of Ireland to Northern Ireland for the purposes of recycling, but with much of the material allegedly landfilled. This reflects a desire to avoid the high cost of disposal in the Republic of Ireland, albeit by a 'legal' route, where the question of how much is landfilled and how much is recovered is left to the operator of the facility. The waste industry and local authorities both appear to support the provision of clear guidance on sham recovery, augmented by the inclusion of a strong audit trail, quantifying the amounts recovered and disposed of, as a contractual/regulatory reporting requirement.

10.4 CONTROL OF THE HOUSEHOLD WASTE STREAM

There is an interesting contrast within the cross-border region as to level of control over the household waste stream that can be exerted by local authorities. In Northern Ireland all district councils collect the household waste, directly from the household, augmented by civic amenity sites and bulky waste collection services. This level of coverage of the collection service is driven primarily by the view that the collection of waste is first and foremost a public health issue. There is also a shift towards service contracts with the private sector for recycling, re-processing and disposal. Under this approach, there is competition and contractual obligations over defined periods of time, so there is effective control by councils over the household waste stream in Northern Ireland. The only area where direct competition does not exist is in collection, where the councils provide the collection service themselves, but costs are monitored and assessed by the Local Government Auditor.

In the Republic of Ireland, very different approaches exist. These range from collection by the councils from the households, for example within Galway City, to private sector collection using a 'tag-a-bag/bin' system, to areas where households either do not have, or do not avail of a household waste collection service. What is clear however within the region is that where councils have effective control of the household waste stream the highest recycling and composting rates are achieved.

This issue of the extent of collection of household wastes raises a number of potentially significant issues, ranging from public health, animal health and environmental protection to compliance with the Landfill Directive Targets. The reason put forward for the non-collection of these household wastes is exclusively one of costs. It is seen as not economic to provide a collection service in some areas.

In contrast, in what are geographically as remote areas in parts of the Sperrins in Northern Ireland, or indeed the Highlands of Scotland, waste is collected from every household. The non-collection of wastes also raises potentially issues of equality and social deprivation.

In the Republic of Ireland essentially a free market operates for the collection of household wastes, where councils have withdrawn from the service, with private companies collecting from, and being paid directly by the household for lifting the waste. These waste companies are also typically involved in the collection of commercial wastes, so household is only part of the wastes they handle. However this market-led approach raises a number of issues including:

- **Security of the Service:** The companies are under no obligation to collect and could withdraw at any time. The system therefore is vulnerable in principle, and if the private sector did withdraw, councils would have to step in.
- **Security of Supply:** The companies do not have medium to long-term contracts in place, that they can use to raise major investment from financiers and banks.
- **Provision of Infrastructure:** This is developing in two ways, each of which has difference implications. With one model the local authorities develop and operate the infrastructure, and in the other, private sector develop and operate the infrastructure.

There are therefore fundamental issues to be considered in this context about the extent of the coverage of collection from households. The non-collection of wastes represents a resource lost, but if the coverage is extended and more waste is collected, this will have significant implications for compliance with the Landfill Directive Targets, and the predicted capacity of treatment plant. This is an issue for the review of the Waste Management Plans.

With respect to the security of the household waste collection service, there is an argument that as councils would have to step in if the private sector withdraw they should at least have control in principle over the overall collection arrangements. Some suggestions as to the mechanism to provide control include:

- **Control of the revenue stream**, so that it can be used to introduce competition and contractual obligations on performance, through tendering and procurement. In return this would give the private sector the confidence to invest in plant and equipment for the future.
- **Regulation and direction**, including coverage over geographic areas through licensing and/or bye-laws.
- **Households to hold a 'waste licence'**, similar in principle to a television licence, that would be issued by waste collectors to cover a defined timescale.

This clearly is a fundamental issue, that will need to be addressed if the present vulnerabilities in the system are to be addressed. What is equally clear is that the private sector has and will continue to have, a key role in the collection of household waste in the cross-border region.

A further aspect also relates to the development of infrastructure. Again this is an issue primarily in the Republic of Ireland, and will have a significant influence, on how the market develops. In some areas, the local authority is operating the waste treatment facility, for example a landfill site, and the private companies simply collect the waste and transfer it to the site. They all pay the same gate fee, and therefore they compete essentially on the efficiency of their collection services, and in some areas collectors are content with this arrangement. Under this scenario, there is likely to be some consolidation in the market, but costs will be constantly under pressure due to the ease of entry for new players into such a market.

The alternative scenario is where private companies develop the infrastructure and also provide the collection service. As infrastructure is essentially provided for through a capacity management approach, the number of facilities will be limited. Such players therefore will be in a very dominant market position, and concerns have been expressed that there is the potential to create monopoly or oligopoly situations in some areas through differential charging to other customers/collectors.

The issue of effective control by local authorities over the collection of household waste, and the extent of coverage of collection services within the Republic is potentially significant in terms of forward planning and in securing long term contracts for the collection, treatment, reprocessing and delivery to end markets of waste materials, to ensure compliance with targets. Clearly the private sector have a key and central role to play, so this is an issue that needs to be considered by both central and local government, in conjunction with the industry, to ensure that the necessary framework continues to evolve so that mechanisms are put in place to both incentivise the private sector, and guarantee, as far as possible, that Ireland can meet its wider obligations.

10.5 END MARKETS

The availability of markets for the materials collected and re-processed is a significant issue, and one that is the focus of attention at a government level in both Republic of Ireland and Northern Ireland, extending to the North-South Ministerial Council. This is seen as critical if materials recovery is to be maximised. Some of the issues associated with end markets are discussed further below.

Mixed Dry Recyclables

The end market for these materials is very much based on the quantity and quality of the materials being recovered. With the quantity of material coming onto the market the re-processors are in a strong position to specify what material they will and will not accept. This is essentially however a commodity market. Experience suggests that for materials where a local processing capacity has been established, for example glass, a large proportion of the material is kept and re-processed on the island, which can only be beneficial to economic development. With the paper mills in the UK now at capacity, there is also strong support for the current study into the potential for a paper mill on the island, which if developed would change this market significantly. Other materials such as steel, aluminium and plastic at present are generally exported abroad as far afield as China. These outlets at present appear to be viewed as secure, so the emphasis appears to be on maximising such material for onward movement to foreign re-processing plants, rather than seeking to develop capacity locally.

Composting

The treatment of organic wastes is seen primarily as a 'local' issue, with these materials to be treated within their region, in accordance with the proximity principle. The products should also be able to be used locally, for example, as a peat substitute. This is well illustrated by Galway City who use all their compost produced for their own purposes.

This approach however needs to be extended across the region to ensure that local markets for the products, derived from the process of composting, are sustainable. Local Government and Government Departments are seen as central to this and should be committed to leading the development of markets for these products, through preferential use in parks and estates. A large number of such facilities are proposed, or are being developed within the region and significant market opportunities need to be created. Leadership in preferential use by councils and government would serve as an incentive to encourage others in the use of these products. The one area where greater clarity however is being called for is in relation to the treatment standards required by the Animal By-Products Regulation. There is still some uncertainty, particularly in Northern Ireland, that needs to be addressed to allow these facilities to come on stream

Mechanical Biological Treatment

Mechanical biological treatment (MBT) is a treatment technology that has a number of potential applications, including:

- Reducing the biodegradability of materials processed, and
- Increasing materials recovery.

MBT has been included in the NI BPEO for 2010 as a pre-treatment to landfill. However it is believed that there are likely to be potential difficulties regarding the markets for products from the mechanical biological treatment process. The materials recovered directly may be contaminated and in a competitive quality/specification driven market, may have limited outlets. The floc residue produced from Mechanical Biological Treatment processes could be used as a fuel itself, or processed further to produce a refuse derived fuel. In either instance, a facility to burn the fuels is required. Such a facility could for example be a cement kiln, or an incinerator. There are a number of cement kilns across the region could provide outlets. However they have limited capacity. Quality, consistency, and calorific value of the fuel will also be an issue, and such outlets would undoubtedly charge a 'gate' fee for taking the waste/fuel. Notwithstanding that, this option should be explored within the context of reviewing the waste management plans, where appropriate. However initial indications are that the material would still be classified as a waste, even if it is used for energy recovery and therefore falls under the control of the relevant TFS Regulations, which may prevent the transfer between Northern Ireland and Republic of Ireland and hence the development of sustainable markets for the fuel in the Region. A review of the UK Import and Export Plan could remove this as a barrier, provided the Waste Management Plans allow for it.

Landspreading

Current trends indicate that the markets for landspreading materials such as digestate from the process of anaerobic digestion, are likely to become increasingly less. This process is becoming less acceptable due to concerns over the potential for this material to cause pollution to land and potential detriment to human and animal health. It is likely that this downturn in markets for this product will continue, as the implementation of legislation such as the Water Framework Directive places controls on what can and cannot be spread to land. There is therefore little confidence that processes that produce a product for landspreading will be sustainable.

Energy Recovery

The future of energy supply on the island of Ireland is vitally important. There are issues about, inter alia, the security and diversity of supply, and dependence on non-renewable sources. Such concerns are reflected in the need to diversify and develop markets for the use of more sustainable and renewable forms of energy, including waste-to-energy. Energy produced from the thermal treatment of waste therefore has the potential to contribute to these wider policy objectives. In this regard it is worth noting that thermal treatment with energy recovery consistently scores highly in life cycle analyses and assessments in preference to landfill due to the displacement of fossil fuels.

Within the region there is clearly an issue about the public perception of thermal treatment facilities, even those that produce energy as a product. This is an issue for the waste management plans and the planning process to ensure that concerns are identified, discussed and addressed. However, the stakeholder consultation process adopted for the proposed Ringsend thermal treatment in Dublin serves as a model of good practice and engagement with the community. A key aspect of this has been the provision of high level independent expert advice.

10.6 ENFORCEMENT

Enforcement of regulations is seen as a particular issue, with consistent and appropriate enforcement of relevant legislation being seen as necessary to reduce the continuing problem of the illegal movement and dumping of wastes within the Cross Border Region. Such illegal movements and dumping of wastes are a particular problem as they adversely impact on those organisations seeking to develop business and provide services. They bear the costs associated with compliance but in some areas are being undercut by organisations illegally disposing of their wastes. The illegal dumping also creates hazards to people and animals and represents significant environmental threats. This is an issue not only for the region but across the island. However, a key factor for the cross border region is in relation to the border as a barrier to effective enforcement, and consultees have whole-heartedly supported more intensive and effective enforcement action by the regulatory authorities, on both sides of the border.

10.7 ASSOCIATED ISSUES

A number of issues have been identified during the course of the study, from consultation, that are not directly related to the cross-border dimension. They are however summarised below to inform decision makers that these are areas of continuing concern.

Planning Permissions: One of the key barriers to the development of waste infrastructure is the planning process and the difficulties experienced by both Local Authorities and the private sector in obtaining planning permissions for such facilities. Members of the public, even though they recognise the need for waste treatment facilities, are overtly opposed to the siting of these in their area, typified by the NIMBY / *'Not in My Back Yard'* attitude. As a consequence of this, planning applications for waste facilities of all types receive many objections and hence the process for making planning decisions is a very time consuming, high risk and expensive process for investors. The planning process therefore needs to be more effective and the Waste Management Plans used as a key to unlocking the process and barriers, through identification of the needs, siting criteria and potential locations of new facilities where appropriate.

Data Reporting: Data reporting is seen by businesses as an administrative burden. Many waste service providers described the process of data reporting as time consuming and containing a large volume of paperwork. For example, the main problems described were that service providers operating in a number of different Local Authority areas have to make different waste data returns in each region splitting the tonnages collected, for each Local Authority.

11.0 THE WAY AHEAD – ADDRESSING CHALLENGES AND EXPLOITING OPPORTUNITIES

11.1 INTRODUCTION

Waste management is a topical issue within the cross border region, for a number of reasons including the reviews of the Waste Management Plans and the high profile media coverage of illegal dumping. There are many opportunities for potentially mutually beneficial co-operation:

- Business – to – Business;
- Council – to – Council; and
- Business – to- Council

However it is equally clear that there are many barriers, some real some perceived, to allow the full potential to be realised within the region. These need to be addressed if the waste management systems within the region are to be optimised to the benefit of all parties.

11.3 ISSUES AND OPPORTUNITIES

This section therefore summarises a range of issues, and the opportunities to address them.

Issue: Illegal Dumping

The illegal dumping of waste circumvents the regulatory framework, undermines legitimate businesses, represents a lost resource and a loss of revenue through the Landfill Tax/Levy, and places an additional burden on the public purse in terms of clean up, and enforcement and prosecution.

Opportunity: To reduce the potential leakage of waste from within the regulated framework, through the introduction of the appropriate contractual conditions, penalty clauses and payment on proof of delivery/compliance, supported by suitable licence/permit conditions and penalties.

Lead: Regulatory Authorities

Support: Local Authorities, Waste Industry, Business Sector

Issue: Standards and Specifications

Difference in standards, for the treatment of waste materials, e.g animal by-products and catering waste, data reporting and specifications for the products e.g compost, and cost implications.

Opportunity: To develop and/or adopt, as far as is practicable, common treatment and data reporting standards and output specifications, for example the PAS100 Composting Standards.

Lead: Central Government

Support: Local Authorities

Issue: Sham Recovery

Sham recovery i.e the processing of wastes for materials recovery, in a lower cost disposal environment, where disposal of a significant proportion of the material is the result. This is both a loss of resource and, if it is a cross border shipment, the disposal of materials represents a lost revenue through landfill tax/levy to the jurisdiction of origin.

Opportunity: To minimise the loss of resource through the provision of clear guidance as to what constitutes sham recovery, and on recommended reporting requirements and contractual obligations.

Lead: Regulatory Authorities

Support: Waste Industry

Issue: Cross-Border Recycling and Re-Processing

At present the drive for cross-border co-operation on waste management is primarily high level, with drivers including government policy and the IBEC-CBI report on waste management. Reservations are coming through at the local level as to its relevance and appropriateness.

Opportunity: To create a Forum for local and central government, the waste industry, and the business sector, to interface, to identify and discuss issues that facilitate the development of competitive cost-effective waste management services within the Region, through the creation of a Recycling and Re-Processing Forum.

Lead: Central Government

Support: Local Authorities, Waste Industry, Business Sector

Issue: Sustainable Markets for Refuse Derived Fuel

Refuse derived fuel can be produced through a Mechanical Biological Treatment (MBT) process, either as a floc, or as a pellet. In either case, an outlet for burning the fuel is required. This could for example be either a cement kiln, or an incinerator with energy recovery, located within or outwith the region.

Opportunity: To explore the potential opportunities for the burning of RDF in an incinerator or as a substitute fuel, in cement kilns within the region, as part of the review of the Waste Management Plan, where appropriate.

Lead: Local Authorities

Issue: Sustainable Markets for Compost

Organic materials are generally collected and treated locally, close to their point of origin, and in accordance with the proximity principle. There are currently uses in the closing and restoration of the old landfill site, but this will decrease within a few years.

Opportunity: The creation of a 'closed loop' for the treatment of organic wastes and sustainable use of the compost. Local authorities to identify their potential use for compost as a peat substitute.

Lead: Local Authorities

Issue: Transfrontier Shipment of Wastes – UK Import Export Plan

The UK Import and Export Plan currently precludes the movement of wastes across the border for disposal. Given Northern Ireland's unique geographic position within the UK there are occasions when such an option would represent the best option. There is therefore an argument to make an exception in the Northern Ireland context.

Opportunity: Review the UK Import and Export Plan to allow an optimised network of facilities to be developed, for the benefit of all communities on the island, and the cross border movement of wastes for recovery and disposal (including thermal treatment) where appropriate. To be supported by a reciprocal tax arrangement, so that differences in the landfill tax/levy do not in themselves become market drivers.

Lead: Central Government

Issue: Transfrontier Shipment of Wastes – Role of Waste Plans

At present only the Donegal, SWaMP, and North West Waste Plans recognise the potential for cross border co-operation. Cross border movement of wastes should be recognised within the appropriate Waste Management Plans, at the point of origin, and destination. Movement of waste in a controlled and regulated environment between facilities located in different waste planning areas and cross border is essential if an effective market is to be developed, through economies of scale and competition between facilities.

Opportunity: To enhance the competitiveness of the economy by driving down costs for waste management through competition, by making provision for the movement of waste between regions and cross border in the Waste Management Plans, as appropriate.

Lead: Local Authorities

Issue: Transfrontier Shipment of Wastes – Costs

The costs of consignment notes for the cross border movement of wastes will add costs to businesses involved in the transfer and re-processing of materials, where materials are exported from the neighbouring jurisdiction. This is seen as a potentially significant financial barrier that will mitigate against the cross border movement of wastes and in particular could impact adversely on SME's and limit potential for growth in this sector.

Opportunity: To encourage economic development opportunities, by reviewing the costs associated with the cross border movement of wastes, where the wastes are moved for re-processing or treatment on the island of Ireland.

Lead: Central Government

Support: Regulatory Authorities

Issue: Transfrontier Shipment of Wastes - Consignment Notes

Different forms are used by different authorities recording Transportation Shipment. This inconsistent approach creates difficulties for businesses.

Opportunity: To develop a template to be adopted by all local authorities for ease of use, enabling businesses to follow a consistent approach.

Lead: Local Authorities

Support: Regulatory Authorities

Issue: Collection of Household Waste

A significant proportion of households within the cross border region in the Republic of Ireland either do not have or do not avail of a collection service. This is a major policy issue, as it not only represents a lost resource, but has potential public health and environmental protection implications.

Opportunity: To extend the coverage of the household waste collection service, thereby reducing the environmental and health risks associated with unregulated disposal activities, and increase the quantity of materials recovered.

Leads: Local Authorities

Support: Central Government

Issue: Control of the Waste Streams – Compliance with Landfill Directive Targets

The Landfill Directive targets for the diversion of Biodegradable Municipal Waste from landfill are a key drive throughout the region. Those councils that collect the wastes directly (all NI and some RoI councils) are well placed as they are in a position to control and direct the wastes to appropriate treatment facilities. Those councils that do not collect wastes are potentially vulnerable , and are reliant on the private sector acting appropriately to meet the targets.

Opportunity: To review the current systems and identify any necessary adjustments to develop a more robust, less vulnerable framework, based on enforceable requirements through appropriate regulations, including the use of bye-laws.

Lead: Central Government

Support: Local Authorities

Issue: Planning Permission

Negotiating the planning process is proving to be a time consuming and costly affair, for applicants, and creates a climate of uncertainty and potential lost locations.

Opportunity: To facilitate the planning process through the Waste Management Plans, by identifying the Best Practicable Environmental Option, and the need and siting criteria for proposed facilities.

Lead: Local Authorities

Issue: Data Reporting

The availability, accuracy and reliability of data varies widely, with NI councils having the best and most readily available data, based on quantity. There are gaps in the data in both the household, the commercial and the industrial waste streams.

Opportunity: To improve data reporting to facilitate waste planning and compliance with statutory targets, including the Landfill Directive Biodegradable Municipal Waste diversion targets, through the introduction of systematic and regular reporting of data by waste collectors, handlers, re-processors, and facility operators.

Leads: Regulatory Authorities

Support: Local Government

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