PART 1 BACKGROUND

1 INTRODUCTION

1.1 A NEW WASTE PLAN FOR A NEW WASTE REGION

In 2012, the Government's blueprint for a Circular Waste Economy, as set out in *A Resource Opportunity – Waste Management Policy In Ireland*, established a new framework for the provision of effective and efficient waste management services through the establishment of three new Waste Management Planning Regions. The Connacht and Ulster Region (CUR), serving a population of 837,350, includes the administrative areas of the following local authorities - Mayo County Council, Donegal County Council, Cavan County Council, Monaghan County Council, Leitrim County Council, Roscommon County Council, Sligo County Council, Galway City Council and Galway County Council.

Managing waste in a "sustainable and self-sufficient manner" will be one of the key challenges for the Region, and one in which every citizen has a role to play. How we manage our waste says a lot about how highly we value our environment. There is consensus that we should minimise our impact on the environment by working collectively to minimise the amount of waste we generate, and manage the waste we do create in the best manner possible.

The EU Waste Framework Directive (WFD), published in 2008, has resulted in revisions to the waste hierarchy, the principles of proximity and self-reliance and waste treatment definitions. The Directive places a greater emphasis on optimising resource efficiency, prevention, reuse and the recovery of mixed residual wastes. These are important changes which have been addressed in the preparation of this Plan.

The region has made significant progress during the lifetime of previous plans, but challenges remain. For example, the roll-out of the organic waste collection system at household and commercial level needs further expansion. On the infrastructural side, the region is well provided for in terms of pre-treatment capacity to mechanically process recyclable wastes, and residual waste to a lesser extent. There remains a gap in end-of-chain residual waste treatment capacity, resulting in an increase in exports of waste. The plan provides a framework within which all stakeholders can make a contribution to the successful implementation of the policies it contains.

1.2 THE WASTE PLAN

The plan is presented in three parts beginning with **Part 1, Background**, which sets out the strategic and policy context for the plan including a detailed profile of the region. **Part 2, Present Position** sets out the existing situation with regard to waste data, prevention and reuse activities, waste collection and infrastructural arrangements and the management of priority waste streams. **Part 3, Implementation**, deals with waste projections, infrastructure planning and the roles and responsibilities of the various stakeholders in the delivery of the plan. It also provides a financial overview and detailed breakdown of policies, actions and targets to be achieved and concludes with the arrangements for monitoring and reporting on the plan strategy, objectives, policies and actions.

Chapter 5 sets out the strategic vision for the plan, with an emphasis on the progression from a linear waste economy to a circular one. The mandatory and headline performance targets which have been developed for the plan are described in this chapter. The strategic approach incorporates well-established principles, and eight overall strategic objectives have been developed for key policy

areas over the duration of the plan. The evolution of plan policies has been prepared by the local authorities in response to key issues relating to policy, market or implementation needs. In shaping the policies the local authorities have considered potential environmental implications through the Strategic Environmental Assessment (SEA) process and incorporated protection measures into the final policies to mitigate potential impacts. The policies are presented throughout the chapters in the plan directly in response to the relevant issue. All of the plan policies, with the exception of those in infrastructure, are brought together along with the actions required for their implementation in **Chapter 19**.

Figure 1-1 illustrates the roadmap from strategic vision to action on which the plan has been constructed.

Figure 1-1 Strategic Vision to Actions Roadmap

Chapter 19 assigns responsibility to the various actions described and allocates an indicator through which the action can be measured, and a target date by which the action must be achieved.

The plan therefore is not only strategically driven but action-lead, with accountability tracked to ensure successful outcomes.

1.3 STRATEGIC ENVIRONMENTAL ASSESSMENT AND APPROPRIATE ASSESSMENT

Strategic Environmental Assessment (SEA) is a process by which environmental considerations are integrated into the preparation of plans and programmes prior to their final completion. The objectives of the process is to provide for a high level of protection of the environment and to promote sustainable development by contributing to the integration of environmental considerations into the preparation and adoption of specified plans and programmes. The SEA process also gives interested parties an opportunity to comment on the environmental impacts of implementation of a proposed Plan or Programme and to be kept informed during the decision making process. In accordance with Article 9 of S.I. 435 of 2004 (as amended), the lead authority for the CUR carried out an SEA which informed the plan. The SEA of the CUR is available as a separate document.

The EU Council Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna, better known as the *Habitats Directive*, provides legal protection for habitats and species of European importance through the designation of an EU-wide network of sites known as Natura 2000. These sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Birds Directive (2009/147/EC). Article 6(3) of the Habitats Directive establishes the requirement for Appropriate Assessment (AA) of plans and projects likely to affect European sites. An AA of the CUR Waste Management Plan was carried out in parallel to the SEA process and is available as a separate document. **Figure 1-2** illustrates the roadmap for the SEA and AA processes.

Figure 1-2 SEA and AA Roadmap

All of the SEA stages illustrated in **Figure 1-2** have been completed for the plan. The final stage, the SEA Statement, was prepared following the consideration of submissions made during the consultation period on the draft plan and environmental report.

Critical to the successful application of the SEA and AA processes is the integration with the plan making. This has been achieved for this plan through close integration of all stages of the plan making, as illustrated in **Figure 1-4**.

1.4 CONSULTATION

Public consultation is a fundamental part of the waste planning process. In order to fulfil the statutory requirements for consultation for the making of the waste management plan, local authorities must comply with Section 23 of the Waste Management Act 1996. This provides an opportunity for all stakeholders in the region to raise issues.

1.4.1 Pre-Draft Consultation

An advertisement was placed in the Irish Independent, Irish Times, Irish Examiner and on Local Authority websites on 10th October 2013 indicating the intention of the lead authority to prepare a new Waste Plan for the Region and inviting written submissions for consideration. In total 17 submissions were received from a variety of sources as indicated in **Figure 1-3**.

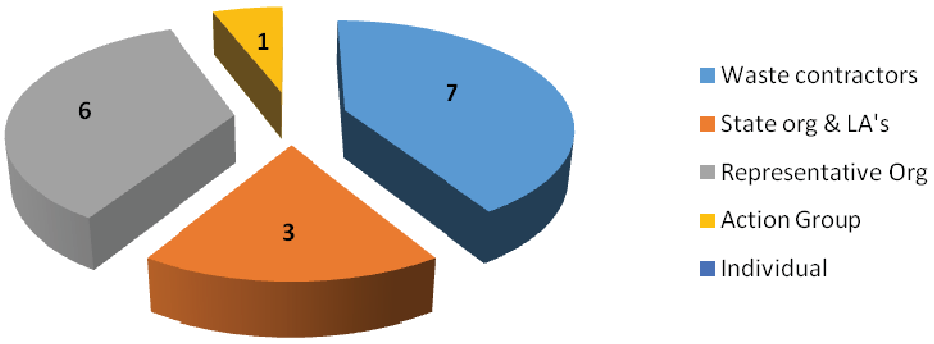


Figure 1-3 Sources of Submissions Received in the Connacht-Ulster Waste Region

The submissions received related to a wide range of waste issues including waste prevention, reuse, pay –to- throw units (PTUs), uncollected wastes, level playing pitch for waste contractors, consistent enforcement and consistent waste projections. The submissions have been grouped into 13 categories and percentage of submissions received in each category is illustrated in **Figure 1-5**.

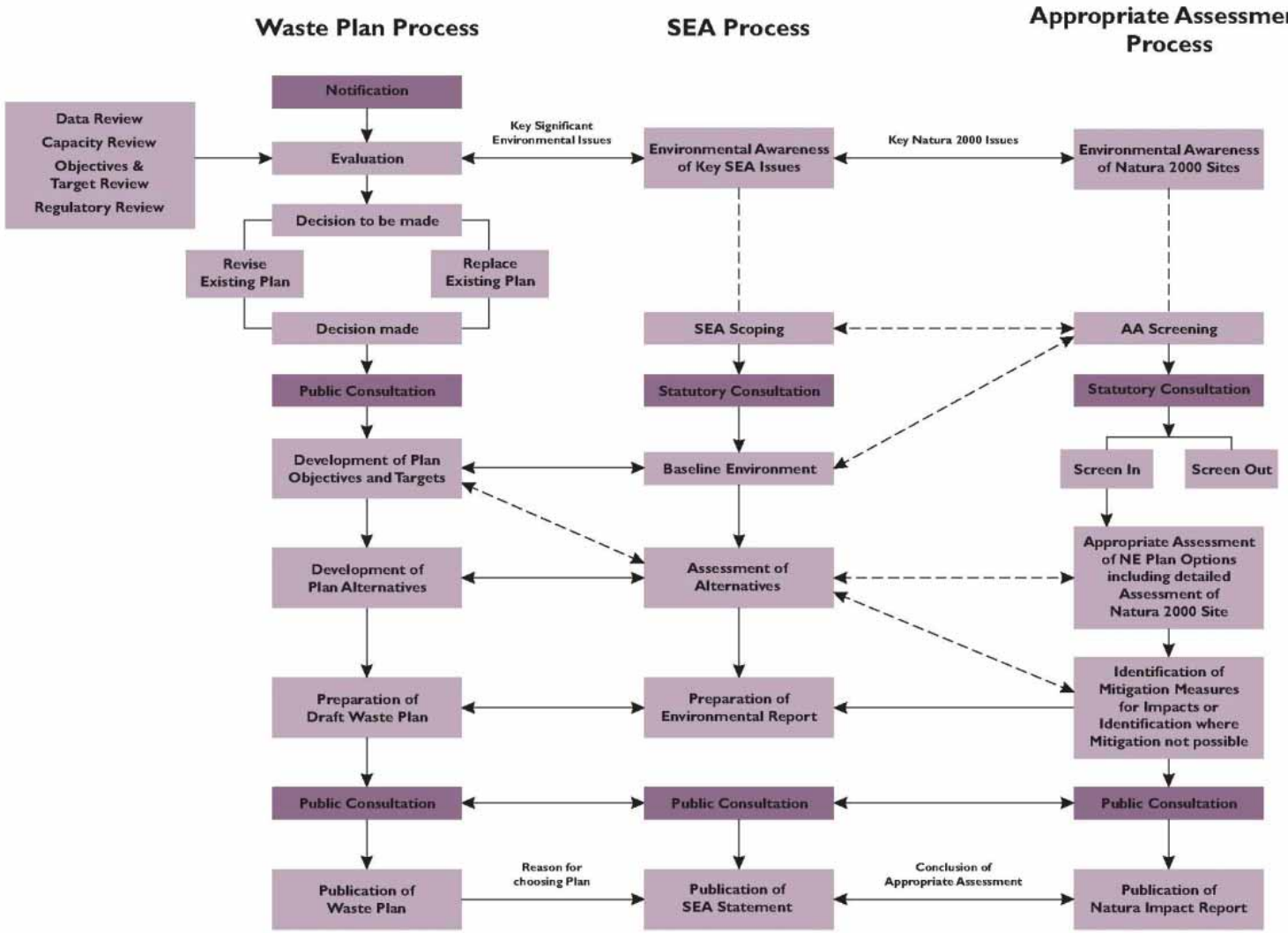


Figure 1-4 Integration of Processes

As a part of the consultative process a national briefing / consultation meeting was held with key stakeholders in Mullingar on the 9th of April 2014. Common concerns amongst stakeholders included the planning and permit process, prevention and awareness measures, waste regulation and enforcement, charging systems, movement of waste, infrastructure and facilities and projections and statistics. Submissions and meetings provided constructive suggestions, numerous ideas and initiatives for consideration in the preparation of the final CUR waste plan. A list of workshop attendees and the sources of written submissions are included in **Appendix A.**

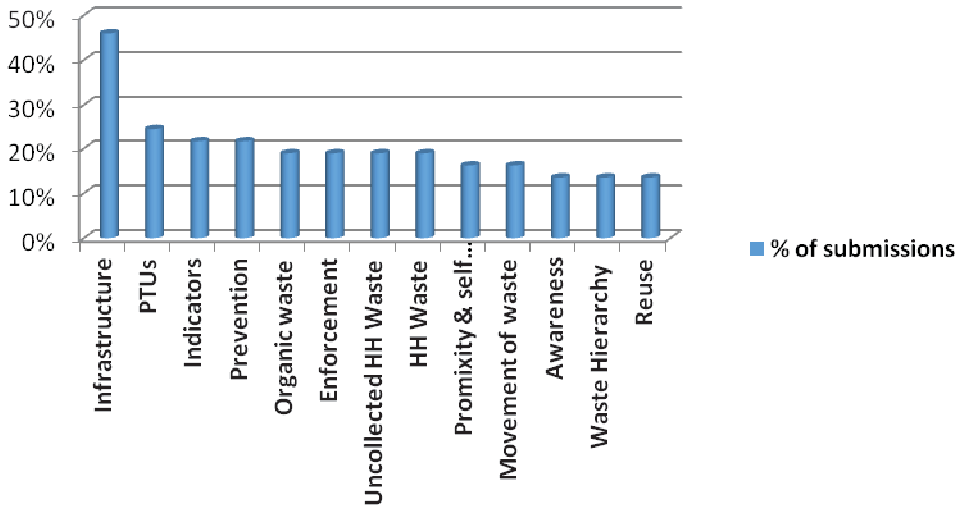


Figure 1-5 Percentage of issues raised per category of submission

Article 6 of the SEA Directive states that the competent authority preparing the plan or programme is required to consult with specific "environmental authorities" (statutory consultees) on the scope and level of detail to be included in the Environmental Report. The statutory consultees for SEA as established in national legislation are the:

- Environmental Protection Agency (EPA),
- Department of the Environment, Community and Local Government (DECLG);
- Department of Arts, Heritage and the Gaeltacht;
- Department of Communications, Energy and Natural Resources (DCENR);
- Department of Agriculture, Food and the Marine; and
- Northern Ireland Environment Agency (NIEA).

A scoping workshop was subsequently held on 23 June 2014 at the Custom House, Dublin which was coordinated for all three waste management regions. Representatives from all statutory consultees were invited to attend this workshop. The following groups were represented on the day: SEA & Plan team for Southern, Eastern & Midlands and Connacht-Ulster Regions; Department of Environment, Community & Local Government, Department of Communication, Energy and Natural Resources, Inland Fisheries Ireland and the Environmental Protection Agency.

In addition a period of public consultation (4 June to 4 July 2014) was applied to the SEA Scoping Document. A total of five non-statutory submissions and five statutory submissions were received and given due consideration in advance of the environmental assessment of the plan.

1.4.2 Post-Draft Consultation

The Connacht Ulster Draft Regional WMP 2015–2021 was launched on 18 November 2014, in Galway City Council offices, as part of a national launch of the three draft regional WMPs. The Chief/Deputy Chief Executives of the waste management planning lead authorities formally jointly launched the draft regional WMPs along with the associated Natura Impact Report and Strategic Environmental Assessment (SEA) Environmental Report. The draft plan was the subject of public consultation between 18 November 2014 and 30 January 2015. The public consultation process consisted of the following.

Statutory notifications

- A newspaper notice was published in the Irish Examiner, Irish Independent and Irish
- Times on the 18 November 2014; and
- A letter was forwarded to prescribed bodies in accordance with Section 23 of the
- Waste Management Act and the Waste Management (Planning) Regulations 1997.
- Non-statutory notifications – the CUR notified the following bodies:
- EPA waste licensed facilities;
- Local authority waste permitted facilities;
- Authorised waste collectors (the NWCPO notified the collectors on behalf of the
- region); and
- Local Authority Environment Director of Services within the CUR.

Presentations were made to the elected members of the local authorities, to local authority staff and the waste sector.

A total of 62 submissions were made in relation to the draft plan (a full list of the submissions is included in **Appendix A**).
A total of 19 written submissions were received from members of the public in relation to the draft WMP. All of the public submissions received from members of he publin came from one local authority in the region, Sligo County Council.

The draft WMP sets out an overall strategic vision for the plan which is supported by headline performance targets and 8 overall strategic objectives which are subsequently supported by a number of policies and actions. The submissions received from the public have been categorised under the headings of performance targets or one of the 8 overall strategic objectives namely:

A. Policy & Legislation;
B. Prevention;
C. Resource Efficiency / Circular Economy;
D. Coordination;
E. Infrastructure Planning;
F. Enforcement & Regulation;
G. Protection; or
H. Other Waste Streams.

Figure 1-6 illustrates the percentage of the public submissions received (21) which dealt with one of the categories listed above.

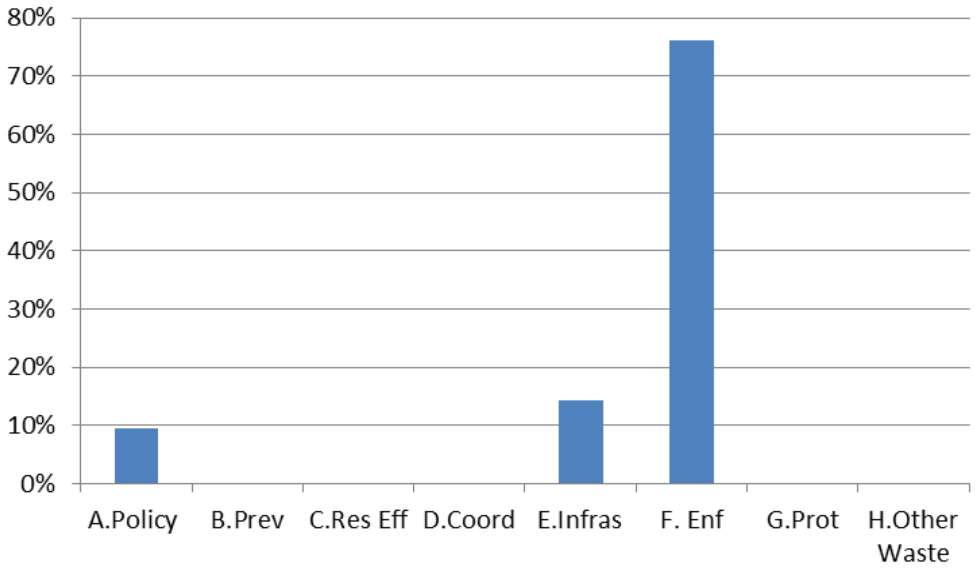


Figure 1-6 Issues Raised in the Public Submissions Received

The figure above shows that 76% of the public submissions dealt with the regulation and enforcement. A number of submissions also dealt with the infrastructure objective (14%).

A total of 43 submissions were received from various organisations and waste contractors, of which 14% were from organisations or companies based within the region. The source of the submissions has been sub-divided into a number of categories and **Figure 1-7** charts the breakdown of the source of the submissions received.

Figure 1-7 Source of the Submissions Received From Various Organisations & Waste Contractors

Similar to the public submission the submissions received from various organisations and waste contractors have been categorised under the headings of Natura Impact Report, SEA Environmental Report, performance targets or one of the 8 overall strategic objectives namely;

A. Policy & Legislation;
B. Prevention;
C. Resource Efficiency / Circular Economy;
D. Coordination;
E. Infrastructure Planning;
F. Enforcement & Regulation;
G. Protection; or
H. Other Waste Streams.

Figure 1-8 illustrates the percentage of the submissions received which dealt with the categories listed above.

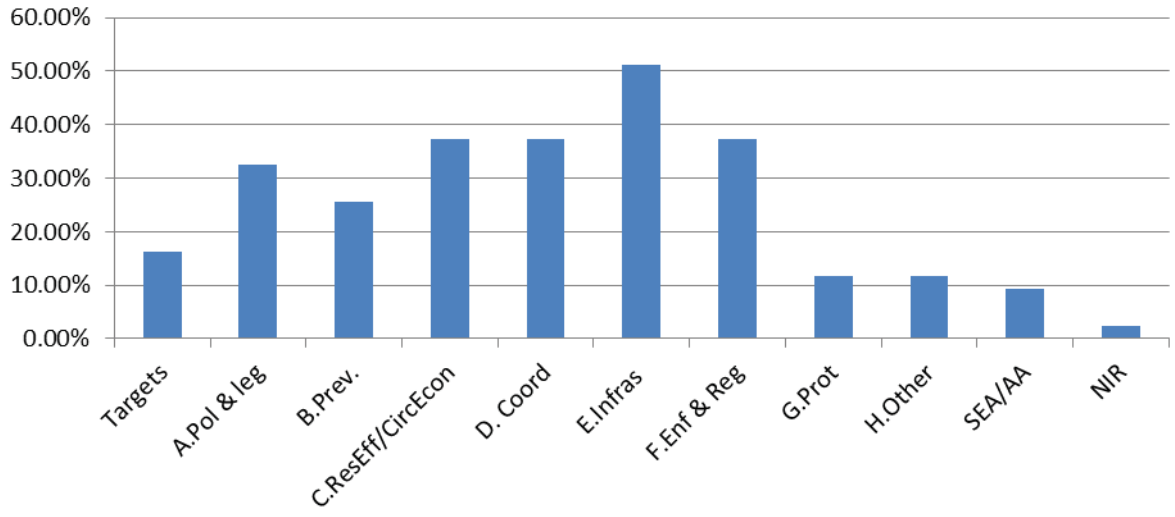


Figure 1-8 Issues Raised in the Submissions Received from Various Organisations & Waste Contractors

As evident from **Figure 1-8** the submissions received dealt with all areas however over 50% of submissions included comment on the infrastructure objectives, with a significant number of these submissions dealing with policies E15 (in relation to the plans support of up to 300,000 tonnes of additional thermal recovery capacity) and E17 (in relation to the plans support of up to 40,000 tonnes of additional biological treatment capacity).

Further details of the post-draft submissions received are provided in the *Connacht Ulster Region Waste Plan – Post-Draft Consultation Report* (CUR, 2015).

2 REGIONAL WASTE PLANNING FRAMEWORK

This chapter provides an overview of the regional waste management plan in the context of the statutory planning system.

2.1 PURPOSE OF THE REGIONAL WASTE PLAN

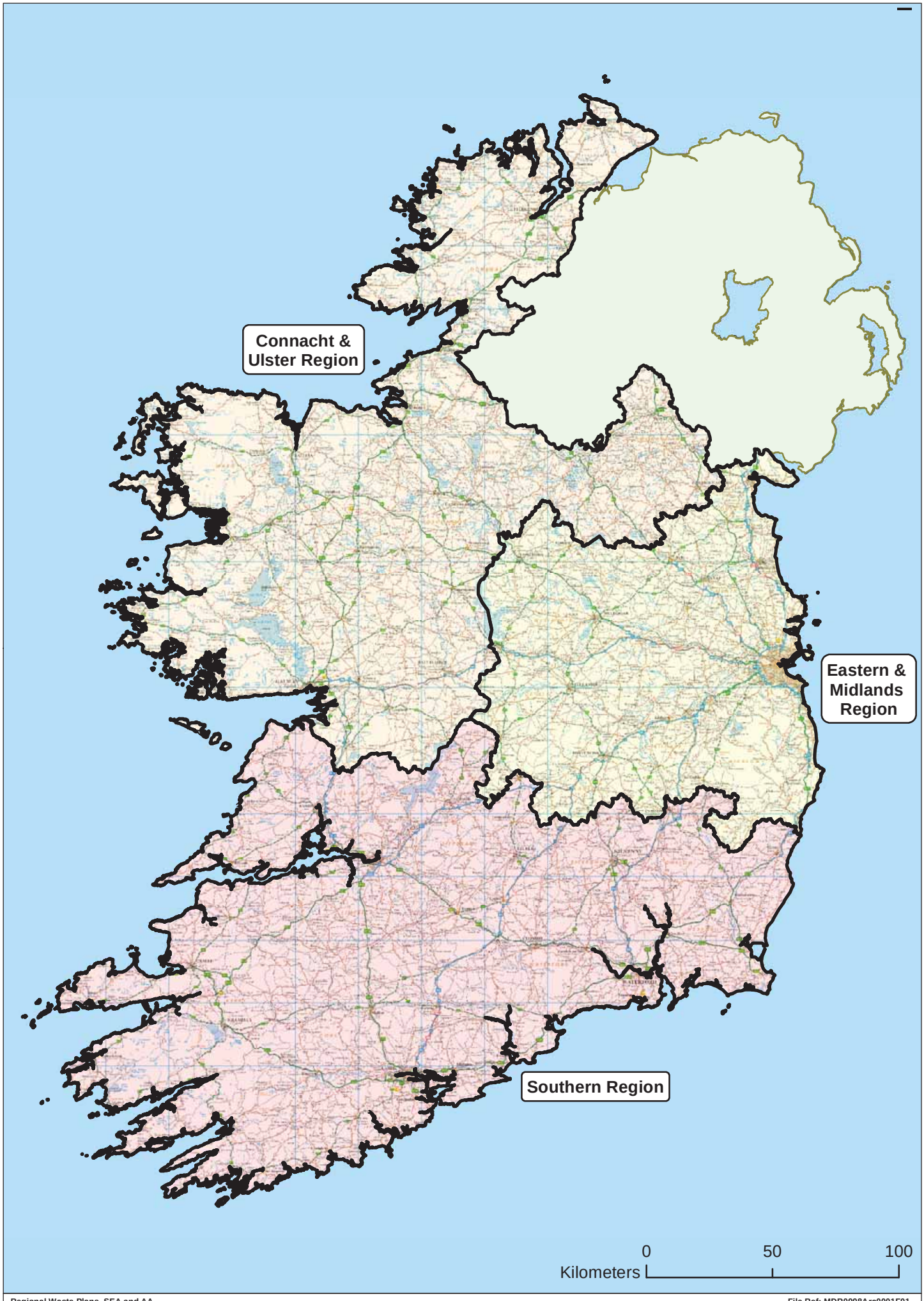
The waste management plans in Ireland are statutory planning documents. Their objective is to set out a framework for the prevention and management of wastes for a defined regional area. The preparation of the waste plans is the statutory responsibility of the local authorities, and two or more local authorities may jointly prepare a waste plan. Once prepared, a plan is valid for a period of up to six years and under statutory obligation must be evaluated once every six years.

Ireland's most recent waste policy statement[1] recommended that the number of waste management planning regions be reduced from 10 to three. This recommendation was guided by the national programme of reform of local government arrangements and the benefits identified under the programme of rationalising the regions in terms of the concentration of local authority resources. The new regional structures also better recognise the nature of the Irish waste market and the movement of waste in the State. The County and City Managers' Association (CCMA) formally adopted the new regional assembly of local authorities from a waste management perspective with the name, lead authority and make-up of the regions described in **Table 2-1** and illustrated in **Figure 2-1.**

Table 2-1: Details of the New Waste Regions

Waste Region (No. of Local Authorities)	Lead Authority	Local Authorities
Eastern & Midlands Region (12)	Dublin City Council	Dublin City Council; Dún Laoghaire-Rathdown County Council; Fingal County Council; South Dublin County Council; Kildare County Council; Louth County Council; Laois County Council; Longford County Council; Meath County Council; Offaly County Council; Westmeath County Council; Wicklow County Council
Southern Region (11)	Limerick City and County Council & Tipperary County Council	Limerick City and County Council; Tipperary County Council; Wexford County Council, Carlow County Council; Kilkenny County Council; Waterford City & County Council; Cork City Council; Cork County Council; Kerry County Council; Clare County Council
Connacht Ulster (9)	Mayo County Council	Mayo County Council; Donegal County Council; Cavan County Council; Monaghan County Council; Leitrim County Council; Roscommon County Council; Sligo County Council; Galway City Council; Galway County Council.

[1] A Resource Opportunity, Waste Management Policy in Ireland (July 2012).



Regional Waste Plans, SEA and AA

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Figure 2-1 Waste Regions of Ireland

The required content of the waste management plan is described in the Waste Management Act 1996[2] and the Waste Management (Planning) Regulations 1997 (as amended).

In preparing this plan, the local authorities have considered their relevant statutory obligations and the European Commission's guidance document[3] on waste plans and have reviewed recommendations from other relevant strategic planning documents such as the:

- National Hazardous Waste Management Plan 2014-2020;
- Air Quality Management Plan for the Dublin Region 2009-2012;
- National Waste Prevention Programme; and
- Our Sustainable Future, a Framework for Sustainable Development

Following a review of the format of previous plans, the new plan is set out over three parts and is designed to be an accessible and usable document. The policy objectives and actions set out a roadmap for improved waste prevention measures and management of waste, while safeguarding the environment and health of communities in the region.

2.2 PLANNING FRAMEWORK

In Ireland, planning and development is governed by a hierarchy of strategic frameworks and plans. The waste plan is part of this structure and its position in the context of national and regional plans is shown in **Figure 2-2**.

The highest tier of planning is described in the National Spatial Strategy (NSS) 2002-2020, which set out to achieve balanced regional development while acknowledging the importance of Dublin as the economic centre of the country. The fundamental objectives of the strategy have not been properly implemented, and in 2013 the Government signalled that the process of replacing the existing document was to commence. A replacement framework is due to be published in 2014.

The implementation of the planning strategies outlined in the NSS is needed at regional level, in particular regional planning guideline documents, to provide the link between the national and local planning frameworks. Spatial planning at a regional level must work within the overall approach, giving effect to national objectives, as well as guiding the preparation of county and city development plans and other plans, such as the waste plans. The relevant regional planning guidelines (RPGs) currently in force in the CUR are:

- Regional Planning Guidelines for the Western Region (includes Galway County, Galway City, Mayo and Roscommon) 2010-2022: and
- Regional Planning Guidelines for the Border Region (includes Leitrim, Donegal, Monaghan, Sligo and Cavan) 2010-2022.

In brief the recommendations focus on greater coordination of activities across the planning catchment area to provide economies of scale for the development of facilities. Key treatment infrastructure, such as energy recovery and biological treatment to help divert waste from landfill, is also highlighted.

[2] Sections 6, 7 & 8 of the Waste Management Act as amended.
[3] Preparing a Waste Management Plan, A methodological guidance note, European Commission (2012).

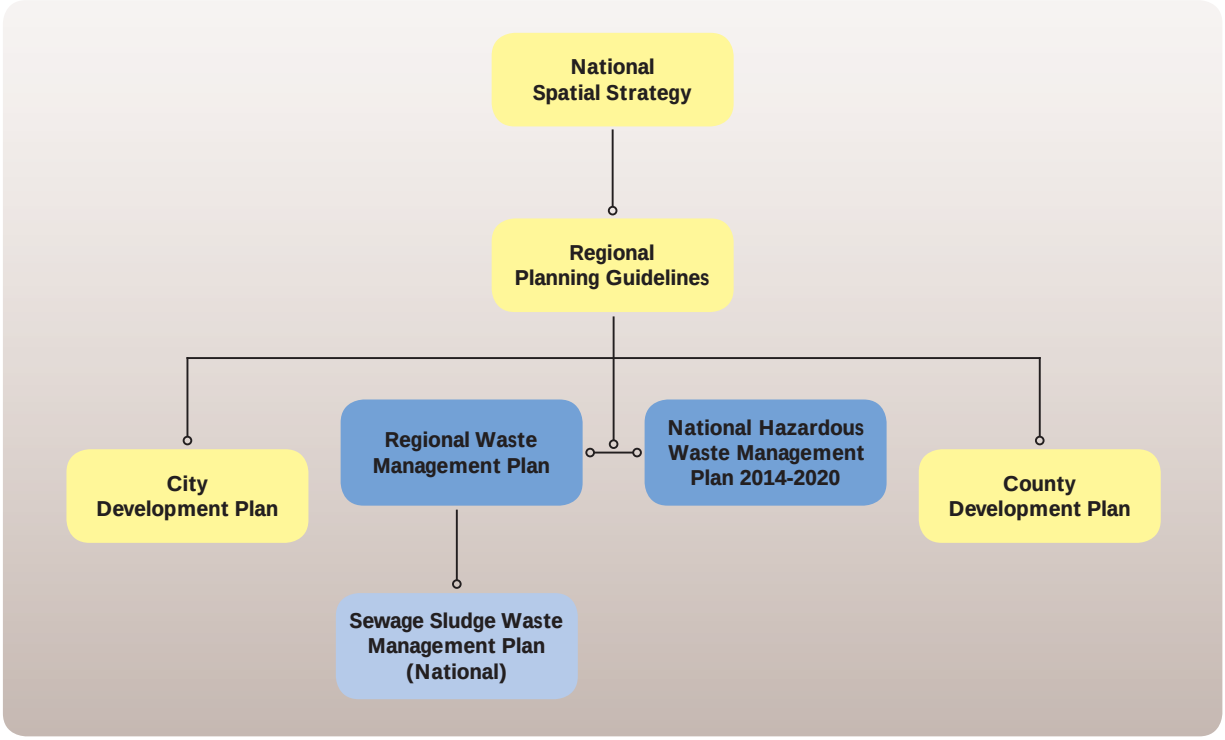


Figure 2-2 Hierarchy of Irish Planning Frameworks

The existing organisation of regional planning authorities in Ireland is being replaced, in line with the local government programme of reform. From 2015 the number of planning authorities will be reduced from eight to three, with the new assemblies mirroring the regional arrangements for waste management.

The waste plan is a statutory planning document setting out policies for the development of waste treatment infrastructure and sits on the same planning tier as the city and county development plans. In Ireland, development plans are the blueprint for local planning and development. Each plan sets out the planning policies of a local authority over a six year period.

These local planning frameworks are deemed (under law) to contain the objectives of the relevant waste management plan in force for that particular area.[4]

In the event of a conflict arising between an objective in the waste plan and that of a city or county development plan, the waste plan objective takes precedence and permission may be granted.[5]

2.3 INTERACTION WITH OTHER WASTE PLANS

The waste plan interacts with other statutory and non-statutory waste planning documents including high-level strategies as follows:

- National Hazardous Waste Management Plan (NHWMP) – this plan is a statutory document prepared by the Environmental Protection Agency (EPA). Local authorities are required to

[4] Section 10A (a) Waste Management Act 1996.
[5] Section 10A (b)(i) Waste Management Act 1996.

consider the information provided in the NHWMP when preparing the objectives and actions of the waste plan and to take relevant recommendations in that plan into account.

- National Implementation Plan on POPs, 2012 - this plan is prepared by the EPA in accordance with Article 7 of the Stockholm Convention and covers waste such as electrical equipment containing polychlorinated biphenyls (PCBs), other WEEE and wastes that emit POPs when combusted.
- National Waste Prevention Programme – this statutory strategic plan sets out the framework for waste prevention and resource efficiency in Ireland. It seeks to work in partnership with the newly established waste planning regions and this integrated approach is reflected in the waste plan.
- Sludge Management Plan – sludge management plans are prepared by Irish Water and a national plan for the management of wastewater sludge is currently being written. The plan does not have a statutory basis although the sludge plan is recognised as a component of the waste plan. Key objectives of the sludge plan are incorporated into the waste plans.

2.4 PLANNING PROCEDURES FOR WASTE FACILITIES

Planning permission applications for waste management facilities, with the exception of those classed as Strategic Infrastructure Developments (SIDs), are processed by local authorities. Applications are considered in the context of planning development legislation, the objectives of the regional waste plan, the local development plan, and any other relevant planning document. If an application is refused the applicant can appeal the decision to the national planning authority, An Bord Pleanála.

For specific private and public strategic infrastructure developments, including certain waste treatment developments, an applicant can apply[6] for planning approval directly to An Bord Pleanála, bypassing the relevant Local Authorities. The Planning and Development Act 2000 (7TH Schedule), lists the classes of infrastructural development which will be considered by the Board as SIDs.

Waste projects that will be considered for strategic application status consist of the following:

- A waste disposal installation for (a) the incineration, or (b) the chemical treatment, or (c) the landfill, of hazardous waste;
- A waste disposal installation for (a) the incineration, or (b) the chemical treatment, or (c) the landfill, of non-hazardous waste with a capacity for an annual intake greater than 100,000 tonnes; and
- An installation for the disposal, treatment or recovery of waste with a capacity for an annual intake greater than 100,000 tonnes.

Prior to making an application directly to the Bord, the applicant must first receive a notice in writing from it confirming that the application meets one or more of the following conditions and qualifies as strategic infrastructure:

- The development would be of strategic economic or social importance to the State or the region in which it would be situated;

[6] Under the Planning and Development (Strategic Infrastructure) Act 2006, which amends the Planning and Development Act 2000.

- The development would contribute substantially to the fulfilment of any of the objectives in the National Spatial Strategy or in any regional planning guidelines in force in respect of the area or areas in which it would be situated; and
- The development would have a significant effect on the area of more than one planning authority.

The decision as to whether or not an application qualifies for strategic status is made by the Bord at the conclusion of the pre-application consultation phase.

3 WASTE AND RESOURCE POLICY AND LEGISLATION

There is a significant book of statute and policy statements governing the management of waste in Ireland. European policy and legislation provides much of the basis for our national policy for managing waste. This relationship between European and Irish legislation is shown in **Figure 3-1**.

Waste and resource policy and legislation in Europe and Ireland is extensive and often complex. The European Parliament and the Council of the European Union adopts European waste Directives and each Member State is responsible for transposing the Directive into their national statute book by an agreed date.

There are also European Regulations. These are legislative instruments of general application which are binding in their entirety. Member States must apply a Regulation in its entirety, they cannot choose apply only those provisions of which it approves. Regulations are directly applicable and do not need to be transposed into national law by the respective Member States in order to take effect in national legislation.

Irish waste legislation is made up of (1) a primary Act, the Waste Management Act 1996, (2) statutory instruments or waste regulations and (3) other related legislation. A hierarchical structure governing the management of wastes exists and for the purpose of this plan, the waste legislation and policy presented in this section has been grouped under the following headings:

- Framework legislation and policy;
- Waste treatment and movement;
- Waste stream legislation including extended producer responsibility for specific wastes; and
- Other relevant waste regulations.

This chapter summarises the principal waste policy and legislation which will affect the management of waste and material resources in the region over the duration of the plan. A full list of waste legislation is given in **Appendix B** and more detail on each instrument can be found in the national statute archives.[7] The legislation and policy included in this section includes reference to cross-cutting statutory instruments from the energy and wildlife sectors.

3.1 WASTE FRAMEWORK LEGISLATION AND POLICY

Waste framework legislation establishes the legal structure for the prevention and management of waste. Legislation also governs reporting on waste generation, waste treatment and waste capacity and sets down mandatory waste targets (whether these are targets for diversion, collection or treatment). The European Commission has prepared waste framework legislation to govern this broad approach and the principles for managing waste across all Member States. The principal European framework legislation is:

- European Directive (2008/98/EC) on Waste (Waste Framework Directive);
- Council Decision (200/532/EC) establishing a list of wastes; and
- Regulation (1013/2006) on the shipments of waste.

[7] www.irishstatutebook.ie

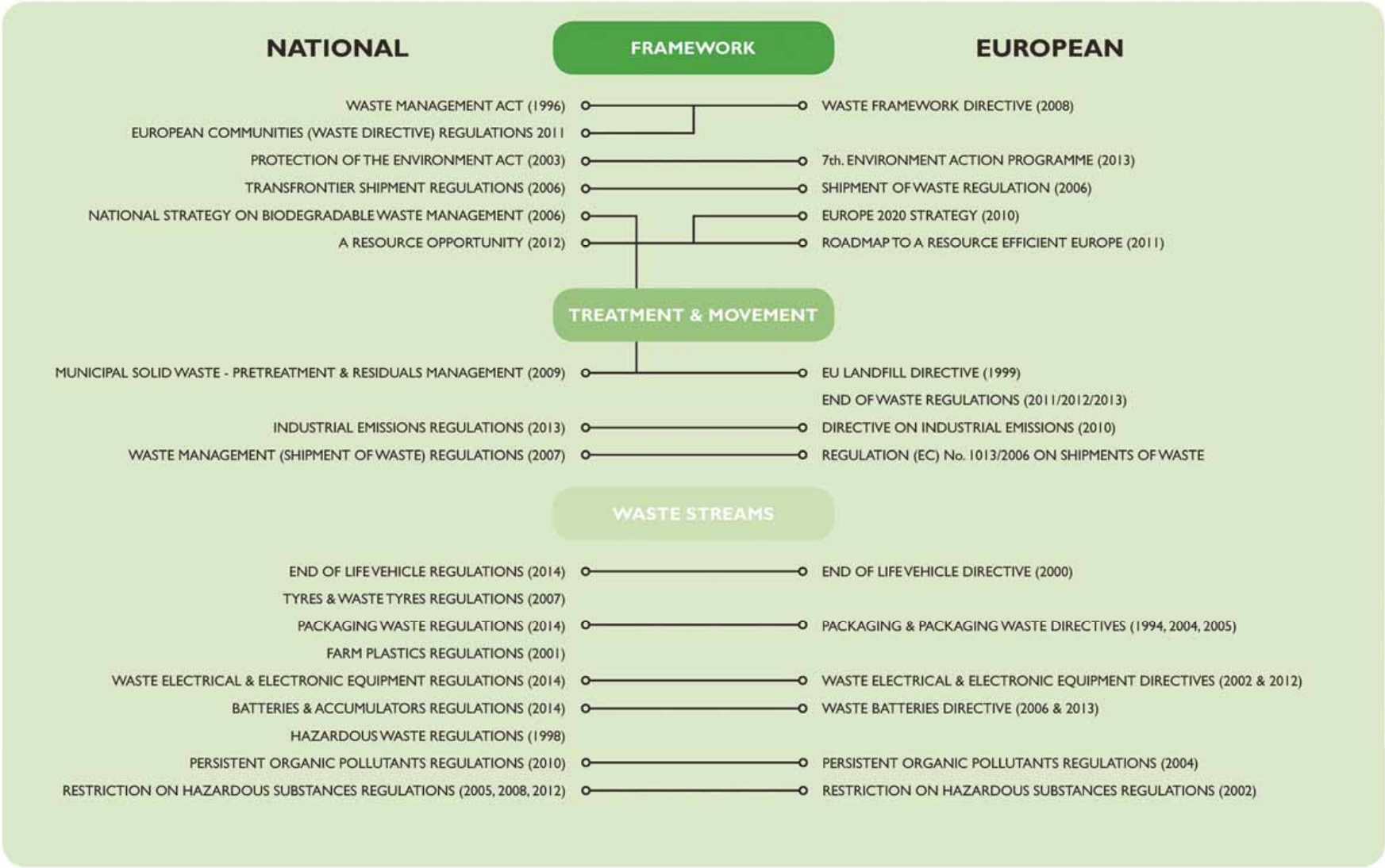


Figure 3-1 Mapping European and Irish Waste Legislation & Policy

3.1.1 Waste Framework Directive 2008 (2008/98/EC)

The Waste Framework Directive (WFD) incorporates the provisions of previous separate Directives on waste oils and hazardous wastes which have since been repealed. The WFD provides the overall structure for an effective and safe waste management regime in Europe and was transposed into Irish law in 2011.

The Directive describes the basic concepts and definitions related to waste management, such as the definition of waste, recycling and recovery. It gives Member States the provision to take action to encourage the prevention, recycling and processing of waste and also provides direction on important waste principles such as the polluter pays principle, extended producer responsibility, self-sufficiency and proximity. The Directive requires Member States to adopt waste management plans and waste prevention programmes. Waste management plans are to be evaluated at least every six years and revised as appropriate. An outline of the contents of the waste management plans is also set out in the Directive.

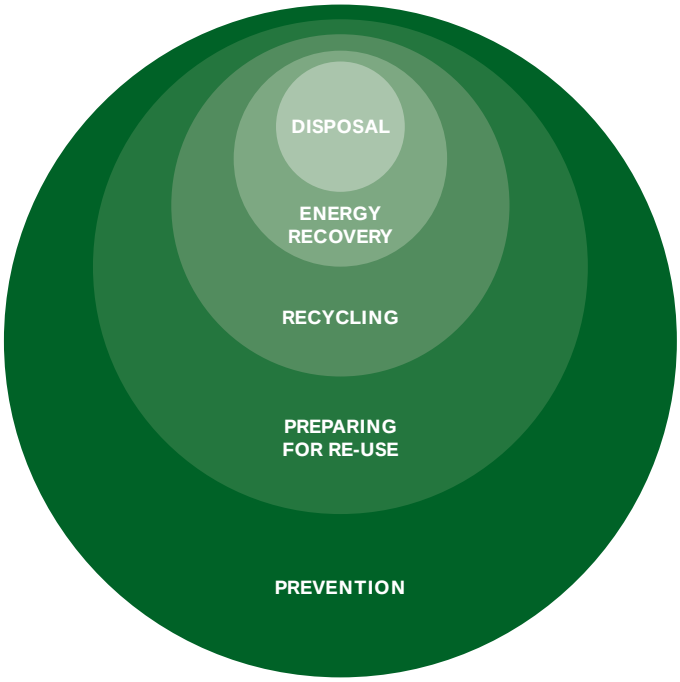


Figure 3-2 Revised Waste Management Hierarchy

The Directive sets out a waste hierarchy which is a priority order (**Figure 3-2**) of what constitutes the best overall environmental option in waste legislation and policy. Departing from the hierarchy may be necessary for specific waste streams, for example due to technical feasibility, economic viability or environmental protection, and may be supported through life cycle thinking.

The WFD also requires that Member States establish an integrated and effective network of installations for (1) waste disposal and (2) the recovery of mixed municipal wastes. Member States must ensure that those who store waste handle it properly, and waste treatment operations must be licensed. The WFD has set new targets for Member States to achieve by 2020, requiring:

- 50% preparing for reuse and recycling of certain household and similar waste materials; and
- 70% preparing for reuse, recycling and other recovery of construction and demolition waste.

3.1.2 European Council Decision on List of Wastes (2000/532/EC)

This Decision established a list of codes used to classify all waste. A distinction is made between hazardous and non-hazardous wastes and the list has been designed to provide a consistent waste classification system across the EU. The formal list of European Waste Catalogue (EWC) codes is contained in this Decision. Member States use the list of codes to record the types and quantities of wastes handled and managed.

3.1.3 European Community Regulation on Shipments of Waste (1013/2006)

This Regulation regulates the supervision and control of shipments of waste in a way which takes account of the need to preserve, protect and improve the quality of the environment. Its aim is to reinforce, simplify and specify the existing procedures for controlling waste shipments. It reduces the risk of waste shipments not being controlled and also seeks to include into Community legislation the amendments to the lists of waste annexed to the Basel Convention[8] as well as the revision adopted by the Organisation for Economic Cooperation and Development (OECD) in 2001.

This Regulation reduces the number of lists of waste authorised for shipment from three to two, corresponding to the two control procedures:-

- The procedure for prior written notification and consent: applicable to all shipments of waste intended for disposal, mixed waste, and hazardous and semi-hazardous waste intended for recovery;
- The procedure in which shipments are accompanied by certain information, applicable to non-hazardous, single stream material destined for recovery.

Wastes subject to notification and consent are set out in the Amber List (Annex IV), while wastes subject only to information requirements are set out in the Green List (Annex III). Wastes for which export is prohibited are listed separately (Annex V).

3.1.4 Waste Management Act

In Ireland, the primary legislative platform for waste is provided by the Waste Management Act (WMA) 1996 and the Protection of the Environment Act 2003. The WMA has been brought into effect by the making of a series of Regulations, covering a wide range of topics. For example, the format and content of waste management plans, is governed by the Waste Management (Planning) Regulations 1997. The WMA has been further amended by enacting regulations that address new EU environmental initiatives and strengthen areas where problems have arisen.

The main objectives of the Waste Management Act 1996 are to:

- Deliver a more effective organisation of public authority functions in relation to waste management involving new or redefined roles for the Minister, the EPA and local authorities by defining the roles and responsibilities of each;
- Enable measures designed to improve performance in relation to the prevention and recovery of waste; and

[8] Council Decision 93/998/EEC of 1 February 1993 on the conclusion, on behalf of the Community, of the Convention on the control of transboundary movements of hazardous wastes and their disposal.

- Provide a comprehensive regulatory framework for the application of higher environmental standards, in response to EU and national requirements.

3.1.5 European Framework Policy

Since the release of its Europe 2020 Strategy in 2010, the European Commission has published important waste policy framework documents to move Europe and its Member States onto a more stable, sustainable economic and environmental platform. The focus is for Europe to become more resource-efficient and to embrace the transition to a green circular economy. A summary of the principal policy publications is provided below.

7TH Environmental Action Programme: this programme has been formally adopted by the European Parliament and Council and will be guiding the implementation of environment policy for Member States until 2020. The Programme lists three thematic priorities, one of which is to turn the Union into a resource-efficient and competitive low-carbon economy. The focus is on turning waste into a resource with more prevention, reuse and recycling initiatives, and phasing out wasteful and damaging practices such as landfilling. By 2020 the European Union and Member States are to ensure that:

- Waste is safely managed as a resource to prevent harm to health and the environment;
- Absolute waste generation and waste generated per capita are in decline;
- Landfilling is limited to residual (i.e. non-recyclable and non-recoverable) waste; and
- Energy Recovery is limited to non-recyclable materials.

Roadmap to a Resource Efficient Europe: the roadmap is the seventh and last of the Europe 2020 Strategy flagship initiatives which aim to shift towards a resource-efficient, low-carbon economy to achieve sustainable growth for Europe. It establishes resource efficiency as the guiding principle for EU policies in many sectors in a long-term framework. The aim is to increase certainty for investment and innovation, and to ensure that all relevant policies factor in resource efficiency in a balanced manner. The Roadmap proposes ways to increase resource productivity and decouple economic growth from resource use and its environmental impact. It illustrates how policies interrelate and build on each other. The Roadmap proposes a set of measures such as incentives to choose the most resource-efficient products, services and production methods, to turn waste into a resource, to phase out environmentally harmful subsidies, to shift away from the taxation of labour towards the taxation of environmental impacts, to give value to natural capital and ecosystem services, to stop biodiversity loss, to meet air quality standards, to progress towards no net land take by 2050, to achieve good environmental status for all EU marine waters, and to fish within maximum sustainable yields.

3.1.6 National Framework Policy

National waste management policy up to 2014 is outlined in a series of statements produced by the DECLG and separate publications which address waste prevention and hazardous waste. The intention of these statements is to improve how we manage our waste, which often, in the first instance, means moving away from landfill towards more environmentally sustainable options.

National policy statements have evolved since 1998, the year of their first publication, and each statement attempts to build on the objectives of the previous one to improve the waste management system. The statements published to date include:

- Waste Management: Changing our Ways (1998);
- Preventing and Recycling Waste: Delivering Change (2002);
- Taking Stock and Moving Forward (2004);
- National Strategy on Biodegradable Waste Management (2006); and
- A Resource Opportunity – Waste Management Policy in Ireland (2012).

A Resource Opportunity – In July 2012 the DECLG published Ireland's latest waste management policy which sets out a number of important policy actions in the context of the waste management plans including:

- A revised five step waste hierarchy as part of national policy;
- The virtual "elimination" of landfilling municipal waste is set as a long-term goal with the introduction of landfill bans a possibility;
- The introduction of new regulations for household food waste was signalled and a four year phased roll-out is planned to improve participation and capture rates;
- Side by side collection of waste in the household market will remain with the collection permit system. The household collection market will be strengthened through the implementation of collection service standards and incentivised charging structures;
- Placing responsibility on householders to prove they manage their waste in an environmentally acceptable manner to help combat illegal fly-tipping, littering and backyard burning of waste;
- A greater level of enforcement will be required in the coming years at the household, commercial and industrial levels with better use of resources across the different authorities; and
- The principles of proximity and self-sufficiency are to be implemented to ensure that the State develops the necessary waste recovery infrastructure.

Sustainable Framework – This framework, published by June 2012 by the Government, sets out the range of environmental, economic and social measures required to move these agendas forward from vision to reality. Significant gaps remain across a range of economic, social and environmental public policy areas and the framework aims to address those gaps. Under the theme of sustainable consumption and production the framework recommends:

- That Ireland's waste policy continue the established approach of moving waste management away from landfill towards a range of alternative treatments;
- The effective implementation of resource efficiency initiatives across all sectors in Ireland led by government and state agencies; and
- Implement the national action plan and policy measures on green public procurement.

National Waste Prevention Programme – In 2014 the EPA published the next phase in the evolution of the national waste prevention programme. Towards a Resource Efficient Ireland, a National Strategy to 2020, revitalises the framework aimed at breaking the link between economic growth and environmental impacts through resource efficiency and waste prevention. The strategy sets out a range of objectives to be implemented through programmes, partnerships, research and targeted initiatives. The framework will prioritise activities in the following four thematic areas, all of which have relevance for the waste plans:

- Promoting efficient use of resources in business (water, material, energy);
- Minimising food waste and promoting efficient water use in homes and communities;

- Maximising reuse and recovery of resources and preserving national capital; and
- Encouraging behavioural changes to ensure efficient use of resources.

National Hazardous Waste Plan – In 2014, the EPA published the third national hazardous waste management plan. It sets out the priorities to be pursued over the six year lifetime of the plan to improve the management of hazardous waste in Ireland. Priority actions include waste prevention; improving collection rates for certain categories of hazardous waste; steps required to improve Ireland's self-sufficiency in hazardous waste management; and continued identification and regulation of legacy issues (e.g. the assessment and remediation of historic unregulated waste disposal sites). The key to the success of the plan is its effective implementation, and the waste regions (and local authorities within these) will have a role to play to deliver these actions.

Policy

There are extensive European and national legislative and policy obligations on local authorities to manage waste, and the waste hierarchy is a valuable policy and decision making tool. Moving the management of waste up the hierarchy is preferable from a waste management and environmental perspective, and the hierarchy will be central to the implementation of the plan.

Policy:

A1. Take measures to ensure the best overall environmental outcome by applying the waste hierarchy to the management of waste streams.

The polluter pays principle is a guiding principle at European and National levels and the local authorities recognise its importance. The waste producers and the waste holders are responsible for bearing the cost of waste management, and equitable implementation in support of the principle is required over the plan period. Ensuring this principle is complied with through regulatory and environment actions, addressing issues such as illegal waste activities, will positively affect the environment also.

Policy:

A2. Implement the polluter pays principle across all waste services and regulatory activities in a manner appropriately reflecting the risk to the environment and human health.

3.2 WASTE TREATMENT/MOVEMENT LEGISLATION AND POLICY

EU and national legislation is in place governing the treatment and disposal of waste. This details the conditions, environmental controls and standards to be put in place at these facilities. A brief summary of the principal European and national legislation relating to the treatment and movement of waste is provided below.

3.2.1 Directive on Industrial Emissions (2010/75/EU)

The 2010 Directive on Industrial Emissions (IED) seeks to minimise pollution from industrial sources, and it requires affected operators to obtain an integrated authorisation. Under IED, emission levels associated with Best Available Technology (BAT) will generally become the legally binding limits in licences. Waste activities affected include some which were not previously covered under Integrated Pollution Prevention and Control (IPPC) licensing e.g. composting, anaerobic digestion, metal shredding and pre-treatment to residual derived fuel (RDF) or solid recovered fuel (SRF). These activities are being licensed according to a schedule of dates.

3.2.2 Implementing the EU Landfill Directive (1999/31/EC)

The objective of the Landfill Directive is to prevent or reduce as far as possible any negative effects on the environment or human health associated with the landfilling of waste. It specifies technical requirements for landfill design, operation and closure and sets deadlines for the diversion of biodegradable municipal waste (BMW) from landfill. The Landfill Directive limits the amount of BMW that can be landfilled in Member States. The limit is calculated as a percentage of the amount landfilled in 1995, and is set at 75% in 2010, 50% in 2013 and 35% in 2016. Ireland met its 2010 target, and preliminary data from the EPA indicates that Ireland is on track to meet its 2013 and 2016 targets, refer to (see **Figure 3-3**).

.Article 5 of the Landfill Directive requires each Member State to prepare a National Strategy on Biodegradable Waste (NSBW) detailing measures aimed at the separate collection, recovery and recycling of biodegradable waste. The Irish NSBW was introduced in 2006 and identifies measures to progressively divert BMW from landfill in accordance with the agreed targets of the Landfill Directive. In order to help Ireland meet its obligations, the EPA developed a protocol[9] in 2009 to provide guidance on the level of pre-treatment required prior to landfilling and how to determine the amount of BMW in municipal solid waste (MSW) that is sent to landfill.

3.2.3 End of Waste Regulations

End of waste (EOW) criteria specify when certain waste ceases to waste and obtains the status of a product (or a secondary raw material). According to Article 6 (1) and (2) of the waste framework directive, 2008/98/EC, certain specified waste shall cease to be waste when it has undergone a recovery (including recycling) operation and complies with specific criteria to be developed in line with certain legal conditions. End of waste criteria have been developed to determine when iron, steel, aluminium scrap metal,[10] and glass cullet[11] cease to be waste.

In accordance with the EOW regulations, quality management system must be implemented and certified by an accredited independent conformity assessment body or other environmental verifier to demonstrate compliance with end of waste criteria. In 2014, nine Irish companies, authorised to accept scrap metal at twelve waste facilities currently maintain an applicable quality management system. The Commission is proposing to address other waste streams in the future including recovered paper, plastics, and biodegradable waste/compost.

[9] EPA Pre-Treatment Guidelines.
[10] Council Regulation (EU) No. 333/2011 (Iron, Steel, Aluminium Scrap Metal).
[11] Council Regulation (EU) No. 1179/2012 (Glass Cullet).

3.2.4 Collection and Movement of Wastes

Waste collectors are required by the Waste Management (Waste Collection Permit) Regulations, 2007 as amended, to have and comply with the conditions of a permit to collect waste. The Regulations set out the procedures for making a waste collection permit (WCP) application, the conditions which can be attached and the review and revoking of such permits. Offaly County Council was appointed as the National Waste Collection Permit Office (NWCPO) in 2012 and is responsible for administering waste collection permits in the Republic of Ireland.

Obligations for the movement of hazardous wastes are recovered in **Section 3.3**. There are some exemptions for the movement of specific waste streams, including WEEE, in certain circumstances which are covered under the Waste Management (collection permit) regulations 2007 as amended.

3.3 WASTE STREAM LEGISLATION AND POLICY

This section outlines the legislation in place in Ireland for the management of specific waste streams. However it is noted that there is unauthorised movement of some household waste and certain waste streams, such as ELVs into Northern Ireland and abroad. Most waste streams have binding performance targets in place. **Figure 3-3** charts national progress towards achieving these targets.

Household waste: In Ireland the management of the household waste stream and its fractions (residual wastes, organic wastes, and dry recyclable wastes) is governed by several Regulations and policy directions. The provision of source-separated household waste collection has been a policy recommendation since 1998[12] and was supported by the objectives of the first regional waste plans and obligated under statutory instruments, such as the Packaging and Waste Packaging Regulations 2007. In support of the policy, local authorities issued collection permits requiring the provision of source-segregated recyclable waste collections from the residual stream. Separate national Regulations[13] require householders to segregate their food waste and make it available for separate collection. Alternatively the waste can be home composted or brought directly to an authorised treatment facility. The Regulations require the provision of separate food waste collections to almost all households in the State. The future targets are to service all agglomerations with a population of greater than 1,500 persons by July 2015, with all areas with more than 500 persons to have a service by July 2016. Finally the WFD has set a target of 50% recycling by 2020 for principal fractions[14] of the household stream and Ireland is on track to meet this target.

Commercial waste: Similarly to household waste, the collection of commercial dry recyclable wastes is driven by national policy obligations and regulations requiring the separate collection of recyclables for recovery. The Waste Management (Food Waste) Regulations (S.I. No. 508 of 2009) require the segregation and recovery of food waste arising from commercial premises. The Regulations apply to “producers”' who are essentially the suppliers of food, and the classes of premises affected are provided in Schedule 1 of the Regulations. The National Waste Collection Permit Office is tasked with issuing permits to waste collectors for the collection of wastes including commercial wastes.

Packaging and waste packaging: The Packaging Waste Directive (94/62/EC and amended) and supporting Irish legislation deal with packaging placed on the Irish market and all types of packaging waste. The legislation requires Member States to introduce systems for the return and/or collection

[12] Changing Our Ways (1998) Department of Environment, Community and Local Government.
[13] The European Union (Household Food Wastes and Bio-Waste) Regulations 2013.
[14] Household-derived paper, metal, plastic and glass.

of used packaging. The European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014) replaces the previous suite of regulations introduced in 2007. The Packaging Directive set a target of a minimum of 60% packaging waste recovery to be achieved by December 2011 and Ireland has exceeded this target since 2006. The recovery rate in 2012 was 87% (see **Figure 3-3**).

Construction and Demolition Waste: Ireland does not have a specific Regulation addressing Construction and Demolition waste (C&D). This stream is managed through policy and other measures. For example in 2007, planning guidelines[15] issued under the Planning and Development Acts[16] required planning authorities to consider the DECLG Best Practice Guidelines to ensure the proper management of C&D waste. The national policy document, *Changing Our Ways* (1998), set a target of 85% recycling of C&D waste by 2013. More recently the 2008 EU WFD set a target of 70% by weight for C&D waste, excluding natural soils and stones waste and hazardous C&D wastes. In 2012 the EPA reported that Ireland has exceeded this target by a considerable margin with a recovery rate of 97% recorded.

Waste electrical and electronic equipment (WEEE): The WEEE Directive requires the establishment of a producer-funded take-back scheme for WEEE to promote reuse, recycling and recovery. The 2014 Irish Regulations give producers responsibility for financing the environmentally sound management of WEEE and assign collection and recycling/recovery targets. Ireland has developed robust producer responsibility schemes for the collection of WEEE and has achieved all mandatory targets to date.

End-of-life vehicles (ELVs): Directive 2000/53/EC on ELVs and National legislation[17] aim to minimise the impact of ELVs on the environment at the design and waste phase. These Regulations facilitate the achievement of a rate of reuse and recovery of 95%, and a rate of 85% of reuse and recycling from January 2015. Owners of ELVs must deposit them at Authorised Treatment Facilities (ATFs) that may not charge for accepting an ELV. Local authorities enforce the parts of the ELV Regulations relating to ATFs and also maintain a register of producers. Ireland is making progress towards the mandatory target, but its achievement is currently at risk.

Tyres and waste tyres: The Waste Management (Tyres and Waste Tyres) Regulations 2007 provide a regulatory framework for tracking tyre quantities and movements from the time they are discarded until they are reused, recycled or recovered. The Regulations require those supplying and collecting tyres to report the quantities involved, and to register with their relevant local authority, pay fees and fulfil reporting requirements. Those who are members of a Producer Responsibility Operator (PRO) are exempt from the requirements to register with local authorities. Unlike other waste producer compliance schemes the tyre compliance schemes do not fund/subsidise the collection and treatment of waste. The existing tyre compliance scheme is not required to meet specified recycling/recovery targets as these are tracking schemes rather than full Producer Responsibility Initiatives (PRIs).

Batteries and accumulators: EU Directives 2006/66/EC and 2013/56/EU on waste batteries and the national legislation[18] set out the system for managing waste batteries. The national regulation provides for the free take-back of waste batteries and facilitates their collection, treatment and recycling. Mandatory minimum collection rates are required for portable batteries - 25% by 2012 and 45% by 2016. Ireland's progress towards the 2016 target has been slow and the achievement of

[15] Guidelines 13 – Development Guidelines for Local Authorities, DECLG.
[16] Section 28 of the Planning and Development Acts.
[17] European Union (End of Life Vehicles) Regulations, 2014 (S.I. No. 281 of 2014).
[18] European Union (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2008).

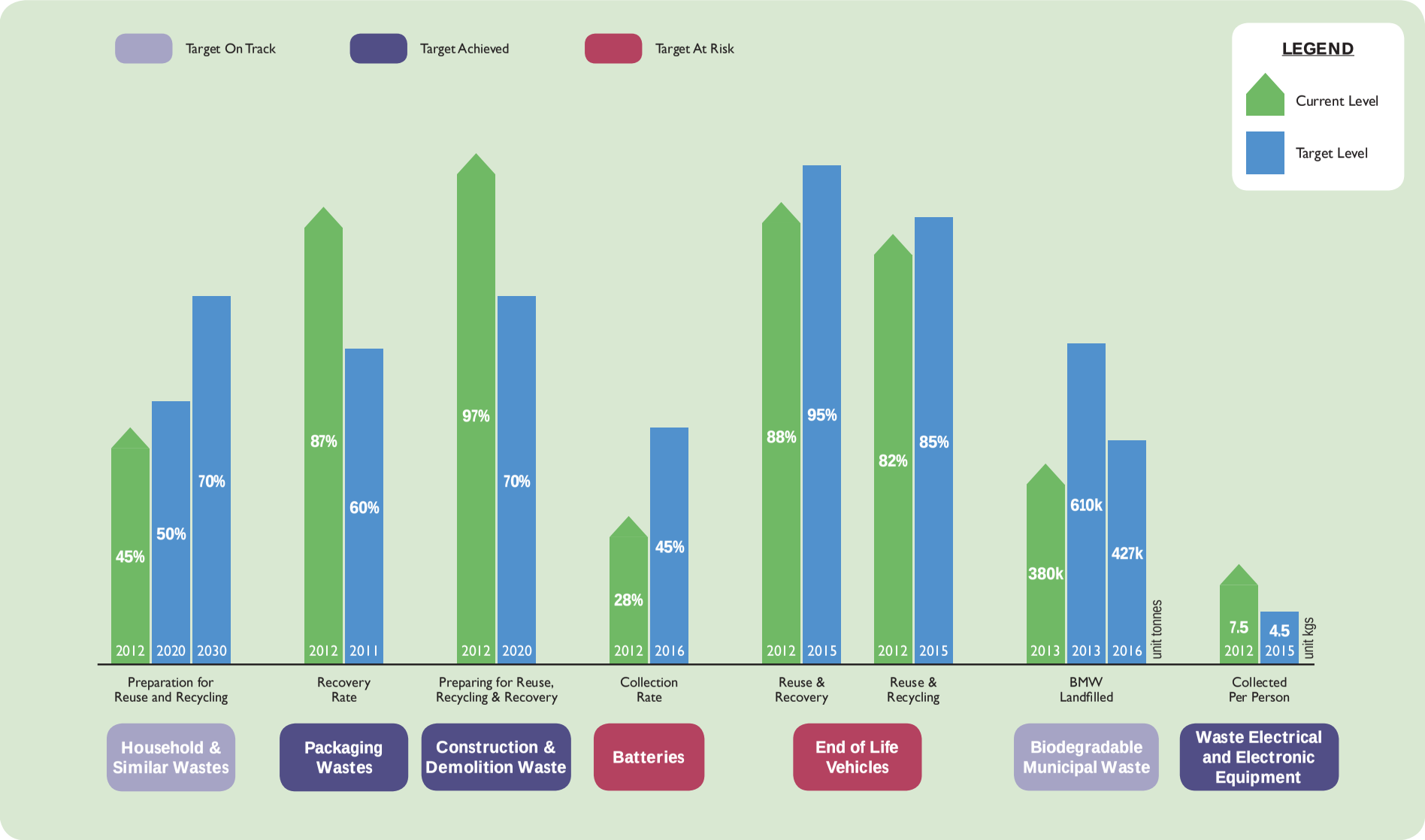


Figure 3-3 Ireland's Progress towards European and National Mandatory targets

this target is currently at risk. The 2006 Directive prohibits the landfilling or incineration of waste industrial and automotive batteries and outlines the provisions for labelling batteries and their removability from equipment. The 2013 Directive amends the previous Directive, and focuses on the hazardous content of waste batteries, prohibiting the sale of most batteries and accumulators that contain certain levels of mercury and cadmium.

Hazardous waste: Hazardous waste is generated by all sectors of Irish society, from large industry, to small businesses, households, schools and farms. It is for the most part managed by a professional hazardous waste industry and is treated appropriately and in accordance with legal requirements. The Waste Management (Hazardous Waste) Regulations, 1998 (S.I. No. 163 of 1998) as amended, update and replace a number of previous Regulations. These Regulations implement the provisions of several EU Directives relating to the supply of batteries and accumulators, the management and disposal of polychlorinated biphenyls (PCBs), PCB-containing wastes, asbestos wastes, waste oils and hazardous wastes

Farm plastics: The Waste Management (Farm Plastic) Regulations 2001, promote the collection and recovery of farm plastic waste. They oblige manufacturers and importers of farm plastics to arrange for environmentally acceptable ways of collecting and disposing of used plastic film, including deposit and refund, or other schemes.

Animal by-products: The Animal By-Product (ABP) Regulations[19] address aspects relating to the collection, treatment, storage and use of ABPs. Household, commercial and industrial waste streams consisting wholly or in part of ABPs including, for example, meat, milk, bones or manures, fall within its remit as do their associated treatment processes, including anaerobic digestion, composting, mechanical biological treatment (MBT), "fines" stabilisation and landfill. The legislation specifies acceptable processes and standards of recovery/disposal for each category.

Sewage sludge: The Waste Management (Use of Sewage Sludge in Agriculture) Regulations 1998 as amended provide limits for certain metals permitted in soil and sludge, and limit their introduction into soil. The licensing or certification of waste water discharges from local authority sewer networks began in 2007, giving effect to a number of EU Directives by restricting the discharge of dangerous substances. All discharges to the aquatic environment from public sewerage systems require authorisation from the EPA. Stringent conditions on the operation of such discharges will limit and control the effects on receiving water bodies. However, the Regulations do not include waste water sludge disposal. Irish Water is proposing to introduce a national waste water sludge management plan in 2015 and a national water treatment sludge management plan at a later date.

Mining and extractive industries wastes: The EU Directive (2006/21/EC) on the management of waste from extractive industries and National legislation[20] require the establishment of a range of provisions for extractive waste facilities. The Regulation focuses on improving quality management for the most hazardous types of extractive waste facility. Many of these facilities will be already licensed by the EPA, but local authorities are required to identify any additional sites. The local authority has assigned responsibilities for planning, inspections and information gathering.

Healthcare waste: This is the solid or liquid waste arising from healthcare activities. There is no specific statutory instrument for healthcare waste, and the management of this waste stream and its

[19] 2009 Regulation (EC No. 1069/2009).

[20] Waste Management (Management of Waste from Extractive Industries) Regulations 2009 (S.I. No. 566 of 2009).

fractions falls under several Regulations including the Packaging and Packaging Waste Regulations, Commercial Food Waste Regulations and Hazardous Waste Regulations.

Policy

The local authorities recognise the extent of inert, non-hazardous and hazardous waste streams being generated in the region and nationally. The management of these streams places specific obligations on the authorities, and the policies and actions of the plan are designed to ensure that the authorities are contributing to proper management. The importance of tracking the progress of managing these streams is critical to identify areas where the existing systems are not achieving performance targets, as well as reporting on the streams which are being managed successfully.

Policy:

A3. Contribute to the improvement of management performance across all waste streams through the implementation of policy actions and monitor progress towards national targets.

3.4 OTHER WASTE LEGISLATION

Other important Irish legislative instruments are summarised in the following sections.

3.4.1 Waste Management Planning Regulations

The Waste Management (Planning) Regulations 1997 specify the content to be included in a Waste Management Plan made under section 22 of the Waste Management Act, 1996:

1. Preface to the Waste Management Plan;
2. Present position regarding waste management;
3. Anticipated developments over the period of the plan;
4. Waste management policy; and
5. Implementation of waste management policy over the relevant period.

The Regulations also define the statutory authorities who are to be given a copy of the proposed or final plan.

3.4.2 Plastic Bag Levy

The plastic bag levy was introduced on 4 March 2002 under the Plastic Bag (Amendment) (No. 2) Regulations (S.I. 167 of 2007). Its primary purpose is to reduce the consumption of disposable plastic bags by influencing consumer behaviour. The current levy of 22 cent was introduced on 1 July 2007. Plastic shopping bags designed for re-use are exempt from the levy provided the retailer charges at least 70 cent for the bag.

3.4.3 Landfill Levy

A levy on each tonne of waste sent to landfill was introduced on 1 June 2002 under the Waste Management (Landfill Levy) Regulations 2002. The levy is designed to encourage diversion of waste from landfill and generate revenues that can be used to support waste minimisation and recycling initiatives. It was set at €15 per tonne in 2002 and has increased over time to the current level of €75 per tonne; see **Table 13-1** for details of the increases to the landfill levy since it was introduced.

3.5 ENERGY LEGISLATION

Energy policies encourage the use of waste resources as fuel. The *Energy White Paper (2007)* recognises that renewable energy has a significant role to play in meeting Ireland's objectives of security of supply, environmental sustainability and economic competitiveness. Waste-derived materials are an important source of renewable energy.

The *Strategy for Renewable Energy for Ireland (2012–2020)* set out a goal to develop a sustainable bioenergy sector which will support renewable heat and power generation, with a focus on the use of waste as an energy resource. The Electricity Regulation Act 1999 also encourages the use of electricity generated from renewable energy sources.

The *National Development Plan (NDP) 2007-2013* had a focus on the deployment of biomass and biofuels through a range of supports, including focus on integrating sustainable energy practices and structures into public policies and the development of infrastructures. A Ministerial Task Force on bio-energy produced a '*Bioenergy Action Plan for Ireland (2007*)' which set bioenergy deployment targets and identified priority areas for development and support. This has been followed by the Draft Bioenergy Plan, which was published in October 2014 by the DCENR.

The Renewable Energy Feed in Tariff (REFIT) is the primary means through which the generation of electricity from renewable sources is supported in Ireland, and some waste technologies qualify for State aid under this programme.

3.6 LEGISLATION TO PROTECT BIODIVERSITY AND WATER

A Waste Management Plan requires a Strategic Environmental Assessment (SEA) to be performed and a brief summary of the principal wildlife legislation relevant to the preparation of the SEA is provided below.

The EU introduced the Birds Directive in 1979 and the Habitats Directive in 1992. The aim of both is to maintain and restore the favourable conservation status of natural habitats and species. Each Member State must designate its most important natural areas as Special Areas of Conservation (SACs). The Directive specifies the scientific criteria on the basis of which SAC sites must be selected and very strictly curtails the grounds that can be used as justification for damaging a site. The network of sites is referred to as Natura 2000 and includes SACs (Special Areas of Conservation) for protected habitats and species and SPAs (Special Protection Areas) for protected bird habitats.

Article 6 of the Habitats Directive provides a strict assessment procedure for any plan or project not directly connected with or necessary to the management of a designated European site but which

has the potential to have implications for the site in view of the site's conservation objectives. The Regional Waste Management Plans, therefore, fall under the remit of Article 6.

The Wildlife Acts 1976-2012 are Ireland's primary biodiversity legislation. The 2000 Act broadened the scope of the Wildlife Acts 1976-2012, gave statutory protection to Natural Heritage Areas (NHAs) and enhanced conservation of wildlife species and their habitats.

Section 21 of the Wildlife Act 1976 -2012 provides for the protection of specific species of flora. The current list of protected plant species is set out in the Flora (Protection) Order 1999, and makes it illegal to damage the listed species, or their habitats, in any way. This protection extends to all sites where the flora may be found and is not limited to those designated for conservation.

The European Communities (Birds and Natural Habitats) Regulations 2011 apply to flora, fauna and habitats, with a particular emphasis on strengthening the protection of birds. The Regulations also complement relevant provisions of the Planning and Development (Amendment) Act 2010. Local authorities and An Bord Pleanála will now have legal responsibilities and powers under the Planning and Development Acts to ensure that the requirements of the Birds and Habitats Directives are adhered to when adopting development plans and granting of development consents. All other statutory authorities must adhere to the provisions of the new Birds and Habitats Regulations in their planning, consent and operational functions.

The Water Framework Directive (2000/60/EC) aims at improving the aquatic environment and as such it applies to rivers, lakes, groundwater, estuaries and coastal waters. Member states are required to achieve good status in all waters and must ensure that status does not deteriorate. This directive requires that water quality management be centered on river basins. The RWMP will contribute to the fulfilment of these environmental protection objectives through policy actions such as the plan for prioritising investigation and remediation of landfills. Preparation of the second cycle of River Basin Management Plans and Programme of Measures (PoM) has commenced and outputs will be available within the timeframe of this RWMP. These plans and associated PoM will be integrated into the RWMP as relevant.

4 EMERGING POLICY ISSUES

The following sections provide a summary of emerging policy issues which will impact on the management of household and municipal waste and the regulatory role of local authorities over the duration of the plan.

4.1 EUROPEAN CIRCULAR ECONOMY PACKAGE

The circular economy policy agenda is an essential part of the EU's vision for a healthier and more prosperous environment for Member States and its citizens. In the 7TH Environment Action Programme, the European Commission states that:

> "our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected and restored in ways that enhance society's resilience".

In the global economy the demand and competition for finite and sometimes scarce resources will continue to increase, and pressure on resources is causing greater environmental degradation and fragility. Making better use of those resources, reducing the leakage of materials from our economies, will deliver benefits economically and environmentally. The move to a circular economy replacing out-dated industrial take make consume and dispose models, is essential to deliver the resource efficiency ambition of the Europe 2020 Strategy. The circular economy is central to the strategy of the regional waste plans and is described in full in **Chapter 5**.

Stimulating the circular economy requires extensive policy support at European, national, regional and local levels. On 2 July 2014, the European Commission adopted the Communication "Towards a circular economy: A zero waste programme for Europe" and annex to establish a common and coherent EU framework to promote the circular economy. In November 2014, following the appointment of a new President and Commissioners to the European Commission, a significant number of legislative proposals were reviewed including the circular economy package.

The European Commission officially withdrew the ambitious waste and recycling policy proposals as part of the circular economy package in February 2015. The Commission has commenced work on a new proposal to replace the package.

It is expected that the new package will be broader in scope covering product design, reuse and the creation of markets for secondary raw materials, rather than being overly focused on waste management. A large number of Member States have signalled support for better product policy to help reduce waste. The role of targets will be revisited for the new package on the circular economy with targets previously proposed, such as the 30% resource efficiency target, unlikely to be retained.

The replacement package may contain more non-legislative policies to help cut the administrative burden of implementing EU waste goals. Issues to be addressed in the new policy through non-legislative measures will include investment and business opportunities. The package will also take into account the different situations in Member States and better reflect national differences.

The Commission has stated that it will publish a roadmap setting out its first ideas for the new package for public consultation from May to July 2015. Formal proposals, including a revised waste proposal, are due at the end of this year.

4.2 ORGANISATION OF THE HOUSEHOLD WASTE COLLECTION MARKET

The household waste collection market in Ireland was unregulated until the State brought into force primary waste legislation in 1996. At this time most household waste collection services in Ireland were provided by local authorities. In some rural areas local private collectors were serving householders, although this activity was limited.

Following the introduction of the Waste Management Act in 1996, secondary legislation was enacted to implement the requirements of the Act and to provide legal systems for operations and activities in the waste market.

The regulatory framework introduced for household collections did not exclude private operators from the market, once the appropriate authorisation (i.e. waste collection permit) was obtained. The evolution of the market has seen increased market penetration by private operators. This led to increased competition between public and private operators for the provision of services. Local authorities have increasingly ceded the household collection market to private collectors and since 2013 the Connacht Ulster Region has been fully privatised.

The reform of the household waste collection market has been under consideration for some time. In 2011 the present Government signalled its intention to introduce competitive tendering for local household waste collection services and issued a discussion document, *Altering the Structure of Household Waste Collection Markets* (2011), for public consultation. The consultation identified a number of areas of poor or problematic performance in the current regulatory system. Despite the need for change, the document also noted that a possible alteration in market structure has the potential to lead to economic disruption and other risks.

DECLG published a *Regulatory Impact Analysis on Household Waste Collection* in 2012. This analysis considered the introduction of competitive tendering for household waste collection. It recommended that Government preserve the current household waste collection market structure and that it strengthen the regulatory regime to address areas of weakness.

The policy document *Resource Opportunity-Waste Management Policy in Ireland* (2012) followed and proposed a revision of the existing regulatory regime to ensure that:

- Waste collected is managed in accordance with the waste hierarchy;
- Mandated service levels are delivered;
- Pricing structures incentivise household waste reduction and source segregation;
- Customer charters are put in place by all waste collection providers; and
- The existing collection permit system is strengthened to improve governance controls, permit fee structures, and address emissions and health and safety risks.

In this policy document the Government confirmed that competition oversight of the market was required so as to ensure a level playing field for both existing and potential new entrants. The Competition Authority has been tasked with monitoring the household waste collection market, with a formal review of the market to be completed by the Authority in 2016.

Household waste regulations are being prepared to strengthen the regulatory structure for the management of household waste, and are due for publication in 2015. A government circular[21] issued in 2015 outlines the scope of the regulations which are intended to introduce a number of new measures for household waste collectors:-

- Pay By Weight: They will have to ensure that pay-by-weight systems are in place by July 2015 and charge households on a pay-by-weight basis from July 2016;
- Customer Charter: They will be required to have customer charters in place by July 2015;
- Minimum Service Level: They will be required to collect all three household waste streams in line with the EU(Household Food Waste and Bio-Waste) Regulations 2013;
- Verify Customer Details: They will have an obligation to provide authorised officer details which confirm that a householder is using their service; and
- Enforcement Provisions: Contravention of any of the new measures listed above will trigger an automatic review of their permit and the regulations will also introduce fixed penalty notices for specified offences and a "three strike" approach to specified offences whereby an automatic review will be triggered.

Similar obligations will be in place for pay-to-use compactors and civic amenity sites accepting residual waste. From July 2016 onwards it is intended that there will be an obligation on householders to demonstrate that they are managing their waste, with the introduction of fixed penalty notices for households who cannot demonstrate this.

It is anticipated that the new regulations will deliver both an improved environmental performance and a quality service for consumers. The new regulations are also expected to enhance the regulatory and enforcement role of local authorities to address issues such as poor service provision and uncollected waste.

4.3 RESIDUAL AND BIOWASTE EXPORTS

The export of residual waste has become more prevalent in the Irish residual waste market in recent times. Data shows that residual waste exports, typically RDF, commenced as far back as 2004. Exporting of segregation biowaste to Northern Ireland is a trend that has developed more recently.

The amount of residual municipal waste being exported has increased each year since 2011. In 2013 over 300,000 tonnes of residual municipal waste was exported, which equates to approximately 20% of the available residual waste market in Ireland. Provisional data for 2014 indicates that the recent trend of increasing residual waste exports is set to continue, with a further rise in the tonnage recorded.

The quality of the residual waste material exported varies and is determined by the extent of pre-treatment the waste has undergone. Mechanically processing residual waste for export produces either RDF or SRF. The latter is a higher quality material which must comply with the international standard, CEN/TC 343. SRF typically has a higher calorific value and is the preferred alternative fuel feedstock for cement kilns. RDF is a lower quality material, the production of which requires less processing, and therefore it attracts a lower value. A third output in the form of baled, wrapped municipal waste is also being generated for export. This material may be exported with minimal, if

[21] CircularWP01/15.

any, treatment. The EPA has introduced guidance[22] outlining to operators who are preparing residual waste for export the level of processing required to allow a reclassification of material from a EWC 20 03 coded waste to 19 12 type waste code.

The growth in the residual waste export market is due to a number of factors, the primary one being the landfill levy, which rose from €30 per tonne in 2010 to €75 per tonne in 2013. The quantity of residual waste sent to landfill dropped by almost a third from almost 1.5 Mt in 2010 to just over 1 Mt in 2012. Competitive, low-cost gate fees exist at incineration and waste-to-energy facilities across Europe and these have contributed to the movement of waste away from Irish landfills. The number of active disposal facilities in Ireland was reduced to five in 2014 from 28 in 2010. However, the sustainability of current market dynamics and the place of residual waste exports in the national waste strategy need to be carefully monitored.

The latest residual waste export data shows that the key destinations are facilities in Central and Northern Europe, with the Netherlands, Germany, Sweden and Denmark to the fore. **Figure 4-2** outlines residual waste exports and destination markets.[23]

In the short term, capacity will remain available in the Central and Northern European facilities and residual waste will continue to be imported to make up the shortfall. There is uncertainty as to the length of time capacity will remain at current levels. A report[24] from the Netherlands predicts that some of the Dutch Waste to Energy (WtE) plants, which are currently importing waste, face closure from 2016 onwards. Less efficient or older plants in Europe which are coming to the end of their original operating life, will require substantial re-investment if they are to continue to meet operating standards. In Germany for example, 36% of WtE facilities are over 20 years old[25] and it is reasonable to assume that not all of these will be able to continue to compete in the current environment.

There have been immediate short-term gains from the export of residual waste. The export of such waste is helping Ireland achieve its mandatory landfill diversion targets, and the availability of low cost gate fees from plants in Europe is also helping to keep waste disposal costs charged to householders and businesses down. Waste operators in Ireland have responded to the availability of the export market by configuring their facility operations to produce residual waste which can be recovered abroad.

The return to economic recovery and growth is expected to lead to increases in the generation of waste. Notwithstanding the continued efforts to improve rates of recycling, the quantity of residual waste requiring treatment is anticipated to grow across Member States as economies begin to emerge from the financial crisis. This may impact on the levels of over-capacity, as may closure of older, less efficient plants which are currently active in the market. Gate fee prices are likely to increase with demand for capacity. The development of such a scenario poses a potential significant risk to Irish exports in terms of securing long-term and cost-effective outlets for residual waste.

A growing dependence on the export market may lead to an over-reliance on overseas markets to manage Ireland's waste. This will have consequences for national policy ambitions to become self-

[22] EWC Classification of Mixed Municipal Waste Exiting Waste Management Facilities, EPA (October 2012).
[23] Data source: National TFS Office, 2013.
[24] Recycling benefits from combustible waste imports, Dutch Waste Management Association, November 2012.
[25] UK Waste Export: Opportunity or Threat? 2011 Briefing Report, June 2011.

sufficient in treating residual wastes. A continuous move towards waste exports may influence direct infrastructural investment into mechanical pre-treatment facilities designed to produce baled residual waste for export. Such a move is not without risks as exports are vulnerable to market shocks, price increases and potential enhanced regulatory controls.

The export of waste also results in a direct loss of revenue to the Irish economy and impact on our ability to reach self-sufficiency. This loss is compounded by a corresponding reduction in the available waste resource used to generate energy in the form of combined heat and power (CHP) at many of these overseas facilities.

The energy generated from Irish waste not only is providing a revenue, which is a further loss to the Irish economy, for these plants but, more importantly perhaps, provides electricity and heat to businesses and homes in EU Member States, (see **Figure 4-1**).

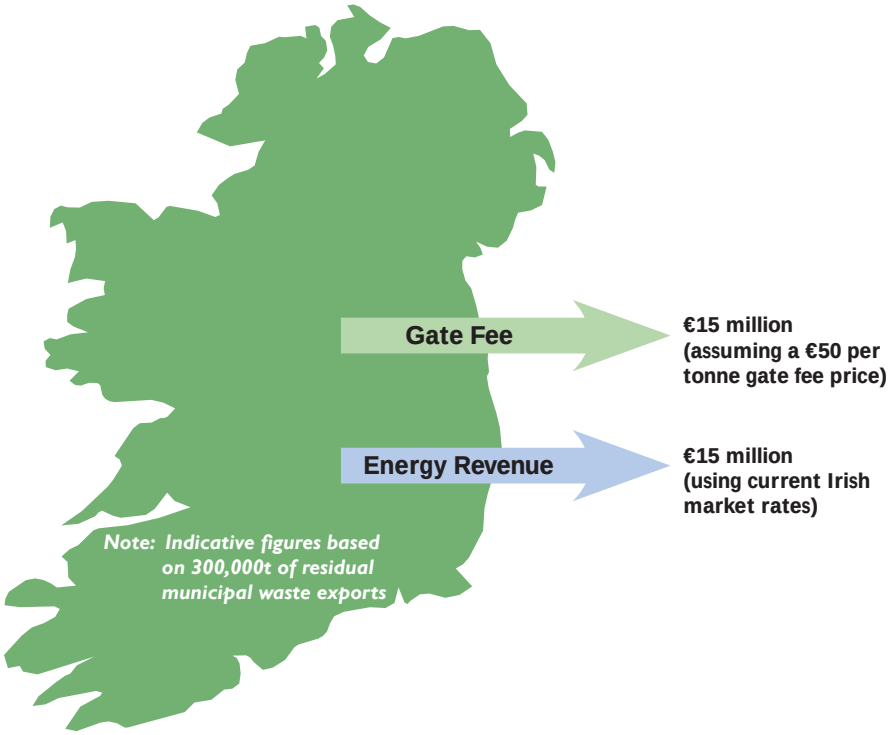
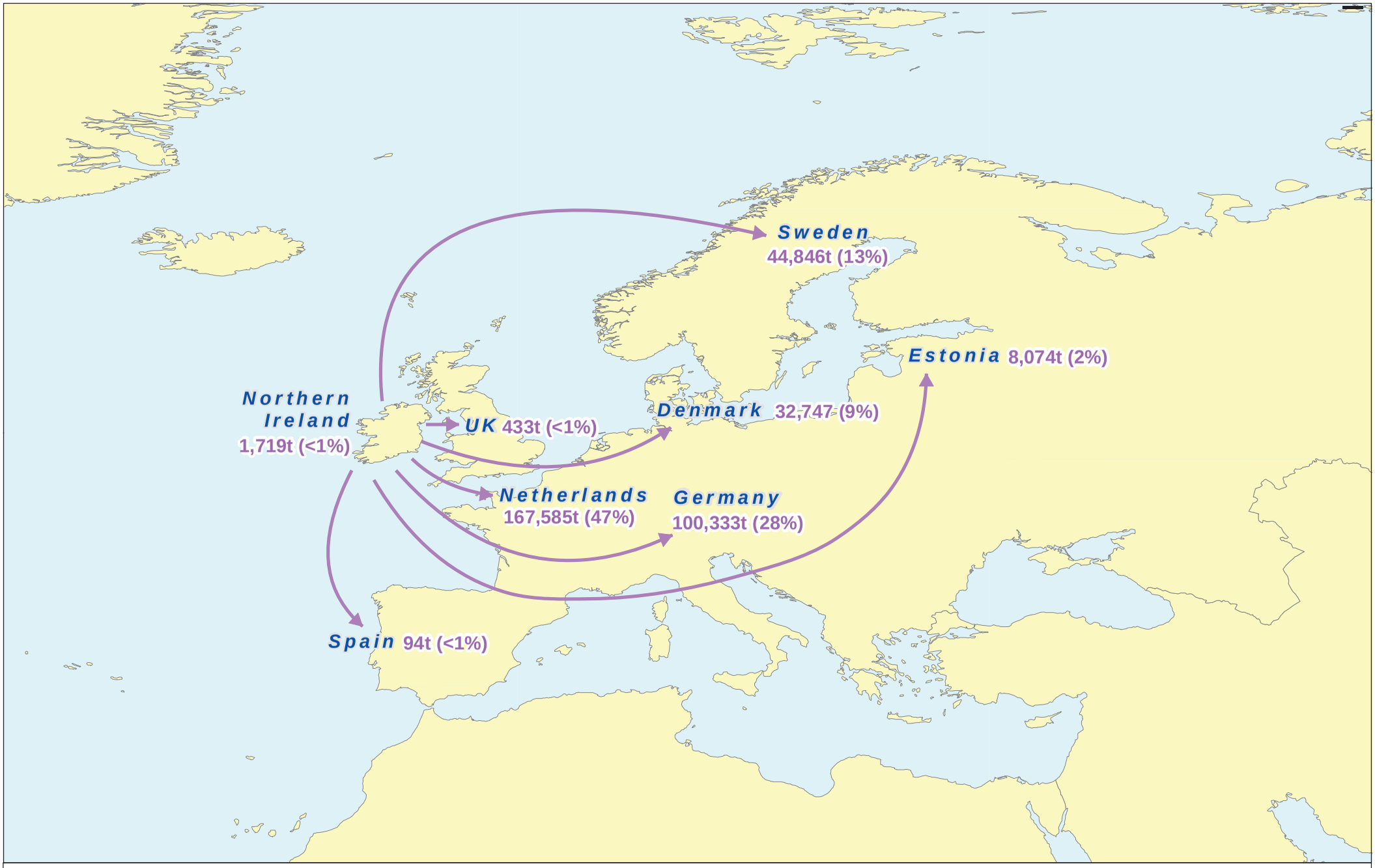


Figure 4-1 Indicative Financial Losses from Exporting Residual Wastes

The most recent Green Paper on Energy Policy in Ireland does not consider the potential of the waste sector to contribute to Ireland's energy future. The long-term alternative to the export of residual wastes is for Ireland to become self-sufficient in terms of managing and treating its residual waste in indigenous thermal recovery facilities.

Policy

The local authorities of the region support self-sufficiency and the development of indigenous infrastructure for the thermal recovery of residual municipal wastes in response to legislative and policy requirements. The preference is to support the development of competitive, environmentally and energy efficient thermal recovery facilities in Ireland, including the replacement of fossil fuels by co-combustion in industrial furnaces or cement kilns, and ultimately to minimise the exporting of residual municipal waste resources over the plan period.



Regional Waste Plans, SEA and AA

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Figure 4-2 Residual Municipal Waste Exports and Destination Markets (2013)

RPS

While there is the potential for local impacts on the environment from the development of indigenous infrastructure, there are overall positive effects resulting from the reduction in national and international transport of waste streams, and associated emissions, in working towards self-sufficiency.

Policy:

A4. Aim to improve regional and national self-sufficiency of waste management infrastructure for the reprocessing and recovery of particular waste streams, such as mixed municipal waste, in accordance with the proximity principle. The future application of any national economic or policy instrument to achieve this policy shall be supported.

4.4 GREEN PROCUREMENT

Green Procurement is a voluntary instrument generally associated with public policy, although it is equally applicable to the private sector. Green procurements help organisations to comply with legislation and contribute to environmental targets (e.g. CO_2 reduction, resource use and waste, water and energy), protect reputation, encourage new competitors, and increase market resilience by reducing exposure to commodity prices. The concept is becoming increasingly familiar and more commonly included in many organisations' Corporate Social Responsibility (CSR) policies.

Green Public Procurement (GPP) is defined in the European Commission's Communication "*Public procurement for a better environment*" as "a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured" (European Commission, 2008). At the European level, GPP is a voluntary policy. However, there are a number of areas where EU[26] or national[27] legislation creates specific environmental obligations which must be taken into account in procurement.

The importance of GPP in Ireland as a mechanism for government to deploy its purchasing power more strategically in pursuit of wider policy goals has been outlined in a number of key policy documents. The *National Climate Change Strategy 2007–2012* (DECLG, 2007) recognises the potential of GPP to "move the market" towards the competitive provision of more sustainable products and services. This is supported by Ireland's *Second National Energy Efficiency Action Plan* (DCENR, 2013), which recognises the opportunities that GPP represents for efficiency gains in the public sector.

The Governments framework document–*Building Ireland's Smart Economy* (2009) notes the potential of GPP practices to contribute to improving the capacity of Irish companies to supply high-quality, competitively priced goods and services that meet high environmental and carbon emission

[26] Waste Electronic and Electrical Equipment (WEEE) Directive 2012/19/EU (as implemented by S.I. No. 149 of 2014) sets requirements on producers to take back used equipment as well as registering with a designated authority and complying with hazardous substance controls.

[27] Waste Management (Food Waste) Regulations S.I. No. 508 of 2009 require all major producers of food waste to place it into a dedicated bin and ensure that it is not mixed with other waste.

standards. *Developing the Green Economy in Ireland* (DJEI, 2009) also emphasises the importance of GPP and its implementation in a manner that supports innovative companies. As part of the Irish Government's commitment to achieving the EU GPP target, the DECLG and Department of Public Expenditure and Reform (DPER) jointly launched Ireland's first *Green Public Procurement Action Plan, Green Tenders* in January 2012.

This action plan sets out a range of actions where green procurement can be strengthened within eight priority areas; Construction, Energy, Transport, Food and Catering Services, Cleaning Products and Services, Paper, Uniforms and Textiles, and Information and Communications Technology[28]. The policy document defines the legal context and provides an overview of the mandatory environmental criteria which already apply to public bodies.

Green Tenders adopts a target for 50% of procurement in the eight priority sectors (both by number of contracts and by value) to include at least core GPP criteria. It also defines the economic and value-for-money context in which GPP will take place. A GPP Action Plan Implementation Group, comprising relevant Government Departments and Agencies, has been established and has been tasked with:

- Reviewing implementation of GPP on an annual basis;
- Drawing up terms of reference for further on-going research; and
- Reporting on the level of GPP training for public procurers.

From a waste management perspective, the benefits from the implementation of GPP include the more efficient use of raw materials leading to a reduction in pollution and waste. Recently the EPA published an implementation guide[29] on green procurement aimed at the public sector which will help to establish the practice in public bodies.

Policy

The local authorities recognise the important contribution that GPP actions can make to improving resource efficiency and delivering higher level of materials reuse and recycling in public contracts. Over the plan period the local authorities are committed to implementing activities which realise a greening of contracts related to the waste plan. This policy will improve the process whereby public and semi-public authorities in procuring goods, services, works and utilities choose solutions that reduce the impact on the environment throughout their life-cycle. GPP recognises the purchasing power of the public sector and can bring about efficiencies in resource use, cost saving and environmental benefits.

Policy:

C4. Contribute to the greening of public procurement in local authorities through the inclusion of resource efficient criteria in all tendering processes related to waste plan activities.

[28] These groups have been chosen on the basis of the following criteria: quantum of public expenditure; scope for environmental improvement; potential impact on suppliers; potential for setting an example to private or corporate consumers; political sensitivity; existence of relevant and easy-to-use criteria; market availability and economic efficiency.
[29] Green Procurement, Guidance for the Public Sector, EPA, September 2014.

5 STRATEGIC APPROACH

This chapter sets out the overarching waste strategy for the CUR, which will be implemented over the lifetime of the plan.

5.1 BACKGROUND

This is the third round of regional waste plans to be prepared in Ireland and provides an opportunity to review the previous approach and propose a course of action to build on progress made to date.

The footprint of the new CUR encompasses three previous regional waste plans. The strategies contained in these plans typically covered a 15 year period and different scenarios for the future management of waste were examined in each region. Some of the plans included waste plan modelling, which took a holistic approach to assessing scenarios, considering waste management, and environmental and financial factors. To paraphrase, the preferred approach for each region aimed to maximise recycling and minimise disposal in favour of thermal recovery of residual wastes. The phrase "*best practicable environmental option*"- was used to describe the preferred solution and accompanying performance targets were set. To paraphrase, the preferred approach for each region aimed to maximise recycling and minimise disposal in favour of thermal recovery of residual wastes. The fundamental objectives of these strategies continue to have relevance for Ireland, while it is recognised that the waste market has evolved since their design. The management systems in place for waste in Ireland are well established and any future strategy must seek to build on the positive progress made by the sector.

The evaluation of the waste plans was completed in 2012 and provided an opportunity for local authorities to consider the progress made by each region towards their strategic targets. A clear finding of the evaluation was the inability of local authorities to monitor their actual progress against the targets in their region. Characteristics of the Irish waste market such as (1) the open movement of waste across regional boundaries, (2) the potential for waste streams to be handled by a number of operators and (3) the export of waste make it almost impossible for authorities to accurately track and record the management outcome for waste generated in their regions. Future strategic targets need to be relevant and measurable over the lifetime of the plan. The evaluation reports also recommended that targets focus on broader waste streams such as municipal waste rather than household waste. This reflects the realities of the market and the mixing of similar waste streams that takes place at the collection and processing stages, which makes it increasingly difficult to measure individual waste streams or fractions.

The completion of the evaluations coincided with the publication of the government's waste management policy statement, A Resource Opportunity. A guiding principle of the statement is that when waste is generated, maximum value must be extracted from it by ensuring that it is reused, recycled or recovered, including by the appropriate treatment of mixed municipal waste or residual waste.

5.2 OUR VISION

The strategic vision of the regional waste plan is to rethink our approach to managing waste, by viewing our waste streams as valuable material resources, leading to a healthier environment and sustainable commercial opportunities for our economy.

This strategic approach is focused on recognising the important role the waste and resource management sector has to play in helping Ireland's households, businesses and industry in the transition towards a more resource efficient, circular economy.

The strategic approach of the Plan aims to place a stronger emphasis on waste prevention and material reuse activities. It will also focus on enhancing the collection of quality materials from discarded waste to build on the positive progress made in recycling. In line with the national sustainable policy emphasis[30] to reduce our reliance on fossil fuel sources, the waste industry is recognised as contributing to Ireland's move to renewable energy solutions. The strategic approach will further strive to improve the recovery and generation of energy from waste treatment infrastructure by maximising the resource value of the materials and energy embodied in residual wastes. Finally, the strategy will seek to further reduce the role of landfilling in favour of higher value recovery options.

The regions will work together and with other stakeholders to achieve greater self-sufficiency and take greater responsibility for waste generated in Ireland. The future management of waste across all regions must be managed in a manner which seeks to protect the environment and health of citizens against potential harmful impacts.

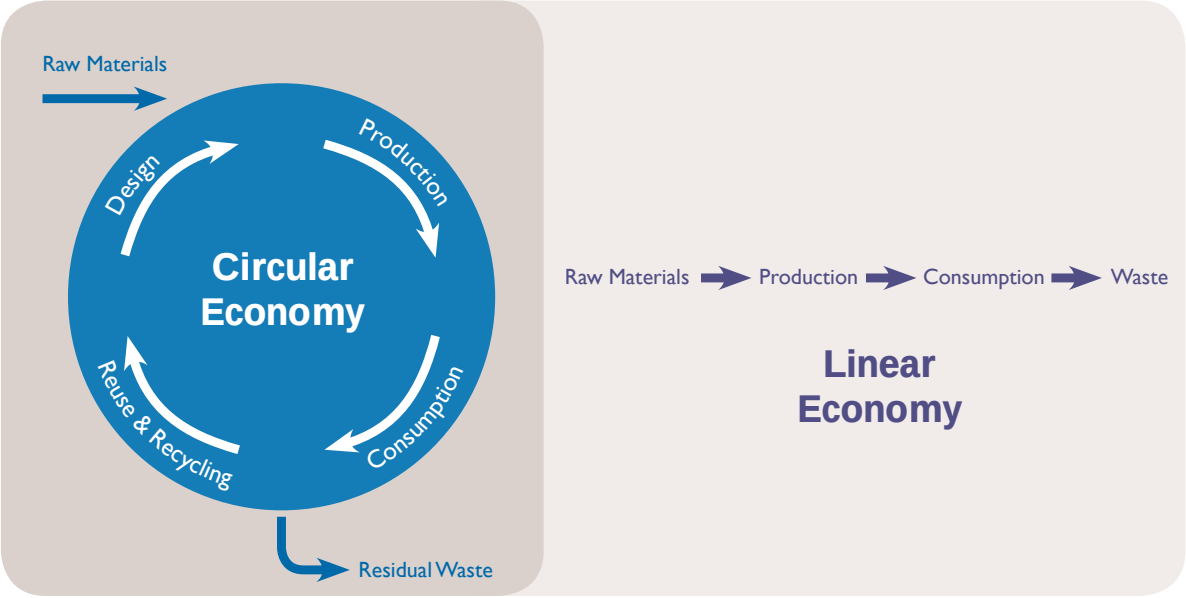


Figure 5-1 Circular Economy and Linear Economy Models

The circular economy model is not a new concept but rather a rethinking of similar concepts such as cradle to grave design and life cycle analysis. The circular economy model fundamentally considers waste as a resource which can be recirculated into systems that focus on maintaining, repairing, reusing, refurbishing and recycling materials and products. Being resource efficient and getting more from fewer resources is central to this model: see **Figure 5-1.** The existing make take dispose linear models, where products having reached their end of life are discarded as waste, are no longer viable. For the current linear approach to continue and thrive, resources would need to be plentiful and constantly available at low cost prices to meet demand. The economic reality is very different.

[30] Our Sustainable Future, A Framework for Sustainable Development, 2012.

Growing populations, increasing wealth and unsustainable levels of consumption have heightened the demand for resources, driving prices up and leading to significant pressure on resource availability. In response the European Commission is promoting and encouraging Member States to shift to a new circular economic model and is due to formally establish this policy theme across the EU with package of measures due to be released in 2015. The circular economy policy theme is discussed in **Chapter 4.**

Despite the economic downturn, Ireland is one of the highest consumers of materials per capita in the EU. A recent report[31] funded by the EPA indicates that Ireland's resource consumption in 2010 was 25.5 tonnes per person, compared to the EU average of 16.5 tonnes. Irish annual expenditure on materials is estimated to be in the range of €40-€50 billion, between six and eight times greater than it is on energy. Funding for energy efficiency far exceeds that of resource efficiency. This imbalance needs to be examined and adjusted so that funding of waste prevention and resource efficiency activities across all sectors is increased to reflect the policy ambition to move towards a more sustainable economy

Ireland recognises that national patterns of production and consumption must change, and government has set out an institutional framework for sustainable development and the green economy titled *Our Sustainable Future.*[32] This high-level, cross-sectoral document recognises the challenge and the distance Ireland has to travel in making the shift to a new economic model. The commitments are clear: Ireland's economic recovery will centre on the development of a green economy and recognising the opportunities for investment and employment in emerging sectors including waste. The principles of resource efficiency, environment and habitat protection, and sustainable consumption must be the cornerstones of our future economy.

The approach of the waste strategy is to put into place coherent policy objectives and actions which align with European and national policy and support Ireland's move to an economy defined by higher resource efficiency and productivity. This economic shift involves rethinking from all sectors, and the waste and resource management sector has the potential to play a leading role. The core principles of the strategic approach are fundamental to this development (see **Figure 5-3**), and will ensure that our wastes are managed better, in keeping with the wider vision of the circular economy.

The **waste management hierarchy** will remain a core principle of the waste strategy for the region. The hierarchy embodies the wider thinking of the circular economy and provides an order of treatment allowing policy makers and regulators to make clear decisions. **Figure 5-1** shows a circular economy system for the management of material resources and wastes. The five steps of the hierarchy are identifiable within this system and the long-term focus for the region will be to shift the balance of resource management into sustainable cycles of maintenance, reuse, refurbishment and recycling. To start this journey the local authorities are setting out a strong framework for prevention, reuse and resource efficiency activities as part of this plan. Future economic and regulatory instruments must be designed to support these tiers of the hierarchy. The move away from landfill is well advanced and additional systems, infrastructure and innovative solutions are required to progress waste and material flows in keeping with the hierarchy.

For the duration of the plan, continued progress in recycling key waste streams, such as municipal waste, will be a measure of success. **Source-segregation** is a well-established practice in the waste sector and local authorities recognise its value in recapturing resources, creating new material flow

[31] Roadmap for a National Resource Efficiency Plan for Ireland, EPA, 2014.
[32] Our Sustainable Future, A Framework for Sustainable Development, DECLG, 2012.

systems and developing opportunities for enterprises in the sector. Local authorities will continue to implement actions which support this principle, and are focused on harmonising kerbside systems in the region and encouraging the segregated collection of organic wastes from householders and businesses. The full potential of the kerbside system is not being realised, and local authorities will work with industry and other stakeholders to address this.

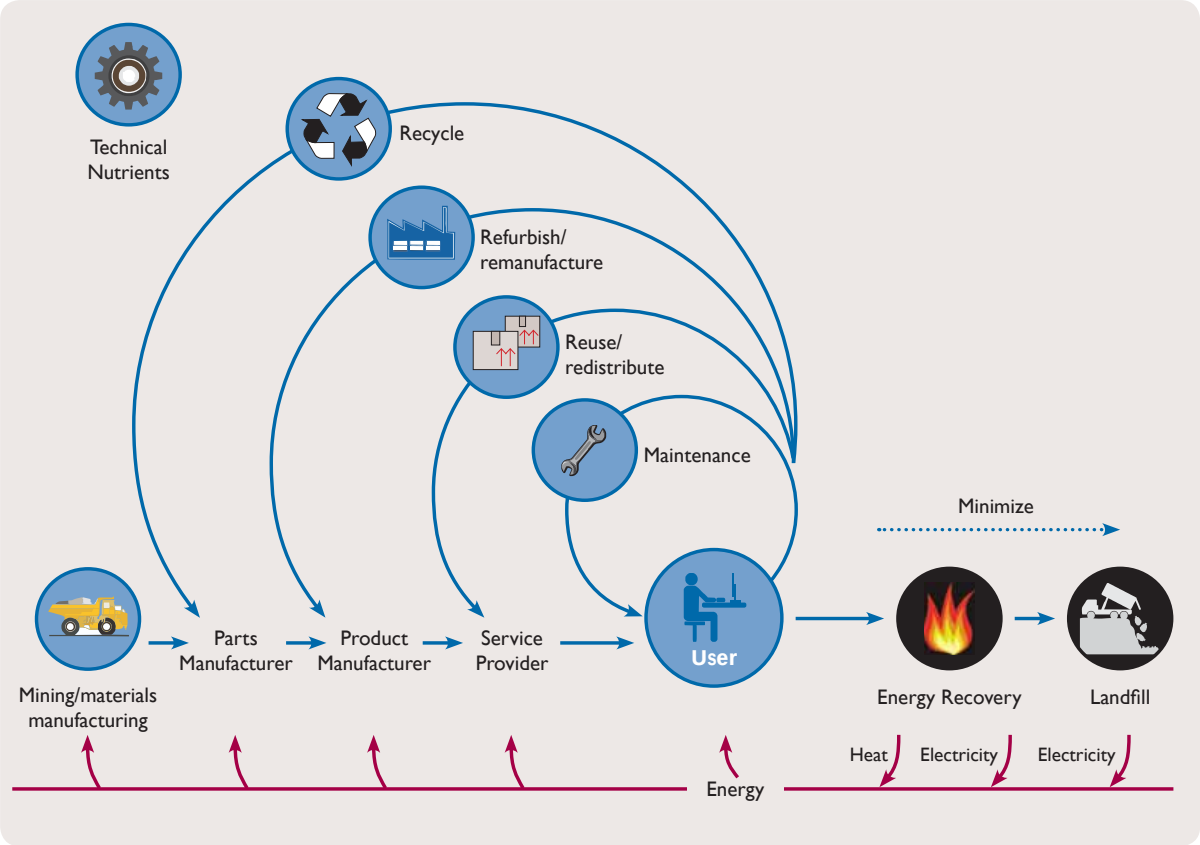


Figure 5-2 Material Resource and Waste Flows in a Circular Economy[33]

This strategy will continue to adopt and implement actions which support the **polluter pays principle** whereby the real costs of generating waste must be borne by the waste producer and waste holder. This includes illegal activities such as fly tipping and backyard burning, the cost of which is being unfairly borne by compliant citizens and businesses. Local authorities recognise that the principle is currently not being applied in line with the waste management hierarchy with inappropriate and inequitable collection and facility authorisation cost systems in place. The incorporation of this principle into the strategy will see local authorities address these issues through regulatory and enforcement actions aimed at levelling the playing field for households, businesses and operators.

Substantial waste infrastructure development has been authorised and built in the region and across Ireland over the past 15 years. The extent of available treatment capacity has been unknown across the regions as local authorities, the EPA and An Bord Pleanála all approve facilities in the absence of a single data source which tracks the treatment capacity of each authorised facility. This uncoordinated approach is no longer satisfactory and work has commenced on a system which will record the available treatment capacity at national and regional levels. The strategic approach over the plan will be to deliver **balanced and sustainable infrastructure** for the treatment of wastes in line with the strategic vision and waste hierarchy. Local authorities will take on board both the

[33] This modified figure has been developed from an image prepared by the Ellen MacArthur Foundation.

appropriate scale of authorisations and the proposed location of new developments for all facilities, in particular activities which require a permit or certificate of registration. Infrastructure of a certain type and scale will be assessed on the basis of regional and national needs.

The delivery of a balanced and sustainable infrastructure in the waste sector will be critical to meeting Ireland's climate change commitments in terms of both mitigation and adaption. The recently published Climate Action and Low Carbon Development Bill 2015 aims to transition Ireland to a low carbon, climate resilient and environmentally sustainable economy. If it is enacted the Government will be required to prepare a National Mitigation Plan which will specify the policy measures required to manage greenhouse gas emissions.

In 2013 greenhouse gas emissions from the waste sector accounted for 2.5% of total national emissions, equating to 1.466 Mt of CO_{2eq}. Annual emissions from the waste sector are largely stable since 1990 but Ireland needs to reduce emissions by 20% by 2020 (followed by a 40% cut by 2030 and an 80% cut by 2050). In this regard the development of treatment infrastructure which contributes to ongoing mitigation activities in the sector such as the diversion of biodegradable waste from landfill and capture and energy recovery of landfill gas, should continue.

Figure 5-3 Strategic Principles of the Plan

The principles of **self-sufficiency and proximity** are part of the strategic approach which underpins the waste plan. For residual, non-hazardous waste the aim of government policy is to develop indigenous recovery infrastructure to replace landfill, and for the State to become self-sufficient where possible. Local authorities support this objective and will work towards this national goal by implementing practical actions. The proximity principle will be applied in the context of the scale of proposed facilities.

In terms of addressing climate change, the principles of self-sufficiency and proximity in the waste sector will aid in the reduction of transport related greenhouse gas emissions for the state. Any future national mitigation strategy for the waste sector should be developed with a view enabling not only emissions reductions in the waste sector but also potential mitigation in other sectors such as energy and transport.

A fundamental principle of the strategic approach is **opportunity and growth** for existing industry operators, social enterprises, secondary material enterprises and start-up companies. The local authorities believe the sector has the potential to grow, to design innovative services and solutions and to create lasting employment. The local authorities will work will all stakeholders in support of new opportunities and new implementation structures are proposed to make this a reality.

The need for effective **cooperation** is fundamental to the success (or failure) of the strategic approach underpinning the plan. No single stakeholder can or will implement successfully the policies and actions of the plan. The local authorities have a new identity and role in the waste sector, as outlined in **Chapter 17**, and will focus on delivering the actions for which they have lead responsibility. Strong working relationships with industry operators are also needed for the sector to progress and the strategic vision to become a reality. The local authorities will adopt an open and consultative approach on all relevant matters to deliver effective and practical solutions.

The final principle of the strategic approach is to **protect** the environment of the region and its citizens from the harmful impacts of managing wastes. Environmental issues and impacts will be integrated into all decision making and assessment and will help to ensure that actions and developments are sustainable. The local authorities have been guided by the strategic environmental assessment and appropriate assessment in the preparation of the plan and will retain a focus on environmental and community protection throughout the period.

5.3 STRATEGIC OBJECTIVES

The strategic objectives for the plan represent the local authorities' statement of intent, embodying the strategic approach previously described. The strategic objectives are expanded further in **Chapter 19** of the document into more defined policy objectives and measurable actions.

5.3.1 Policy & Legislation

Implementing waste management legislation and policy measures will continue to be an important part of the local authorities' responsibilities under the waste plan. The waste plan covers a broad scope of waste streams, with the local authorities having regulatory obligations for many of these. Mandatory performance targets and policy measures are applicable during the plan period and the local authorities will play a key part in helping to deliver these. The local authorities will be committed to their legislative obligations as well as implementing other policy and guidance actions.

The region will implement EU and national waste and related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes.

5.3.2 Prevention

Developing and implementing waste prevention measures will be a priority for local authorities as part of the waste plan strategy. Tackling and breaking the links between economic growth and resource use is a real challenge for households, businesses and public bodies in the region. Lasting results require significant behavioural changes. The local authorities in the region will continue to build on prevention initiatives, focusing on those which have been shown to realise an effective change in behaviour. The strategic objective for the plan is as follows:

Prioritise waste prevention through behavioural change activities to decouple economic growth and resource use.

5.3.3 Resource Efficiency

Ireland's resource efficiency and productivity needs, to be improved – more value needs to be extracted from the resources we use and currently discard. Over the duration of the waste plan the local authorities will be focused on adding value to waste managed in the region and propose to implement a series of actions that contribute to the sector becoming more resource efficient and less wasteful. The local authorities believe that many opportunities are available to the sector, and the strategic objective reflects this view.

The region will encourage the transition from a waste management economy to a green circular economy to enhance employment and increase the value recovery and recirculation of resources.

5.3.4 Coordination

The restructured waste regions will present challenges and opportunities for the local authorities and regional lead authorities. The resources available to local authorities to deliver waste plan actions are limited and coordinating activities across the region will help to get the most from the resources available. The local authorities in the region will aim to foster strong working relationships with each other, private waste operators and other key stakeholders. The strategic objective for the local authorities is to:

Coordinate the activities of the regions and work with relevant stakeholders to ensure the effective implementation of objectives.

5.3.5 Infrastructure Planning

Ireland and the waste regions require the right balance of waste infrastructure to manage waste in a manner which optimises the value of the material and future market opportunities. Over the duration of the plan, the local authorities will communicate with each other on the authorisation of

waste treatment facilities in the region so that a consistent approach to standards and regulations can be implemented. A similar attitude of engagement will be followed by the regional lead authorities between themselves and bodies such as An Bord Pleanála for large-scale waste treatment infrastructure.

The region will promote sustainable waste management treatment in keeping with the waste hierarchy and the move towards a circular economy and greater self sufficiency.

5.3.6 Enforcement & Regulation

For many of the waste streams covered in the waste plan, local authorities are tasked with enforcing and regulating the system of management. The role of local authorities in this area is expected to grow over the plan period requiring effective coordination and assignment of resources. The strategic objective set by the local authorities reflects the need for resource and knowledge sharing. This strategic objective and associated policy actions will be the responsibility of the lead authority for waste enforcement.

The region will Implement a consistent and coordinated system for the regulation and enforcement of waste activities in cooperation with other environmental regulators and enforcement bodies.

5.3.7 Protection

Protecting the environment and health of citizens in the region from potential adverse impacts resulting from waste management activities is a key responsibility of the local authorities. The location of waste facilities can help to address many of their potential impacts, and local authorities will aim to improve guidance in this area. The strategic objective has been agreed by the local authorities to:

Apply the relevant environmental and planning legislation to waste activities in order to protect the environment, in particular European sites, and human health against adverse impacts of waste generated.

5.3.8 Other Wastes

The scope of the waste plan is broad and the local authorities recognise that there are many minor waste streams generated in the region whose management also needs to be taken into consideration. Many of these waste streams do not have a specific statutory instrument in place to govern their management. The local authorities propose to set out policy objectives and actions in this area to tackle certain minor streams and, where possible, to create a better system for their management. The strategic objective is as follows:

The region will establish policy measures for other waste streams not subject to EU and national waste management performance targets.

5.4 TARGETS OVER THE PLAN PERIOD

In considering the designation of headline targets for the plan the local authorities have examined mandatory national and European, European targets, proposed targets and policy ambitions.

5.4.1 Mandatory Targets

The plan will run over a six year period, with a revised or replacement plan expected to follow in 2021. During the lifetime of the plan several mandatory target deadlines will apply to Ireland. Each of these targets has been reviewed by the local authorities, who are committed to contributing to their achievement within the designated timeframe. A summary of these targets is provided in **Table 5-1**.

Table 5-1: Mandatory Targets over the Plan Period

Waste Stream	Preparing for Reuse and Recycling Target	Timelines
Paper, Glass, Metal and Plastics of the Household Stream and/or Similar Wastes	50%	2020
	Preparing for Reuse, Recycling and Material Recovery Target	
Construction & Demolition Wastes (excluding soil and stones)	70%	2020
	Maximum Quantity of BMW to Landfill Target	
Biodegradable municipal waste	427,000 tonnes	July 2016
	Reuse and Recovery Target	
End of Life Vehicles	95%	January 2015
	Reuse and Recycling Target	
End of Life Vehicles	85%	January 2015
	Collection Rate Target	
Batteries and Accumulators	45%	September 2016
	Recovery and Recycling Rate Target	
WEEE	% recovery and recycling target varies depending on category of WEEE[34]	August 2015

Ireland is well placed to achieve a number of these targets. The WFD requires Member States to achieve a preparing for reuse and recycling rate of 50% for paper, metal, plastics and glass from households and possibly from other similar origins by 2020. The latest available data shows that Ireland is on track to achieve this, with a rate of 45% recorded in 2012. The Directive also requires a 70% reuse, recycling and materials recovery rate target of non-soil and stone construction and

[34] European Union (Waste Electrical and Electronic Equipment) Regulations 2014, S.I. No. 149 of 2014.

demolition waste to be achieved by 2020. The State is currently exceeding this target, with a rate of 97% recorded in 2012.

The final BMW to landfill target will need to be met by July 2016. By this date the maximum quantity allowed for disposal in the State is set at 427,000 tonnes. Provisional data for 2013 indicates that this future target will be met as an estimated 381,000 tonnes of BMW was landfilled in 2013.

The mandatory targets for two other streams, ELVs and batteries and accumulators, portable batteries only are also to be reached during the plan period. The achievement of both of these targets by the statutory timelines is at risk and is not expected to be met.

In relation to ELVs there is a need to improve the level of dismantling of non-metallic components prior to shredding and the level of post-shredder processing to extract recyclable materials such as metals and plastics. The authorisation of ATFs in the region is primarily a local authority responsibility and in response to improving the reuse and recovery rates, local authorities will require operators to provide enhanced processing techniques as part of their on-going authorisation. The current rate of collection for waste batteries and accumulators is 28%. Local authorities in the region will commit to working with producer responsibility operators to increase the awareness and collection of this stream during the duration of the plan.

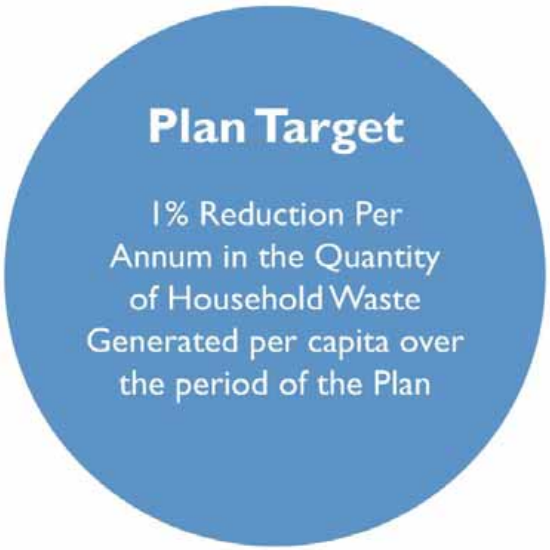
5.4.2 Performance Targets

The aim of the local authorities is to progress the management of materials, resources and waste in the region in line with the plan's strategic vision. Increases in material recycling, resource efficiency and prevention are goals for the region. Performance targets, in addition to mandatory national targets, are proposed for the plan to provide a benchmark that local authorities can work together to meet. The proposed targets are specific and represent a quantifiable level to be obtained. As part of their annual reporting, local authorities will monitor and quantify progress towards the meeting of these targets.

The targets are focused on the activities and waste streams in which local authorities have a strong role and as a consequence have more influence on the outcome. The performance targets have been discussed by the lead authorities in the three waste regions and have been agreed for each region. This coordinated approach will ensure there is consistency for operators in the waste market irrespective of their area of operation. It is also hoped that it will facilitate cooperation between the DECLG, the EPA and local authorities in resolving market issues which are acting as a barrier to the targets being achieved.

The prevention of waste and the decoupling of resource use from economic growth is a key component of the strategic vision and objectives of the waste plan. Promoting and implementing the challenge of preventing waste in the face of resurgent national economic activity requires continuous attention and resources. From 2007 to 2012 the amount of household waste generated per capita in Ireland declined from 0.41 to 0.34 tonnes. From a waste prevention perspective this is a welcome trend, and many factors are contributing to it. Prevention activities are playing a part, although the evidence indicates that the primary influence is a significant contraction in the national economy resulting in a significant decrease in household disposable income over the period. The concern is the potential for waste to grow as economic activity across all sectors increases.

The focus of this target is on household waste, reflecting the important role local authorities have in preventing and managing the household waste stream. Prevention targets for other sectors, such as construction and industrial sectors, are also valid but it is suggested that these be looked at as part of Ireland's overall approach to implementing a coordinated resource efficiency programme. The 1% reduction per annum aims to focus local authority activities in the area of prevention. This is the first time a waste prevention target has been formalised in Ireland and its implementation presents both an opportunity and a challenge. The proposed reduction is measurable and will be reported on annually, and if achieved will deliver a 7% drop in household waste generated over the duration of the plan. The inclusion of a prevention target demonstrates commitment in this area and is in line with prevention programmes in leading Member States.



Municipal waste is a key waste stream for Ireland and the prevention of waste arisings in this stream is an ongoing challenge. Ireland has made steady progress in terms of improving the management of this stream, with recycling rates increasing from less than 5% in the late 1990s to 40% by the end of 2012. The data shows that continued growth in this area will rely on high-quality presentation and collection of dry recyclables coupled with a significant increase in the participation and capture rates of organic waste. The progressive roll-out of the brown bin will help, although this must be supported by continuous awareness, education and enforcement activities.

The local authorities along with private waste collectors play an important role in the management of municipal waste. The proposed target mirrors that of WFD although it is broader, encompassing material recycling and composting (biological treatment) rates. The aim is to maximise the diversion and recycling potential of the household and commercial kerbside source segregated collection systems. This target also encompasses preparing for reuse activities, which have the potential to become an important part of the material resource sector. Within the timeframe of the plan the target is a realistic one, reflecting the resources and finances available to local authorities to contribute towards its achievement. The target if achieved will reflect the ambition of the sector to move towards a circular economy and will be a stepping stone for further progress.

Waste management in Ireland has moved away from landfill, and in 2012 the rate of disposal reached its lowest level to date of 41%. The landfill levy has been a key driver in this transformation, artificially inflating the disposal price in favour of environmentally preferred treatments. The number

of landfills operating in Ireland has dropped to six, with two facilities (Rathroeen, Mayo and Scotch Corner, Monaghan) operating in the CUR in early 2015. The regions are proposing to build on this treatment shift and respond to the government's policy's call for the elimination of landfill.

The target is proposed in direct response to European and national policy. The landfills in Ireland are licensed by the EPA, which sets conditions governing the treatment activities, environmental controls, aftercare and associated financial arrangements. Planning permission approvals for landfills also impose conditions addressing various other issues such as the lifespan of the site. The forced closure of a landfill is not within the remit of a local authority unless it is the operator of the site. This aside, local authorities can influence the movement of waste through the prescribed conditions of waste collection permits.

Under primary legislation the local authorities have statutory responsibilities to ensure that waste undergoes recovery operations and they must take appropriate measures to establish an integrated and adequate network of installations for the recovery of mixed municipal wastes. National policy is similarly direct, stating that a key objective of the plans is to ensure there is sufficient waste management infrastructure to manage municipal waste arising within the State. The clear preference is for the treatment of Ireland's residual waste to be undertaken at Irish facilities to the benefit of Irish businesses, citizens and the economy as a whole. In response to these requirements local authorities must act and continue to move waste to recovery outlets preferably within the State and make efforts to address the growing trend of exporting residual wastes.

** Unprocessed residual waste means residual municipal waste collected at kerbside or deposited at landfills/ CA sites/ transfer stations that has not undergone appropriate treatment through physical, biological, chemical or thermal processes, including sorting.*

The target proposes to eliminate the direct disposal of municipal waste to landfill by 2016. This timeline is in keeping with other related statutory commitments such as the deadline for the completion of the household brown bin collection roll-out and reduced landfilling of BMW. The implementation of this target will help to ensure that all residual municipal waste from 2016 onwards is directed to indigenous pre-treatment facilities or other recovery outlets for processing and treatment.

5.5 GOALS FOR 2030

The latest national waste policy has set out measures and actions to be taken and delivered up to 2020. Local authorities recognise that within the period of the current plan there is a limited amount which can be achieved. There is a need to think beyond the end of the plan and consider the long-term outcome.

In response to this, local authorities have set out long-term goals in the areas of prevention, recycling and disposal, mirroring the performance targets which have been agreed. The targets take

their lead from the European Commission's policy agenda on circular economy and the ambition for recycling rates to increase across all Member States and an end to the practice of landfilling to be realised. A preparing for reuse and recycling target of 60-70%, equivalent to the current best practice across Europe, has been set by the authorities as the benchmark for the regions and Ireland to aim for.

Future Targets to 2030
Absolute decoupling of household waste from economic growth and disposable income
Preparing for reuse and recycling rate of 60-70%[35] of municipal waste by the end of 2030
Reduce and where possible eliminate landfilling of all major waste streams including municipal, industrial and construction and demolition wastes in favour of the recovery of residual wastes

Economic growth is the most significant driver in terms of waste generation and the absolute de-coupling of this from household waste generation will be a significant challenge requiring fundamental changes in behaviour by householders across the State. The policy actions being taken over the duration of this plan are the first steps towards a much bigger goal.

In terms of disposal, the ambition of local authorities is to cease landfilling activities for all major waste streams by 2030. The preferred treatment method for non-recyclable residual waste will be recovery and the local authorities will work with other stakeholders towards this outcome. This transition reflects the ambition of the authorities to make better use of and extract the most value from products, material resources and waste.

Achieving these long-terms goals will require the cooperation of central government and cross-sectoral support from public authorities and private operators in the industry.

[35] Discussions are on-going between the European Member States regarding the proposed mandatory recycling rate target, which is expected to be within this range.

6 REGIONAL PROFILE

6.1 GENERAL DESCRIPTION OF THE REGION

The CUR consists of the administrative areas of Galway City, and counties Galway, Mayo, Roscommon, Sligo, Leitrim, Donegal, Cavan and Monaghan. The region has a population of 837,350 based on the CSO 2011 Census figures, which represents 18.24% of the national population. The region has an overall area of 2,580,140 hectares or 37% of the total area of the country.

The region is bordered to the west by the Atlantic Ocean and to the north-east by Northern Ireland. The region is bordered to the east by the counties of Louth, Meath, Westmeath, Longford and Offaly, all of which are in the Eastern and Midlands Waste Region. The region is bordered to the south by County Clare and County Tipperary, both of which are in the Southern Waste Region. **Figure 6-1** shows the geographical area of the region.

6.1.1 Galway City

Galway City is located in the south of the region and is the largest urban centre, with a population of over 75,000. The city has grown rapidly in recent years and has a strong local economy with complementary business and manufacturing sectors. The city is a significant tourism hub and is known as Ireland's cultural heart, with numerous festivals taking place throughout the year. It is divided by the River Corrib which drains Lough Corrib, the Republic of Ireland's largest lake, into Galway Bay. Galway City is home to a significant cluster of Biomedical Industries located in a number of business and industry parks around the city. It is also home to the National University of Ireland Galway and the Galway Mayo Institute of Technology, which account for a transient student population of more than 25,000 per year.

6.1.2 County Galway

County Galway is located at the southern end of the region and bordered by counties Clare and Tipperary to the south, Mayo and Roscommon to the north and Offaly to the east. The county is the second largest in the state, representing almost 9% of the national area. Lough Corrib divides the county east and west with Connemara being the dominant region in the west, representing a major tourist attraction. The county has a number of offshore islands, most notably the Aran Islands and Inish Boffin. The main urban centres are Tuam, Ballinasloe, Loughrea and Oranmore.

6.1.3 County Mayo

County Mayo is located in the south-west of the region and is bordered by County Galway to the South, Roscommon to the east and Sligo to the north. County Mayo is the third largest county in the state, representing over 8% of the national area. The county is home to the state's largest offshore island, Achill, and has many other offshore islands including Clare Island and Inish Turk. The main urban centres are Castlebar, Ballina, Westport, Claremorris and Ballinrobe, with many smaller towns and villages. The county is largely rural with a distinct difference between the quality of land in the north and south, the south being somewhat better in agricultural terms.

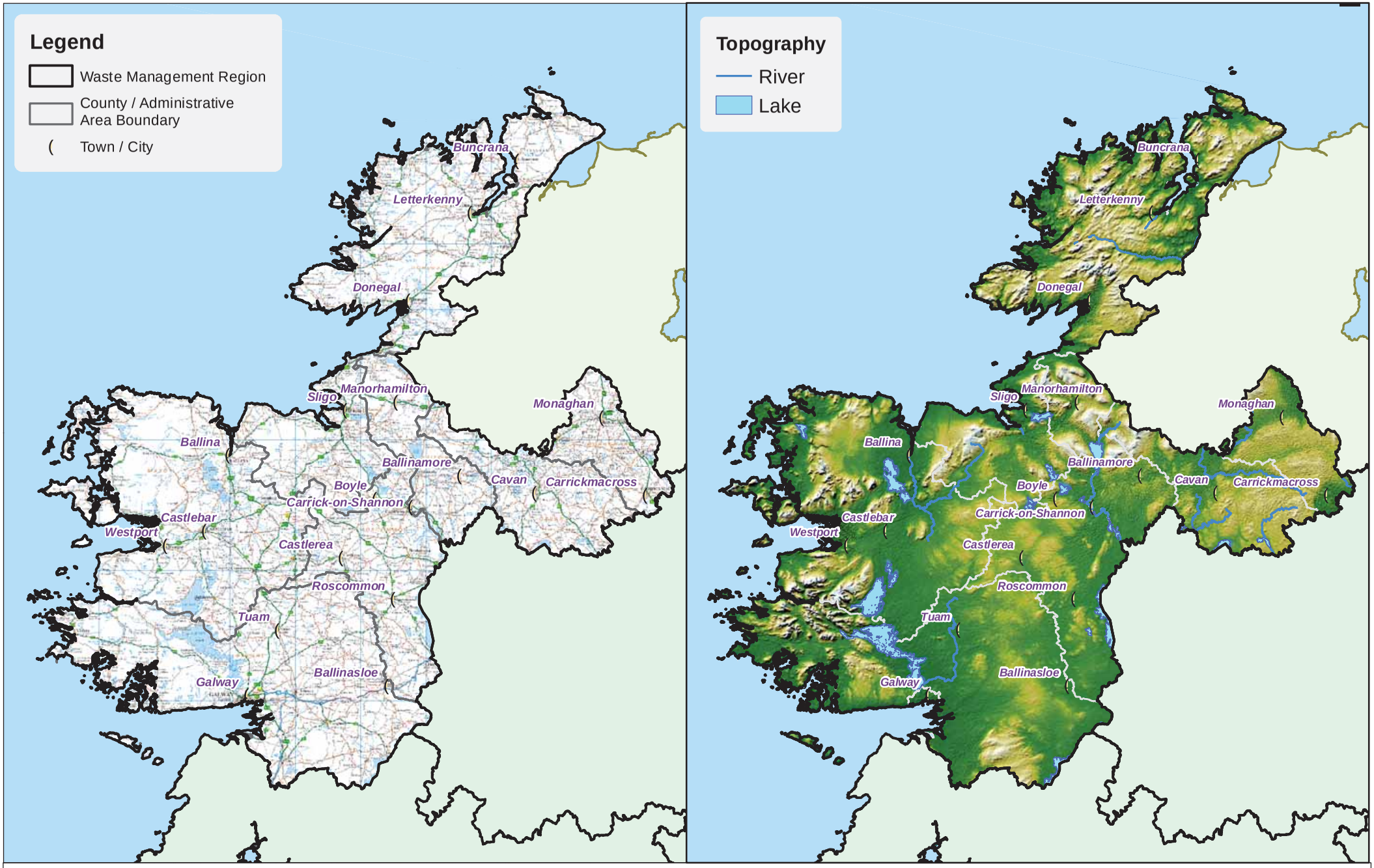


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Figure 6-1 Map of the Geographical Area of the Region

6.1.4 County Roscommon

County Roscommon is located in the south-east of the region and is bordered by Galway to the south, Mayo to the north and counties Leitrim, Longford, and Westmeath to the east. Roscommon is home to the geographical centre of Ireland, located on the western shore of Lough Ree near the village of Leacarrow. The county is mainly rural with the predominant activity being agriculture. The main urban centres are Roscommon town, Boyle, Castlerea, Monksland, Cortober and Ballaghaderreen. While the county is landlocked it is the home to many fine waterways and lakes and contains the longest stretch of the River Shannon. Roscommon is one of the least densely populated counties in the country.

6.1.5 County Sligo

County Sligo is located in the centre of the region and is bordered by counties Mayo, Leitrim and Roscommon. Sligo's distinctive countryside of mountains, lakes and beaches offers a wide range of activities to visitors. Dominated by the loaf-shaped Benbulben Mountain the main urban centres are Sligo Town, Tubbercurry and Ballymoate. Sligo is home to a number of multinational companies and also has the Sligo Institute of Technology located in the town. The county has over 5,000 archaeological sites including the megalithic grave complex at Carrowkeel.

6.1.6 County Leitrim

County Leitrim is located in the centre of the region and bordered by County Sligo to the west, County Donegal to the north, County Cavan to the east and counties Longford and Roscommon to the south. Leitrim is the least densely populated county in the country, with a population of 31,798 (CSO, 2011) or 0.7% of the total population and 2.3% of the land area of the state. Leitrim has a hilly and mountainous landscape in the north part of the county and is relatively flat in the south. The county is divided by Lough Allen. It has the shortest length of coastline at 2.5 km, located at Tullaghan. The Shannon Erne Waterway, Europe's longest inland navigable waterway, stretches through the county. The main urban centres are Carrick on Shannon and Manorhamilton.

6.1.7 County Donegal

County Donegal is located in the north-west of the region and is bordered to the south by County Leitrim and to the east by counties Derry, Tyrone and Fermanagh. County Donegal is the fourth largest county in the state and is the most mountainous of the region, with the Derryveagh Mountains in the north and the Bluestack Mountains in the south. The county is home to many Gaeltacht areas in the west around Rosses, Gweedore and Falcarragh. In the north of the county is Ireland's largest peninsula, Inishowen, which contains Ireland's most northerly point at Malinhead. The county has numerous offshore islands, the most notable being Arranmore and Tory Islands. The county has a deeply indented Atlantic coastline giving rise to numerous sea Loughs, the most significant being Lough Swilly and Lough Foyle to the west and east of Inishowen respectively.

The main urban centres are Letterkenny, Donegal Town, Carndonagh and Ballybofey, with numerous other towns and villages throughout the county. Killybegs harbour is a major sheltered deepwater facility and is Ireland's premier fishing harbour.

6.1.8 County Cavan

County Cavan is located in the east of the region and is bordered to the west by County Leitrim, to the south by counties Longford, Westmeath and Meath and to the north by counties Fermanagh and Monaghan. The county is characterised by drumlins, with many lakes, and is known as the Lakeland county. Cavan is the source of some of Ireland's great rivers, including the Shannon and the Erne. Agriculture is the largest industry, especially dairy milk production and pig and beef farming. Other industries include quarrying, manufacturing and energy production. The main urban centre is Cavan Town.

6.1.9 County Monaghan

County Monaghan is located in the north-east of the region and is bordered by counties Fermanagh, Tyrone and Armagh to the north and counties Cavan, Meath and Louth to the south. The county is dominated by drumlins, with many lakes in the hollows between the hills. Agriculture and food production account for over 60% of the county's employment, with poultry production accounting for some 40% of the national output. Other agribusinesses include dairy and beef production and the production of mushrooms. The main urban centres are Monaghan Town, Carrickmacross, Clones, Ballybay and Castleblayney.

6.2 POPULATION

The population of the Connacht Ulster Region in 2011 was 837,350 (*CSO, 2011*), representing an increase of 65,965 or 8.5% since the previous census in 2006. The population of the Connacht Ulster Region is 18.2% of the total population while the region has 36.7% of the land area.

The total number of households in the region is 303,141 (*CSO 2011*), giving an average occupancy of 2.76 persons per household. This represents 18.2% of total households nationally. The number of households in 2011 had increased by 37,190 or 14% since the 2006 Census. The distribution of the regional population is shown in **Figure 6-2**.

A summary of population and household data is presented in **Table 6-1**.

Table 6-1: Population and Household Figures, Census 2006–2011

Local Authority	2006 Population	2011 Population	% Change	2006 Private Households	2011 Private Households	% Change
Galway City	72,414	75,529	4.3	25,353	27,857	9.9
Galway	159,256	175,124	10.0	53,308	61,157	14.7
Mayo	123,839	130,638	5.5	43,431	48,198	10.9
Roscommon	58,768	64,065	9.0	20,734	23,718	14.4
Sligo	60,894	65,393	7.4	21,480	24,593	14.5
Leitrim	28,950	31,798	9.8	10,646	12,334	15.9
Donegal	147,264	161,137	9.4	50,415	58,099	15.2
Cavan	64,003	73,183	14.3	21,929	25,869	18.0
Monaghan	55,997	60,483	8.0	18,655	21,316	14.3
Totals	771,385	837,350	8.5	265,951	303,141	14

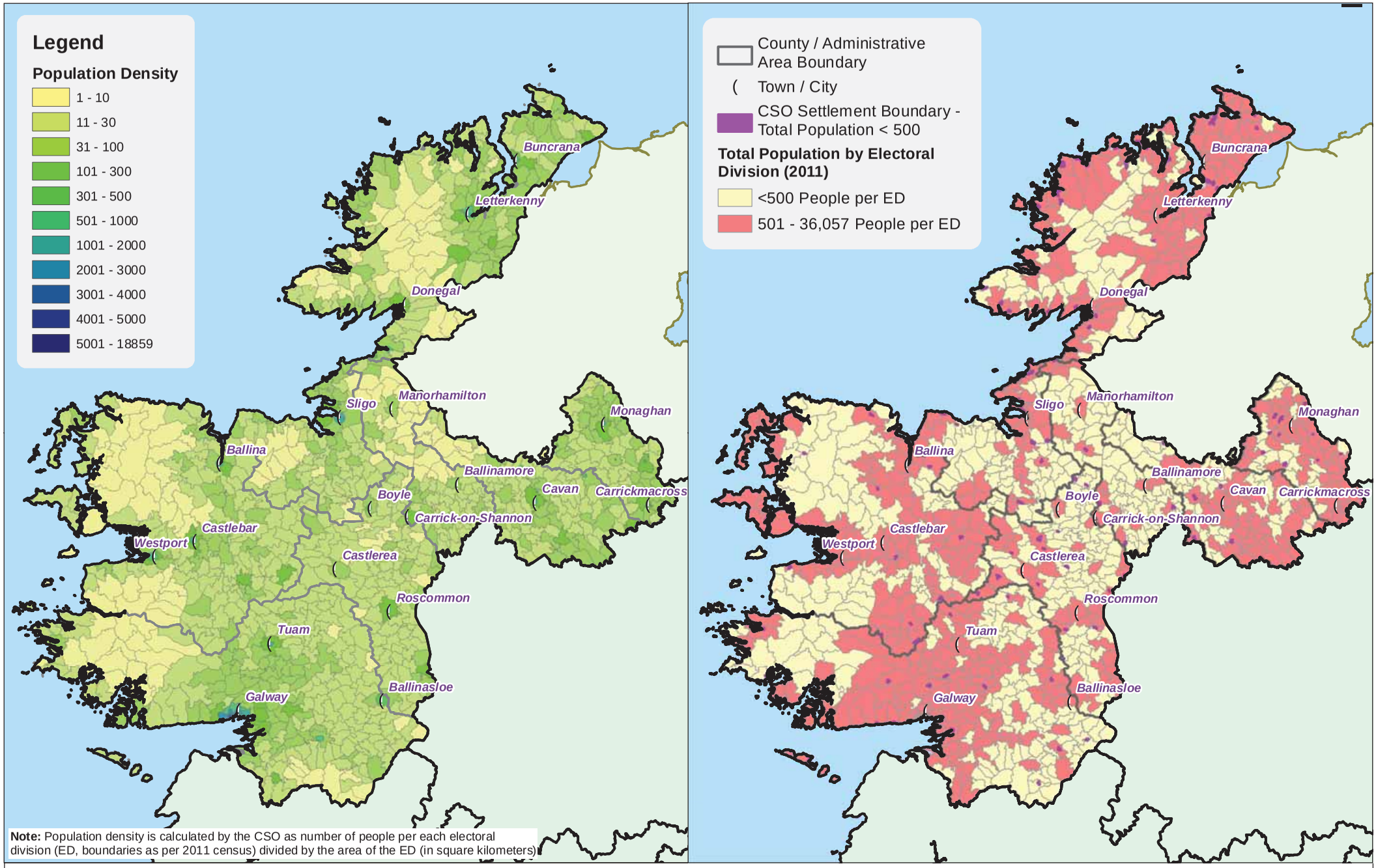

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Figure 6-2 Regional Population Density & Distribution

RPS

6.2.1 Urban Population Distribution

The distribution of the population between urban centres and rural areas has a direct impact on the provision of waste collection services, as the costs and the efficiencies associated with urban areas are better compared with rural areas. This is particularly significant for the Connacht Ulster Region, as 66% of the population resides outside of urban centres while 34% reside in urban centres. This compares with the overall national position whereby 61% of the population reside in urban centres while 38% reside in rural areas.

Table 6-2: Urban and Rural Population Distribution

Local Authority	2006 Urban	2006 Rural	2011 Urban	2011 Rural
Galway City	72,414	0	75,529	0
Galway	27,342	131,914	39,546	135,578
Mayo	35,678	88,161	37,895	92,743
Roscommon	14,334	44,434	16,662	47,403
Sligo	19,402	41,492	24,334	41,059
Leitrim	25,95	26,355	3,314	28,484
Donegal	36,585	110,679	44,274	116,863
Cavan	16,913	47,090	22,034	51,149
Monaghan	15,988	40,009	17,772	42,711
Totals	241,251	530,134	281,360	555,990
% Split Urban-Rural	31%	69%	34%	66%

6.2.2 Urban Centres

The largest urban centre in the region is Galway City, with a population of 75,529. There are 45 urban centres in the region with a population greater than 1,500. The number of people residing in urban centres in 2011 had increased by 28,859 (12%) since the Census of 2006.

There are two urban centres with a population greater than 15,000, namely Letterkenny (19,588) and Sligo (19,452). There are three urban centres with a population greater than 10,000 but less than 15,000, namely Castlebar (12,318), Ballina (11,086) and Cavan (10,205).

There are seven urban centres with a population greater than 5,000 but less than 10,000, and there are six centres with a population greater than 3,000 but less than 5,000. The remainder of the urban centres have a population greater than 1,500 but less than 3,000.The distribution of major urban centres is shown in **Figure 6-2**.

6.3 LANDUSE

Landuse in the CUR is predominantly agricultural outside of the main urban centres. Many areas are dominated by peat lands, which are mainly unused. The main agricultural activity in the west of the region is livestock production, with extensive areas of pasture land alongside peat land. There are also significant areas of moors and heath lands and the Atlantic coast is lined with dunes and sandy beaches alongside steep cliffs at some locations.

A large proportion of the west of the region is designated nature reserve, from the Connemara National Park in Galway to the Ballycroy National Park in Mayo to the Glenveagh National Park in Donegal. The region also has a number of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). There are coniferous and broadleaf forests throughout the region and some mixed forests can also be found. According to the National Forest Inventory Results Data 2012 there are 262,870 hectares of land in the region under forest, which represents 35.9% of total forestry in the state.

Landuse in the east of the region is also predominantly agricultural; there are however also several locations of the extractive industry. The area contains numerous sites for the quarrying of sand, gravel, stone and limestone. Food and beverage production is common in this area. The location of environmentally sensitive and protected areas is shown in **Figure 6.3**.

6.4 TOPOGRAPHY

The topography of the region is extremely varied, from the rocky landscape of Connemara in West Galway to the mountains of Donegal and the drumlins and lakes of Cavan and Monaghan. The region is home to three of the six designated National Parks, at Connemara, Ballycroy and Glenveagh.

The topography of the south-west of the region including Galway City and County and counties Mayo, Roscommon, Sligo and Leitrim is variable, containing mountains, lowland plains, rivers and inland lakes. The main mountain ranges are the Maumturk, Partry, Nephin and Ox mountains, which follow the Atlantic coastline. The highest peak in the area is Mweelrea, 817 m OD, which is situated just north of Killary Harbour in County Mayo. A drumlin belt crosses this area from north-east to west, terminating in Clew Bay in a series of islands. Lough Corrib and Lough Mask divide the mountainous areas of the west from the more fertile areas of the east. The area was heavily glaciated, with many areas stripped of soil and resulting rock surfaces featuring innumerable small lakes and bogs.

The blanket bogs and moorlands of Connemara have many unusual bog and heathland plants and the area has a significant number of Special Protection Areas. There are two National Parks at Connemara and Ballycroy. The Connemara National Park covers some 2,957 hectares while the Ballycroy National Park covers over 11,000 hectares of Atlantic blanket bog and mountains, dominated by the Nephin Beg mountain range. The coastline varies from mountainous in counties Galway and Mayo to flatter relief in counties Sligo and Leitrim, and is heavily indented with many peninsulas and small islands. The many offshore islands in this area have varied topography, from the rocky Aran Islands with steep Atlantic cliffs to Achill Island with its mountainous landscape.

The topography of the north of the region is dominated by County Donegal, which consists largely of mountainous areas which make up over 45% of the county's land type. The main mountain ranges are the Bluestack mountains in the south of the county and the Derryveagh and Glendowan mountains in the north of the county, lying either side of Glenveagh National Park which encompasses over 16,000 hectares of wilderness in the heart of the Derryveagh mountains. The highest peak in the county is Mount Errigal, 752 m OD, and the county is home to the highest sea cliffs in Europe at Slieve League in the south-west. Rolling lowland accounts for some 43% of the land type and is most common in the north-east of the county. The coastline is heavily indented and is the longest in Ireland at 1,134 km. The many inlets provide suitable locations for aquacultural activities and the county is also home to the country's premier fishing port at the Killybegs deepwater harbour. The topography of the many offshore islands is similar to that in the west of the region, varying from the rocky outcrop at Tory Island to the flatter and more fertile landscape of Arranmore Island.

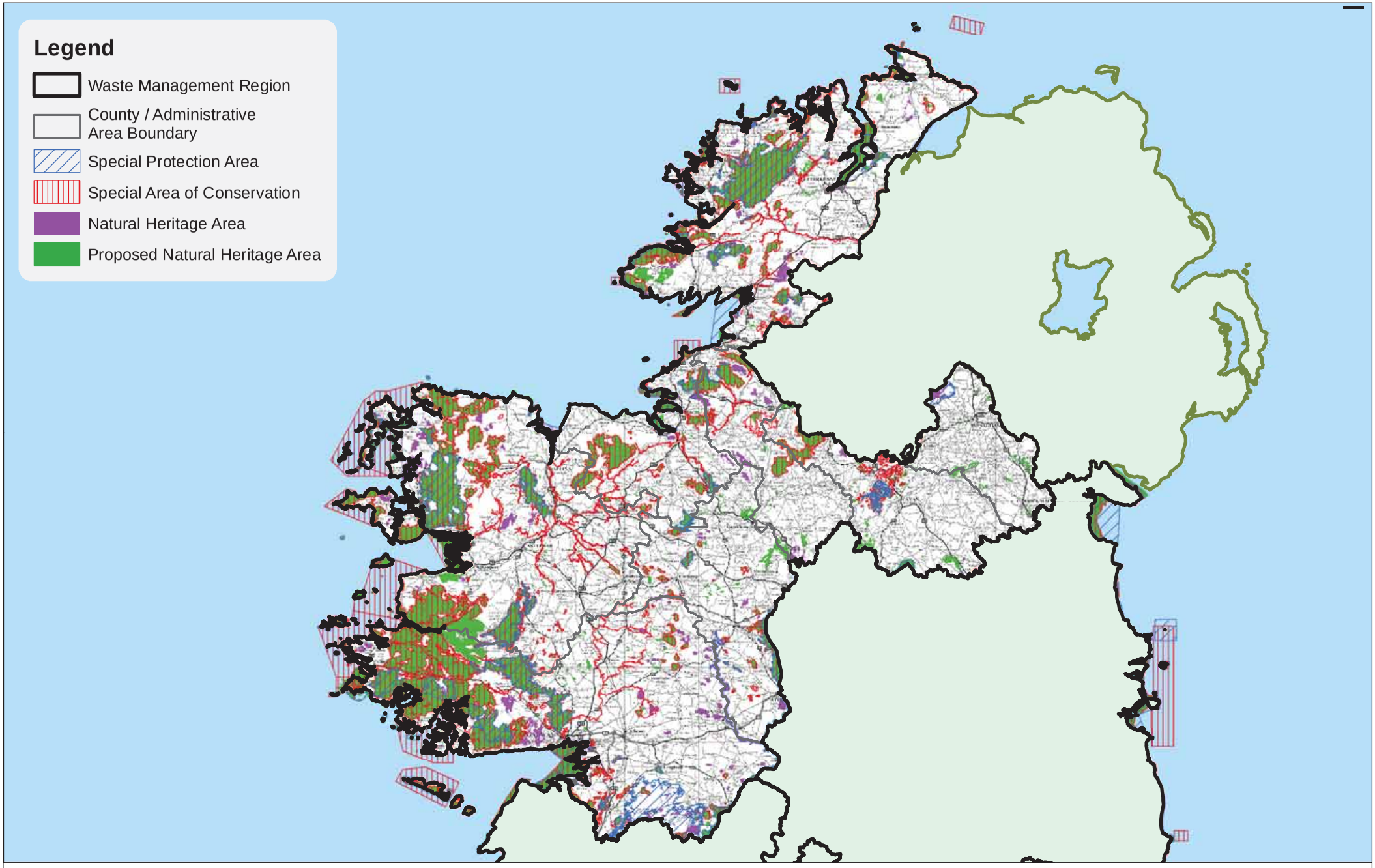

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Figure 6-3 Environmentally Sensitive and Protected Areas

RPS

The topography of the east of the region is dominated by the drumlins and lakes of counties Cavan and Monaghan. The topography of County Cavan is post–glacial; however, the western part of the county terminates in the wall of the Cuilcagh mountains, the lower western flanks of which are the source of the River Shannon. The highest peak in the county is Cuilcagh, 665 m OD. The centre of the county consists of a lowland zone which is dominated by the river Erne and its tributaries. County Cavan has over 350 lakes of which Lough Sheelin is the largest and is located in the south of the county on the border with Meath and Westmeath. County Monaghan, also known as the land of drumlins, has a physical landscape that is common throughout southern Ulster, formed as a result of unevenly spread glacial deposits at the end of the last Ice Age. The drumlins do not follow a particular alignment or pattern, with dividing valleys characterised by occasional marshlands and Loughs. The Slievebeagh mountains form a ridge of high land along the north-western end of the county on the border with Tyrone while the largest lake in the county, Lough Muckno, is the centrepiece of a 900 acre park adjacent to Castleblayney.

The general topography of the Connacht Ulster Region is presented in **Figure 6-1**.

6.5 GEOLOGY

The geology of the south-west of the region including Galway City and County and counties Mayo, Roscommon, Sligo and Leitrim is variable and complex, varying significantly from east to west. In the west of this area the geology is predominantly Caledonian with both igneous and metamorphic rocks. In the Connemara area the rocks range from Silurian and Ordovician to Dalradian in origin while in Galway intrusive granites predominate. In the east of this area the main origins of the solid geology are Devonian and Carboniferous in County Roscommon and East Galway. Further north in the area the Dalradian, Ox Mountain/Rosses point Inliers is the main geological feature, composed of granites and schists. Counties Sligo and Leitrim are dominated by middle and upper Carboniferous limestones.

In the south of the area the geology becomes more uniform, being predominantly lower or middle carboniferous limestone. County Roscommon is dominated by shallow water limestones with small areas of Devonian Old red Sandstone. Further west the geology becomes much more complex. Coastal Mayo is dominated by a series of metamorphic rocks with igneous intrusions.

The geology of County Galway features the Connemara mountains in the west, which merge with the central lowlands to the east. Connemara is composed of Silurian and Ordovician rock in the north. Further south the Connemara Inliers consists of Dalradian rocks similar to those found in County Mayo. The area around Galway City is predominantly Galway Granite formed during the early Devonian or late Caledonian. East Galway is similar to the Geology of Roscommon, comprising mainly carboniferous limestones with small areas of Old red sandstone and Mudstone.

The geology of the north of the region is also complex; the main geological formations to be found in County Donegal can be summarised as follows. Gneiss, a coarsely crystalline banded metamorphic rock, forms the oldest rocks to be found in the county and can only be seen on the island of Inishtrahull north-east of Malin Head. The most widespread rocks to be found in the county are Dalradian Metasedimentary Rocks which were converted to schists and quartzite during mountain forming in the Ordivician period. Quartzite is mainly quarried north-east of Letterkenny and used in road building. Granite intrusions are a feature of the west of the county and make up the largest upland massif in the region, including the Derryveagh Mountains and the low lying ground in the Rosses area. Major fractures running through the rocks have been exploited by erosional forces to produce long straight valleys, the most dramatic of which is the deep valley of Glenveagh that separates the Derryveagh and Glendowan Mountains. Devonian Sandstone is only found in small

localised areas of Donegal including an area near Portsalon on Fanad Head. Dolerite can be found as intrusions within older rocks.

The geology of the north-east of the region, comprising counties Cavan and Monaghan, is a continuation of the Southern Upland Fault in Scotland which runs from Scotland to the coast of County Down and further south-west to Carlingford and Monaghan, ending in County Longford. This section of the fault is known as the Longford-Down Inlier. The bedrock is Ordovician and Silurian sandstones and consists of siltstones and shales with small pockets of tuffs and lavas. The Carlingford mountains are granitic igneous intrusions that were formed during the tertiary period. These give way westward to the drumlin area of County Monaghan. The drumlins were formed in the Quaternary period and are glacial features. The densely packed till resulted in land that is difficult to drain, hence the numerous lakes in this part of the region. Monaghan geology consists of a series of sandstone shale and siltstone formations which are similar to those of the southern upland fault and are carried on to the north and east as far as the southern uplands of Scotland. In the northwest of Cavan the rocks are carboniferous in origin, consisting of limestones which make up the higher ground on the Cavan/Fermanagh border. Further south in the centre of Cavan the geology is predominantly Ordovician and Silurian, dominated by Greywackes and shales to the east.

6.6 HYDROGEOLOGY

The hydrogeology of the west of the Connacht Ulster Region is dominated by regionally important aquifers which vary in size and quality. The coarser limestones, especially in County Sligo, have a considerable yield, as do the limestones of East Galway and Roscommon. Further south in the region the water bearing rocks are few and the geology is mainly igneous and metamorphic in origin, resulting in secondary porosity only. In County Sligo the upper carboniferous limestone formations are the regionally important aquifers, the majority of which are karstified with variable yields. Further west in Connemara, West Mayo and the Ox Mountains aquifers are poor yielding as the predominant geology is igneous and metamorphic in origin, providing little porosity and permeability. There are some locally important aquifers along the west coast of Mayo and in the Connemara area and the granites in West Galway can give small yields, particularly in the fault zones. There is a regionally important lower carboniferous limestone aquifer which stretches from Oughterard and Moycullen in the west to Elphin and Athlone to the east of the region.

Nationally groundwater resources provide about 25% of all drinking water supplies. However, in County Donegal it is estimated that groundwater supplies only about 2% of the total water supply as most of the county is underlain by crystalline basement rocks which are poor aquifers. Generally groundwater quality in Donegal is good except where there are localised sources of pollution such as septic tanks, intensive agriculture or industrial pollution. In many areas underlain by grey soils or boulder clays heavy rainfall runoff is common due to the heavily consolidated deposits

The most significant aquifers in the east of the region are the Ballysteen, Dartry, Meenymore and Maydown Limestone formations. These aquifers are located in counties Cavan and Monaghan. There are other regionally important aquifers in the south of County Cavan in the Lough Sheelin area and the Mullintra aquifer at Kingscourt.

6.7 HYDROLOGY

6.7.1 Rivers

All Irish rivers have been allocated to one of 12 primary types, further details of which can be found in *Irish river typology* (Ireland W.F., 2004).

The Water Framework Directive has led to the establishment of eight river basin district projects throughout the island of Ireland. Five River Basin Districts, each with its own Water Quality Management Plan, feature in the Connacht Ulster Region as follows:

- Shannon International River Basin District is the largest in Ireland and stretches from the source of the River Shannon in the Cuilcagh mountains in counties Cavan and Fermanagh to the tip of the Dingle peninsula in north Kerry;
- The North Western International River Basin District covers the north west corner of the island of Ireland. Major rivers and lakes include the Erne system, which supports boating and leisure tourism as well as some hydroelectric power generation, to the River Finn and Foyle systems that drain much of the mountains of Donegal and the Sperrin mountains;
- Neagh Bann International River Basin District. Lough Neagh is situated in the centre of Northern Ireland. It is the largest freshwater lake on the island of Ireland and is very shallow for its size. The Upper Bann is one of six major rivers that flow into the Lough, while the lake drains through the Lower Bann River from the north end of the Lough at Toome to the sea on the north coast of Northern Ireland;
- Western River Basin District. The main rivers are the Corrib, draining Lough Corrib, Mask and Carra, the Moy; draining Lough Conn and Cuilin, Owenmore/Ballysadare, Dunkellin and Bonet. Smaller catchments, such as the Erriff, drain directly to the sea. Some river systems like the Gort River draining the Slieve Aughty Mountains in the south of the basin drain to the sea via underground routes; and
- Eastern River Basin District. The Eastern River Basin District incorporates all or part of 12 Local Authority areas: Dublin City, Meath, Kildare, Wicklow, Cavan, Dún Laoghaire-Rathdown, Fingal, Offaly, South Dublin, Westmeath, Louth and a small portion of Wexford; the main river catchments in the area are the Boyne, the Nanny/Delvin, the Liffey, and the Avoca/Vartry.

6.7.2 Lakes

The lakes of note in the region include Lough Corrib, which is the largest lake in the country. The surface waters in the region are shown in **Figure 6-1**.

6.8 ECONOMIC ACTIVITY

The main economic drivers in the CUR are the principal urban centres and associated hinterlands. Galway City and County account for 34% of the people at work within the region (Census 2011) while Donegal accounts for 16% and Mayo a further 16%. The remaining six counties of the region account for 34% of the people at work. **Table 6-3** summarises the numbers at work in the region.

Table 6-3: Employment by Economic Sector

Industry	Galway City	Galway	Mayo	Roscommon	Sligo	Leitrim	Donegal	Cavan	Monaghan
Agriculture Forestry Fishing	126	3,697	3,019,	1,536	1,005,	665	2,451	2,227	2,210
Building and Construction	816	1,311	1,184	371	402	154	969	685	547
Manufacturing	7,203	6,097	5,560	1,880	2,963	831	3,704	3,481	2,978
Commerce and Trade	9,596	8,620	9,248	3,334	4,457	1,822	9,223	4,532	3,925
Transport and Communications	2,498	2,466	1,420	536	820	261	1,955	584	801
Public Administration	2,693	1,410	2,552	1,267	1,863	777	2,948	1,215	888
Professional Services	12,488	10,037	8,862	3,766	6,655	2,467	10,313	4,293	3,426
Other	5,278	5,113	5,099	1,732	2,648	1,065	5,795	2,234	1,745
Total	**40,698**	**38,751**	**36,944**	**14,422**	**20,813**	**8,042**	**37,358**	**19,251**	**16,520**

The Professional Services Sector is the largest employer in the region with 27% of the total employed in this area. Commerce and trade is the second biggest employer with 24%, followed by Manufacturing with 15%. Following the contraction in the construction sector the percentage at work in this area in the region has fallen to 3% and, consistent with national trends, the numbers at work in Agriculture, Forestry and Fishing remain low at 7%. Manufacturing is largely concentrated in the south of the region, with Galway City and County accounting for 38% of people at work in manufacturing. **Figure 6-4** illustrates the distribution of employment activities across the region.

6.8.1 Integrated Pollution Prevention and Control Sector Companies

A system of Integrated Pollution Prevention and Control (IPPC) licensing applies to certain industrial sectors in Ireland. The licensing procedure is administered by the EPA. Progressively various industrial production scenarios are being included in this system. A licence will only be issued on the basis that environmental impact including waste is minimised, and often the applicant will be required to undertake a complete environmental audit or implement a complete environmental management system. The location of IPPC licensed facilities is illustrated in **Figure 6-4.**

6.8.2 Extractive Industries

There are over 355 registered extractive industry sites in the Region. A register of these is available online at http://www.epa.ie/enforcement/extractiveindustriesregister

6.8.3 Tourism

Tourism is a significant industry in the region with real growth potential following the successful development of many Greenways and the promotion of the Wild Atlantic Way. The west of the region is serviced by Ireland West Airport while the northwest is serviced by Donegal Airport. The east of the region is within reasonable travelling times of Dublin Airport.

Over 1.7 million foreign tourists visited the Region in 2012 (Ireland, 2012), which resulted in a spend of €450m in the region. Information in relation to tourist attractions on a county by county basis can be accessed on the Discover Ireland Website.

6.9 TRANSPORTATION

The Connacht Ulster Region is served variously by all modes of transport including road, rail, air and sea. The transportation network is illustrated in **Figure 6-4.**

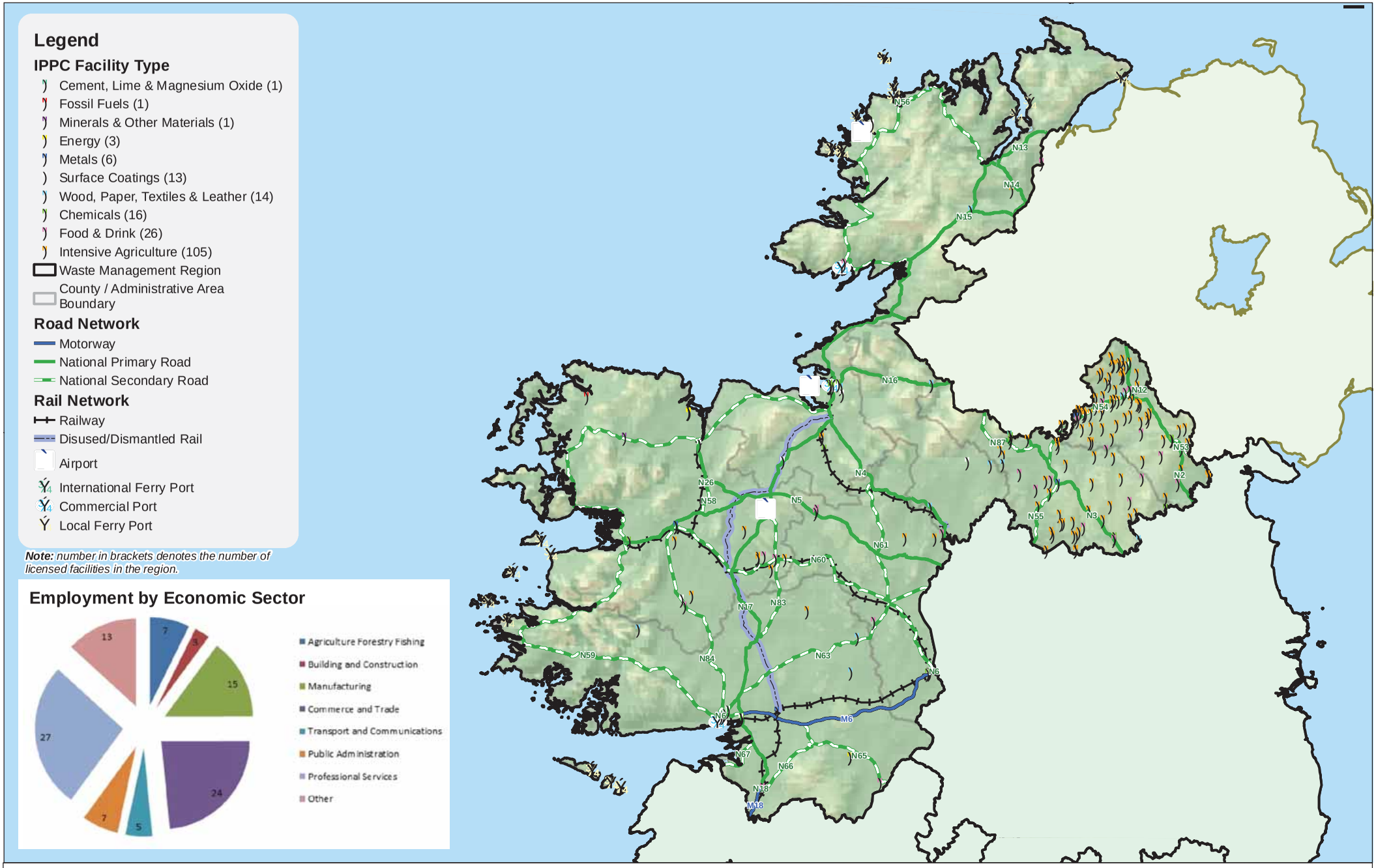
6.9.1 Roads

With the completion of the Major Inter Urban route Motorway development project in December 2010, the new M6 Motorway became the first city to city motorway in Ireland, connecting Dublin with Galway. The motorway has significantly reduced travel times from Galway to Dublin and is the only motorway link into the Connacht Ulster Region. Work is continuing on the Atlantic Corridor, which will ultimately link Letterkenny to Galway and beyond, with the commencement of the Gort to Tuam Motorway. This development will eliminate a number of notorious bottlenecks and provide a major interchange with the M6, which will further enhance access into the south and southeast of the region. At the northern end of the region there was a commitment for the provision of a cross-border motorway linking Dublin to Donegal; however, that commitment has been altered with a focus now on the upgrade of the existing road network. At the eastern end of the region the extension of the M3 to Kells in County Meath has brought motorway connectivity to within 10 km of the Cavan border, while the M1 at Dunleer is less than 20 km from the Monaghan border.

The region is serviced by a number of national primary routes. County Monaghan is serviced by the N2 while Cavan is serviced by the N3. Counties Leitrim, Roscommon and Sligo are serviced by the N4 while counties Roscommon and Mayo are serviced by the N5. All of the aforementioned primary routes follow a north-west radial orientation from Dublin. There are a number of north–south orientation Primary Routes which link key urban centres in the region and also link the north–west Primary Routes together. The N15 runs north from Sligo to Derry via Strabane and links with Letterkenny via the N13, while the N17 runs south from Sligo to Galway.

The national primary route network is complemented by the national secondary route network in the region. The principal national secondary routes include the N56, which takes the west coast route from Donegal Town back to Letterkenny, while in the west of the region the N59 takes the west coast route south from Sligo to link ultimately with Galway City. Cavan and Monaghan are linked to the west of the region via the N55, which joins the M6 at Athlone, while Roscommon is linked to the north and south of the region via the N61 and the N63 and to the west by the N60.

The region has a large network of regional roads which are not as heavily trafficked as the national routes. These roads carry local and tourist traffic and lead into the secondary and primary network in a radial fashion. In the more isolated areas of the region, and particularly along the Atlantic seaboard, these roads can be narrow and as a result difficult to navigate for refuse collection vehicles.



Regional Waste Plans, SEA and AA

File Ref: MDR0998Arc0078F01

Figure 6-4 Economic Activity & Transportation Network

RPS

6.9.2 Rail

The region is serviced by three rail links which all radiate from Dublin in a west/north-west orientation. The north-west of the region is serviced by the Sligo line which runs direct from Dublin, Connolly Station. This line also services Leitrim and North Roscommon. The Sligo line provides seven services per day.

The West of the region is serviced by the Westport line which runs direct from Dublin, Heuston Station. This line also services Roscommon. The Westport line also provides a service to Ballina in North Mayo with a change at Manulla junction. The Westport line provides five services per day.

The south of the region is serviced by the Galway City Line which runs direct from Dublin, Heuston Station. The Galway City line provides 10 services per day. The south of the region is further connected to the Intercity rail network via the first section of The Western Rail Corridor to be completed from Ennis to Athenry. Ultimately if completed the Western Rail Corridor will provide a north–south rail link between Galway and Sligo, intersecting the three current rail lines into the west.

There are no direct rail services to Donegal, Cavan or Monaghan. Irish Rail also provides bulk freight or intermodal freight services on all of the lines into the region.

6.9.3 Air

The region is serviced by two commercial airports at Carrickfin in County Donegal and at Ireland West Airport Knock in County Mayo.

Donegal Airport is located at Carrickfin, Kincasslagh, Co. Donegal. Carrickfinn is on the west coast of Donegal and is in the Gaeltacht region. The airport is approximately a 15 minute drive from Dungloe and Gweedore, and a 45 minutes drive from Letterkenny. Flights operate twice daily all year round from Donegal to Dublin Airport, with a schedule four times weekly all year round from Donegal to Glasgow International Airport increasing to six times weekly during peak seasons.

Ireland West Airport Knock is Ireland's fourth international airport and the main international air access gateway for the West, North-West and Midland regions of Ireland. The airport has experienced rapid development and now serves more than 25 scheduled and charter destinations across Ireland, the UK, Europe and beyond. In 2013 passenger numbers reached 655,000, with 700,000 passengers expected in 2014.

6.9.4 Sea Ports

The region is serviced by a number of well developed ports at Galway City, Sligo, Killybegs in County Donegal and Rossaveel in County Galway.

Galway Harbour is located in the heart of Galway City and handles liquid and dry bulk traffic including fuels, which are stored at the adjacent oil storage facility at Galway City Enterprise Park. There are major proposals for the expansion of the port including a 27 hectare extension, 216 berth marina, a deep commercial quay to facilitate cruise liners and a nautical centre. Plans however are subject to EU approval due to the Habitats Directive.

Sligo Port is located in the heart of Sligo and is the most northerly commercial port on the west coast. The port handles coal, timber, fish meal and scrap at two working jetties, one of which is a deep water jetty.

Killybegs harbour is situated in Donegal Bay and located at the tip of a deep fjord-like inlet which makes it one of the safest and most sheltered deep water harbours on the Irish coast. Killybegs is Ireland's leading fishing port and there are plans to further develop the port as a general cargo facility servicing the oil and gas industry offshore.

Rossaveel Harbour is located in the well sheltered Cashla Bay at the northern approaches to Galway Bay. A major programme of works was completed at Rossaveel during the 1990's to add to the existing facilities and included the provision of approximately 300 metres of new pier.