

National Waste Report 2012

A Report for the Year 2012



Environmental Protection Agency

The Environmental Protection Agency (EPA) is a statutory body responsible for protecting the environment in Ireland. We regulate and police activities that might otherwise cause pollution. We ensure there is solid information on environmental trends so that necessary actions are taken. Our priorities are protecting the Irish environment and ensuring that development is sustainable.

The EPA is an independent public body established in July 1993 under the Environmental Protection Agency Act, 1992. Its sponsor in Government is the Department of the Environment, Community and Local Government.

OUR RESPONSIBILITIES

LICENSING

We license the following to ensure that their emissions do not endanger human health or harm the environment:

- waste facilities (e.g., landfills, incinerators, waste transfer stations);
- large scale industrial activities (e.g., pharmaceutical manufacturing, cement manufacturing, power plants);
- intensive agriculture;
- the contained use and controlled release of Genetically Modified Organisms (GMOs);
- large petrol storage facilities;
- waste water discharges;
- dumping at sea.

NATIONAL ENVIRONMENTAL ENFORCEMENT

- Conducting over 1200 audits and inspections of EPA licensed facilities every year.
- Overseeing local authorities' environmental protection responsibilities in the areas of - air, noise, waste, waste-water and water quality.
- Working with local authorities and the Gardaí to stamp out illegal waste activity by co-ordinating a national enforcement network, targeting offenders, conducting investigations and overseeing remediation.
- Prosecuting those who flout environmental law and damage the environment as a result of their actions.

MONITORING, ANALYSING AND REPORTING ON THE ENVIRONMENT

- Monitoring air quality and the quality of rivers, lakes, tidal waters and ground waters; measuring water levels and river flows.
- Independent reporting to inform decision making by national and local government.

REGULATING IRELAND'S GREENHOUSE GAS EMISSIONS

- Quantifying Ireland's emissions of greenhouse gases in the context of our Kyoto commitments
- Implementing the Emissions Trading Directive, involving over 100 companies who are major generators of carbon dioxide in Ireland.

ENVIRONMENTAL RESEARCH AND DEVELOPMENT

- Co-ordinating research on environmental issues (including air and water quality, climate change, biodiversity, environmental technologies).

STRATEGIC ENVIRONMENTAL ASSESSMENT

- Assessing the impact of plans and programmes on the Irish environment (such as waste management and development plans).

ENVIRONMENTAL PLANNING, EDUCATION AND GUIDANCE

- Providing guidance to the public and to industry on various environmental topics (including licence applications, waste prevention and environmental regulations).
- Generating greater environmental awareness (through environmental television programmes and primary and secondary schools' resource packs).

PROACTIVE WASTE MANAGEMENT

- Promoting waste prevention and minimisation projects through the co-ordination of the National Waste Prevention Programme, including input into the implementation of Producer Responsibility Initiatives.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE) and Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

MANAGEMENT AND STRUCTURE OF THE EPA

The organisation is managed by a full time Board, consisting of a Director General and four Directors.

The work of the EPA is carried out across four offices:

- Office of Climate, Licensing and Resource Use
- Office of Environmental Enforcement
- Office of Environmental Assessment
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet several times a year to discuss issues of concern and offer advice to the Board.



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National Waste Report for 2012

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Table of Contents

Acknowledgements	i
List of terms	ii
1. Key statistics and trends, key conclusions	1
2. Introduction	11
3. Municipal waste generation and management	17
4. Biodegradable municipal waste	32
5. Waste infrastructure	37
6. Packaging waste	47
7. Waste electrical and electronic equipment	53
8. End of life vehicles	55
9. Waste tyres	57
10. Hazardous waste	60
APPENDICES	
Appendix A Indicators	72
Appendix B Household waste collected and brought	74
Appendix C Household waste collected at bring banks	77
Appendix D Household waste collected at civic amenity sites	79
Appendix E Landfills in operation in 2012	82
Appendix F Open and recently closed landfills with associated waste infrastructure	84
Appendix G Recovery and disposal operations	86
Appendix H Waste composition & biodegradability factors	87
Appendix I Waste accepted for composting / digestion in 2012	90
Appendix J Household organic waste collections at kerbside and brought to civic amenity temporary collection sites	91
Appendix K Type and distribution of household kerbside collection services	93
Appendix L Percentage of permanent private households on various kerbside collection services	94
Appendix M Estimate of unmanaged household waste	95
Appendix N Treatment of hazardous waste on-site at IPPC licensed facilities in 2012	97

List of Tables

Table 1:	Progress towards EU waste recycling, recovery and diversion targets.	6
Table 2:	Details of waste management planning regions	14
Table 3:	Municipal waste generated, managed and treatment activities, 2012	18
Table 4:	Municipal waste landfills by region and tonnage disposed in 2012	19
Table 5:	Municipal waste recovered in Ireland and abroad in 2012	22
Table 6:	Trends in household waste management, 2007 to 2012	22
Table 7:	Treatment of household residual waste (national, 2012)	28
Table 8:	Non-household municipal waste management, 2007 to 2012	31
Table 9:	BMW tonnage of different types of municipal waste accepted at landfills in 2012	33
Table 10:	BMW limits in landfill licences	34
Table 11:	Targets and distance to targets for BMW diversion from landfill disposal	35
Table 12:	Approximate remaining disposal capacity at landfills accepting municipal waste	39
Table 13:	Energy recovery of waste, 2010 to 2012	43
Table 14:	Number and tonnages collected at bring banks and civic amenity sites, 2009 to 2012	44
Table 15:	Summary of waste authorisations and key infrastructure in 2012	46
Table 16:	Quantities of packaging waste generated in Ireland, and recycled and energy recovered in Ireland and abroad in 2012	49
Table 17:	Packaging waste exported for recovery, 2012	50
Table 18:	Packaging waste generated abroad and treated in Ireland in 2012	50
Table 19:	Packaging self-compliers registered in local authority areas in 2012	51
Table 20:	Packaging self-compliers, 2009 to 2012	52
Table 21:	WEEE collection, treatment, export and recovery.	53
Table 22:	Summary of hazardous waste management, 2009-2012 (excluding contaminated soil)	60
Table 23:	Methods of treatment of hazardous waste on-site at IPPC licensed facilities in 2012	61
Table 24:	Tonnage of hazardous waste treated on-site at industry in 2012 by waste category (excluding contaminated soil)	62
Table 25:	Hazardous waste treatment facilities surveyed for National Waste Report 2012	63
Table 26:	Methods of treatment of hazardous waste off-site in Ireland in 2012 (excluding contaminated soil)	64
Table 27:	Tonnage of hazardous waste treated off-site in Ireland in 2012 by waste category (excluding contaminated soil)	64
Table 28:	Categories of reported exports of hazardous waste, 2009 - 2012	66
Table 29:	Disposal and recovery of reported export of hazardous waste, 2012	67
Table 30:	Destination and fate of notified hazardous waste exports (excluding contaminated soil), 2012	69
Table 31:	Reported off-site management of contaminated soil, 2009 - 2012	70

Table G-1:	Disposal and recovery operations as per Annex II A and B of Directive (2008/98/EC) on waste	86
Table H-1:	Collected household waste composition profile (% by weight)	87
Table H-2:	Composition and biodegradability factors for commercial wastes	88
Table H-3:	EPA approved factors to calculate the BMW content of municipal waste streams	89

List of Figures

Figure 1:	Structure of 'Towards a Resource Efficient Ireland: A National Strategy to 2020'	13
Figure 2:	Municipal waste generated, disposed and recovered in Ireland, 2006 to 2012	18
Figure 3:	Landfill levy versus percentage municipal waste disposed to landfill, 1995 to 2012	21
Figure 4:	Management of Irish municipal waste in 2011 and 2012 in comparison with EU 28	21
Figure 5:	Trends in percentage household disposal and recovery, 2005 to 2012	23
Figure 6:	Household waste managed with population and personal consumption indices, 2007-2012	24
Figure 7:	Household waste generation per capita in EU 27 and Republic of Ireland	24
Figure 8:	Household kerbside collections in 2012 (% by weight)	25
Figure 9:	Kerbside collection of household organic waste in 2012 by local authority area	27
Figure 10:	Treatment of household residual waste collected at kerbside	29
Figure 11:	BMW tonnage landfilled per quarter versus Landfill Directive Targets (pro-rata)	34
Figure 12:	Consented capacity remaining at non-operational landfills (tonnes) at the end of 2012	41
Figure 13:	Consented capacity remaining at operational landfills (tonnes) at the end of 2012	41
Figure 14:	Remaining constructed capacity and location of landfills by Waste Management Planning Region.	42
Figure 15:	Bring banks and civic amenity sites by local authority functional area	45
Figure 16:	Recovery of packaging waste, 2006 - 2012, and progress towards targets	47
Figure 17:	Percentage of WEEE collected by category in 2012.	54
Figure 18:	ELV reuse, recovery and recycling percentage from 2009 – 2012 compared to ELV Directive targets.	56
Figure 19:	Waste tyre flows for 2012	59
Figure 20:	Destination of exported hazardous waste in 2012 (excluding contaminated soil)	69

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List of terms

This list of terms is intended to assist understanding of this report, and does not purport to be a legal interpretation of said terms.

An **Annual Environmental Report (AER)** may be submitted each year to either the EPA or local authorities by organisations with either waste or industrial authorisations, providing summary information on the environmental performance of the facility e.g. data on emissions to air and water, waste management, resource consumption, objectives and targets, ambient monitoring and complaints. AERs for EPA licensees are made publicly available on the EPA website.

2-bin or 3-bin system refers to a source segregated collection system where dry recyclables and residual wastes are separately collected (2-bin system), or where dry recyclables, organics and residuals are separately collected (3-bin system). The reference to **'black bin'** in this document is a reference to a single bin collection or to the residuals bin from a 2-bin or 3-bin system. The reference to **'green bin'** in this document is a reference to a dry recyclables collection, and **'brown bin'** is a reference to an organics bin collection.

Biodegradable (in the context of waste) means waste that is capable of undergoing anaerobic or aerobic biological decomposition, such as food and garden waste, paper and cardboard etc.

Biodegradable municipal waste (BMW) means the biodegradable component of municipal waste, and does not include biostabilised waste. Biodegradable municipal waste is typically composed of food and garden waste, wood, paper, cardboard and textiles.

Biostabilised residual waste means residual BMW that has been treated to achieve an EPA approved biodegradability stability standard¹ prior to landfilling or alternative agreed use.

ii |

Bio-waste under the terms of the Waste Framework Directive (2008/98/EC) means biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants.

Certificate of Registration (CoR). Certain waste activities require authorisation under a certificate of registration. These activities are listed in Part II of the Third Schedule of the [Waste Management \(Facility Permit and Registration\) Regulations 2007](#), S.I. No. 821 of 2007. The list of activities was amended in 2008 by [S.I. No. 86 of 2008](#). When these activities are carried out by local authorities, the EPA grants the CoR. When these activities are carried out by persons or organisations that are not local authorities, CoRs are granted by the local authority in whose area the activity will be carried out.

Commercial waste, in the context of this report, is a term used to describe the non-household fraction of municipal waste, which is produced by commercial premises such as shops, offices and restaurants, as well as municipal premises such as schools, hospitals etc. It also includes non-process industrial waste arising from factory canteens, offices etc. Commercial waste is broadly similar in composition to household waste, consisting of a mixture of paper and cardboard, plastics, organics, metal and glass.

Construction and demolition (C&D) waste is all waste that arises from construction and demolition activities (including excavated soil from contaminated sites). These wastes are listed in Chapter 17 of the European Waste Catalogue (EWC).

CSO - the Central Statistics Office.

DECLG - the Department of the Environment, Community and Local Government.

Disposal means any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Annex I of the Waste Framework Directive (Directive 2008/98/EC) sets out a non-exhaustive list of disposal operations.

¹ <http://www.epa.ie/pubs/advice/waste/municipalwaste/>

EEE is electrical and electronic equipment.

End of Life Vehicle (ELV) means a vehicle which is waste within the meaning of Article 1(a) of the Waste Directive (refer to Directive 2000/53/EC on end-of life vehicles).

EPA - the Environmental Protection Agency.

EU - European Union.

European Pollutant Release and Transfer Register (E-PRTR). The E-PRTR Regulation (EC No. 166/2006) requires that releases of pollutants and off-site transfers of waste by facilities operating in relevant classes of activity must be reported annually to the EPA. The EPA in turn reports this information to the European E-PRTR website.

European Waste Catalogue (EWC), now known as the **List of Wastes (LoW)**, is a list of all waste types generated in the EU. The different types of waste are fully defined by a six-digit code, with two digits each for chapter, sub-chapter and waste type. The catalogue is available for download from the EPA website at: www.epa.ie/pubs/reports/waste/stats/epawastecataloguehazardouslist2002.pdf.html

Gross Domestic Product (GDP) & GNP (Gross National Product). Gross Domestic Product (GDP) and Gross National Product (GNP) are closely related macroeconomic parameters. GDP measures the total output of the economy in a period i.e. the value of work done by employees, companies and self-employed persons. This work generates incomes but not all of the incomes earned in the economy remain the property of residents (and residents may earn some income abroad). The total income remaining with Irish residents is the GNP and it differs from GDP by the net amount of incomes sent to or received from abroad.

Hazardous wastes are wastes that have the potential to cause harm to human health or the environment. Any waste which displays one or more of the hazardous properties listed in Annex III of the Waste Framework Directive (2008/98/EC) is defined as hazardous waste.

Household waste is defined as waste produced within the curtilage of a building/residence or self-contained part of a building/premises used for the purposes of living accommodation.

IE - Republic of Ireland.

Industrial waste is waste produced by industrial activity such as that of factories, mills and mines. Non-process industrial waste (eg from site canteen, office, etc.) is similar in character to commercial waste.

Inert waste is waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in any way likely to give rise to environmental pollution or harm human health.

An **Integrated Pollution Prevention and Control (IPPC)** licence is an authorisation issued and enforced by the EPA for specific industrial and agricultural activities. An IPPC licence sets limits on air and water emissions, waste and noise and requires that an activity must use the Best Available Techniques (BAT).

An **Integrated Waste Management Facility (IWMF)** in the context of this report is one that combines a landfill and other waste infrastructure such as civic amenity site, transfer station, composting or other treatment facilities.

Kerbside collection is a common reference for the practice of collecting household or commercial waste directly from its source, often, though not necessarily, from the pavement or front door.

Mechanical-biological treatment (MBT) means the treatment of residual municipal waste (black bin) through a combination of manual and mechanical processing and biological stabilisation, in order to stabilise and reduce the mass of waste that requires disposal.

Merchant operator. A commercial operator that accepts waste from third parties for treatment (as opposed to an industrial activity with facilities for the treatment of waste arising from their own processes, such as on-site incineration).

Metric tonnes are expressed as tonnes or 't' throughout this report. Mt = million tonnes.

MDR - Mixed dry recyclables.

MFSU - manufacture, formulation, supply and use.

Municipal waste means household waste as well as commercial and other waste that, because of its nature or composition, is similar to household waste. It excludes municipal sludges and effluents. In the context of this report municipal waste consists of three main elements - household, commercial (including non-process industrial waste), and street cleansing waste (street sweepings, street bins and municipal parks and cemeteries maintenance waste, litter campaign material).

N/A – not applicable.

NACE - Nomenclature générale des activités économiques dans l'Union Européenne (general name for economic activities in the European Union).

NEC – not elsewhere classified.

Notifiable waste - Shipments of amber listed waste destined for recovery, and all shipments of waste destined for disposal, are subject to prior notification and consent procedures in accordance with Articles 3 and 4 of the Waste Shipment Regulation 1013/2006.

NTFSO – National Transfrontier Shipment Office, Dublin City Council.

NWCPO – National Waste Collection Permit Office, Offaly County Council.

OEI – Office of Environmental Assessment, Environmental Protection Agency.

OEE – Office of Environmental Enforcement, Environmental Protection Agency.

Organic waste is biodegradable food, garden and landscaping waste, and where the context permits, will also include industrial organic sludges (eg from the food and drink production sector).

Packaging is used to contain, protect and present goods. Virtually all packaging eventually becomes waste. Packaging is made from such materials as cardboard, paper, glass, plastic, steel, aluminium, wood, textiles and composite materials such as those used in milk and juice cartons.

Pay-to-use (PTU) waste compacting units.

Preparing for reuse means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be reused without any other pre-processing.

Recovery means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfill a particular function, or waste being prepared to fulfill that function, in the plant or in the wider economy. Annex II of the Waste Framework Directive (2008/98/EC) sets out a non-exhaustive list of recovery operations, which includes material recovery (i.e. recycling), energy recovery (i.e. use as a fuel (other than in direct incineration) or other means to generate energy) and biological recovery (eg composting).

Recycling means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.

Refuse derived fuels (RDF) are fuels produced from waste through a number of different processes such as mechanical separation, blending and compressing to increase the calorific value of the waste. Such waste derived fuels can be comprised of paper, plastic and other combustible wastes and can be combusted in a waste-to-energy plant, cement kiln or industrial furnace.

Residual waste means the fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal.

Reuse means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.

RMCEI – Recommendation for Minimum Criteria for Environmental Inspections. The RMCEI contains non-binding criteria for the planning, carrying out, following up and reporting on environmental inspections. Its objective is to strengthen compliance with EU environment law and to contribute to its more consistent implementation and enforcement in all Member States.

Rol – Republic of Ireland

rx3 'rethink, recycle, remake' is an initiative working to create markets for recyclables (2008 – 2013) funded by the Department of Environment, Community and Local Government.

SI (Statutory Instrument). An order, regulation, rule, scheme or bye-law made in exercise of a power conferred by statute.

tpa – tonnes per annum.

The **Transfrontier Shipment of Waste (TFS)** Regulations 2007 set out new notification procedures, revised waste listings and enforcement provisions in relation to the export, import and transit of waste shipments within the EU. The National TFS Office at Dublin City Council is the competent authority for the implementation and enforcement of the TFS Regulations since 12th July 2007.

Treatment means recovery or disposal operations including preparation prior to recovery or disposal.

Waste is defined as any substance or object which the holder discards or intends or is required to discard, under the Waste Framework Directive (2008/98/EC).

Waste management means the collection, transport, recovery and disposal of waste, including the supervision of such operations and the after-care of disposal sites, and including actions taken as a dealer or broker.

Waste producer means anyone whose activities produce waste (original waste producer) or anyone who carries out pre-processing, mixing or other operations resulting in a change in the nature or composition of this waste, under the Waste Framework Directive (2008/98/EC).

Waste electrical and electronic equipment (WEEE) refers to electrical and electronic equipment which is waste within the meaning of Article 3(a) of the Waste Directive 2008/98/EC, including all components, subassemblies and consumables which are part of the product at the time of discarding.

Waste Framework Directive (WFD) - Waste Directive 2008/98/EC of 19 November 2008.

WCP (Waste Collection Permit). A permit issued by a local authority for the collection of waste under the Waste Management (Collection Permit) Regulations 2007, as amended.

WFP (Waste Facility Permit). A permit issued by a local authority to a facility for the transfer, storage or treatment of waste under the Waste Management (Facility Permit and Registration) Regulations 2007, as amended.

1. Key statistics and trends, key conclusions

This section of the National Waste Report provides information on key statistics and trends in the report, as well as information on Ireland's progress in meeting EU waste collection, recovery and diversion targets and some conclusions arising from the information presented.

In Ireland, municipal waste is defined as a combination of household waste, commercial waste and other waste that, because of its nature or composition, is similar to household waste.

1.1 Key statistics and trends

Waste stream	Key statistics for 2012 and trends compared to 2011		
Municipal Waste	There was 2,692,537 tonnes of municipal waste generated in 2012 which is 4.6% lower than municipal waste generation in 2011. There was 2,478,337 tonnes of municipal waste managed ² in 2012 which is 2.7% lower than municipal waste managed in 2011.		
	The main treatment activities for municipal waste in 2012 were:		
		Quantity (tonnes)	% of managed municipal waste
	Recycling	828,492	33%
	Incineration with and without energy recovery	427,093	17%
	Landfilling	1,027,577	41%
	Composting & digestion	156,212	6%
	Other recovery	38,914	2%
	The percentage tonnage of municipal waste managed for recovery ³ (59%) exceeded the percentage tonnage managed for disposal (41%) for the first time in 2012.		
	In 2012, 427,093 tonnes of municipal waste was used as a fuel for energy recovery. This is a 118% increase on the 195,622 tonnes reported for 2011.		
	Our recycling rate (40%) ⁴ for municipal waste is close to the EU28 average (42%).		
	The quantity of municipal waste disposed to landfill continues to fall - approximately 24% less municipal waste was disposed to landfill in 2012 compared to 2011.		
Approximately 54% of the tonnage of municipal waste disposed was accepted at three landfills: Drehid and Ballynagran Landfills (Eastern and Midlands Region) and Gortadroma Landfill (Southern Region).			
34% of municipal waste managed in Ireland was exported for recovery in 2012. This includes municipal waste exported for energy recovery and for recycling. Export of municipal waste for energy recovery increased by 36% between 2011 and 2012.			

² The difference between municipal waste generated and managed is household unmanaged waste. Unmanaged waste is the current best estimate of household waste that isn't collected at kerbside or otherwise managed at, for example, a civic amenity site.

³ Recovery includes recycling, energy recovery, composting & digestion and other recovery.

⁴ Material recycling with composting & digestion.

Waste stream	Key statistics for 2012 and trends compared to 2011
Household Waste	Average household waste generation per capita in Ireland was 344 kg in 2012 which is 21% lower than the average in the EU27 in 2010 (latest data available).
	The household waste recovery rate (57%) exceeded the disposal rate (43%) for the first time in 2012. This is due to the increased use of residual waste as a fuel.
	<p>For household waste managed in 2012:</p> <ul style="list-style-type: none"> ➤ 79% was collected at kerbside; ➤ 4% was bulky waste collections (skips); ➤ 15% was brought for treatment (bring banks, civic amenity sites) ; ➤ 2% was brought directly to landfill, to pay-to-use compactors, and to retailers/ special collection days in the case of WEEE and portable batteries.
	<p>Of the 1,069,920 tonnes of household waste collected at kerbside in 2012:</p> <ul style="list-style-type: none"> ➤ 68% of the tonnage was presented as residual waste; ➤ 24% as mixed dry recyclables; ➤ 7.5% as organics; ➤ 0.5% as segregated glass.
	<p>Of household residual waste collected at kerbside:</p> <ul style="list-style-type: none"> ➤ 48% was sent to directly to landfill or to landfill via a bulking station for disposal; ➤ 47% was sent for recovery (16% for incineration with energy recovery, and 31% sent for mechanical treatment destined for recovery), and ➤ 5% was sent to another waste facility (either bulking or treatment station) and its final treatment not analysed.
	<p>In relation to a kerbside collection service:</p> <ul style="list-style-type: none"> ➤ 98% of permanent private households had a 2-bin service (residual waste and mixed dry recyclables); ➤ 37% had an organic bin service; ➤ 3% had a segregated glass collection service.
	Cork City and Donegal County were the only local authority areas without a household kerbside organic bin collection service in 2012.
	The number of collectors operating in each local authority area varied widely, from a minimum of two to a maximum of fifteen (the average was nine). Some permit holders only reported servicing a small number of households.
Biodegradable Municipal Waste	There was a decrease in the percentage of BMW in municipal waste sent to landfill for disposal in 2012 compared to 2011 (54% in 2012, 57% in 2011).
	Ireland is on course to meet the 2013 and 2016 Landfill Directive targets. However, economic recovery may lead to an increase in the disposal of biodegradable municipal waste to landfill which would put achievement of the 2016 target at risk.
	There was a significant reduction in the amount of untreated waste going to landfill compared to 2011.

Waste stream	Key statistics for 2012 and trends compared to 2011
Waste Packaging	The recovery rate for packaging waste was 87% in 2012, compared to 79% in 2011. This well exceeds the current Directive target of 60%. The increased rate in 2012 was due to the increase in packaging waste in residual waste that was used as a fuel.
Waste Electrical and Electronic Equipment	In 2012, 40,818 tonnes of waste electrical and electronic equipment (WEEE), arising from equipment placed on the Irish market, were collected for treatment.
	An estimated 7.5 kg of WEEE per person was collected from private households which exceeds the 4 kg per person target set by the EU.
	The recycling and recovery targets set by the EU were achieved for all categories of WEEE.
End of Life Vehicles	Ireland achieved compliance with the 2006 End-of-Life Vehicle (ELV) recovery and recycling targets as required under the ELV Directive for the first time in 2012. The 80% reuse and recycling and the 85% reuse and recovery targets were both achieved.
Waste Tyres	Approximately 24,164 tonnes of waste tyres were reported to have been managed in the State in 2012.
Waste Batteries	The portable battery and accumulators collection target was achieved, with 28% collected relative to tonnage placed on the market in 2012.
	Ireland is at risk of failing to meet the 2016 portable battery and accumulators collection target which is 45%, unless there is a significant increase in the collection rate (28% reported in 2012)
Hazardous Waste	There was a 6% reduction in the overall amount of hazardous waste treated both on-site at industry and off-site (hazardous waste facilities) in Ireland in 2012 compared to 2011.
	There was a 3% decrease in the quantity of hazardous waste exported for treatment in 2012 compared to 2011.
	There was an increase in the amount of solvents recovered on-site at IPPC facilities in 2012 compared to 2011, resulting in a reduction of solvents treated at commercial hazardous waste facilities.
	The treatment of hazardous waste in 2012 was similar to 2011 with 22% treated on-site at industry where it was generated, 30% sent off-site to a commercial hazardous waste facility for treatment and 48% exported for treatment.
Waste Infrastructure	The number of landfills accepting municipal waste for disposal continues to decline. While 18 landfills reported accepting municipal waste in 2012, only 13 were active by the end of 2012. This compares to 21 landfills accepting municipal waste in 2011. This rate of closure is expected to continue for the next few years.
	At the end of 2012, the remaining consented municipal landfill capacity (i.e. with waste licence and planning permission in place) was approximately 17.3 Mt nationally. Of this consented capacity approximately 1.6 Mt was operational at the end of 2012. This equates to just under 2 years capacity based on the fill rate in 2012.
	Ireland's first municipal waste incinerator had its first full year of operation in 2012.
	Local authorities reported 118 civic amenity sites and 1,862 bring banks in 2012, compared to 113 and 1,891 respectively in 2011.

1.2 Key Conclusions

Progress towards meeting EU recycling, recovery and diversion targets

In 2012, Ireland achieved all its EU obligations across a broad range of waste legislation (Table 1).

- Most significantly, Ireland achieved the 2006 End of Life Vehicle (ELV) Directive targets for the first time. This was mainly due to the fact that Irish ELV shredder operators sent the majority of residue arising from ELV shredding for recovery rather than disposal.
- In addition, preliminary data indicate that Ireland is on course to meet the 2013 Landfill Directive target for the diversion of biodegradable municipal waste (BMW) from landfill. This reflects a combination of measures including changes in EPA landfill licences to limit the acceptance of BMW, better segregation of organic waste by households and commercial enterprises, increases in the landfill levy and an increase in municipal residual waste going for energy recovery.
- In relation to packaging waste, Ireland's recovery rate was 87% in 2012 which well exceeds the Packaging Directive target of 60%. The increase in 2012 rate compared to 2011 is attributable to an increase in packaging waste in residual waste that was used as a fuel.
- Finally, in relation to Waste Electrical and Electronic Equipment (WEEE) collection targets, Ireland is nearly double the WEEE collection target (4 kg/person) with 7.5 kg collected per person in Ireland in 2012. While these figures indicate that Irish households produce a lot of WEEE, they show that the household WEEE collection systems, which were put in place by the electrical and electronic equipment manufacturers, importers and their compliance schemes, are working well.

There are risks however of failing to meet some EU Directive targets in 2013 and beyond, particularly for:

- **End of Life Vehicle (ELV) Directive.** Higher targets are coming into effect from January 2015.
- **Landfill Directive.** Ireland is on track to meet the 2016 biodegradable municipal waste (BMW) targets. There is, however, a risk that municipal waste generation could increase with economic recovery which in turn may result in an increase in BMW being disposed to landfill.
- **Batteries Directive.** Ireland is at risk of failing to meet the 45% minimum collection rate for portable batteries & accumulators coming into effect in August 2016, unless there is a significant increase in the collection rate (28% reported for 2012).

Municipal waste

Municipal waste generation continues to decrease from a peak in 2007, with municipal waste generated 21% lower in 2012 compared with 2007. Subsequently, municipal waste generated per capita has decreased from 0.78 tonnes of waste generated per person in 2007 to 0.59 tonnes in 2012. This decrease is linked to declining personal consumption as the economy contracted over the period 2007 to 2012 and occurred despite an increase in population over the same period. In addition, it also indicates a trend towards improved waste prevention in the country.

Significantly, 2012 was the first year that the percentage of municipal waste recovered (59%) exceeded the percentage disposed (41%). The treatment of municipal waste is down to market forces with existing policies and the introduction of new waste infrastructure influencing the shift from disposal to recovery. This is welcome, but prevention initiatives, preparation for reuse, and recycling of waste must also be implemented, particularly where waste streams are segregated at source.

Disposal to Landfill

There was a 24% decrease in municipal waste disposed to landfill in 2012 compared with 2011. The increases in the landfill levy, particularly since 2008, are playing a role in diverting municipal waste from disposal to landfill. In addition, the number of landfills accepting municipal waste for disposal is continuing to decrease (54% of total municipal waste disposed in 2012 was accepted at three landfills)

as is the remaining licensed landfill disposal capacity. There is approximately 17.3 Mt of remaining consented capacity for landfills and, of this, approximately 1.6 Mt is operational. This equates to approximately two years landfill capacity based on the 2012 fill rate. Alternative treatment options must be developed as operational landfills continue to decline.

Recovery

In 2012, 59% of managed municipal waste was recovered. Recovery covers recycling, energy recovery, composting & digestion. In relation to exports of municipal waste, 34% of municipal waste managed in Ireland was exported for recovery in 2012. This includes exported for energy recovery recycling.

Ireland's recycling rate is 40% and is close to the EU28 average of 42%. Ireland has no glass manufacturing facility, paper mill or metal smelter, therefore these waste streams are mainly exported for recycling which represents a lost opportunity.

Ireland's first municipal waste incinerator was operational for the full year of 2012. This contributed to increased recovery rates with 17% of managed municipal waste used as a fuel. In addition, cement kilns are also accepting waste for use as a fuel.

Notably, there was an increase of 36% in the export of baled municipal waste and refuse derived fuel for energy recovery between 2011 and 2012. Incineration plants on mainland Europe are under-supplied and, thus, there is a market for such export. Export of waste for energy recovery is a lost resource opportunity for the State. Incentives to keep waste for recovery, both energy and recycling as mentioned above, within the State should be pursued.

Producer Responsibility Initiatives

The introduction of the Producer Responsibility Initiative (PRI) legislation for particular waste streams (e.g. packaging, WEEE, ELVs, batteries) has been very positive in terms of the separate collection of these wastes and their appropriate treatment. There are some opportunities for improvement within PRIs, as identified by the Department of the Environment Community and Local Government's (DECLG) recent review, particularly for ELVs and waste tyres. In 2014, the DECLG set up Working Groups for ELVs and waste tyres to progress the recommendations of the PRI review reports.

Register of Waste Infrastructure and Data Reporting

The lack of a live national register of authorised waste facilities, including their treatment capacities, is an ongoing data gap for the State. The EPA published a report in April 2014 entitled "*National Municipal Waste Recovery Capacity*" as requested by the DECLG in a '*A Resource Opportunity – Waste Management Policy in Ireland*' (2012). The Capacity Register, created as part of this assessment, represents a start at capturing the diversity of facilities that are authorised to treat and pre-treat waste generated from a municipal source along with creating a log for Ireland's waste infrastructure.

The EPA made a number of recommendations in this report and in particular notes that there is no complete national register of waste facility permits and Certificates of Registration authorised by Local Authorities in the State. Ideally, maintenance of a register should be a shared service of local authorities, centrally managed by one. For example, the National Waste Collection Permit Office at Offaly County Council are now managing the waste collection permit register and annual returns from permit holders and this has led to improved quality and real-time data in a central repository. In addition, transfrontier shipment data (notified waste and green list waste) and movements of hazardous waste within the State are managed by the National Transfrontier Shipment Office at Dublin City Council. These shared services have delivered significant benefits for national and regional waste data collection and reporting. A central electronic reporting system for waste facility permit annual returns is the next logical step for shared services for waste data collection and would be of significant benefit to the State for waste planning and reporting purposes.

Table 1 - Progress towards EU waste recycling, recovery and diversion targets.

Directive	Title	Article	Targets		Indicator
			Target date	Specifics	
94/62/EC as amended	Packaging Directive ⁵	6(1)	31-12-2011	60% as a minimum by weight of packaging waste will be recovered or incinerated at waste incineration plants with energy recovery.	Achieved
				55% as a minimum by weight of packaging waste will be recycled.	Achieved
				No later than 31st December 2011 the following minimum recycling targets for materials contained in packaging waste will be attained:	
				(i) 60% by weight for glass;	Achieved
				(ii) 60% by weight for paper and board;	Achieved
				(iii) 50% by weight for metals;	Achieved
				(iv) 22.5% by weight for plastics, counting exclusively material that is recycled back into plastics;	Achieved
				(v) 15% by weight for wood.	Achieved

5 2012 data, most recent reported to the European Commission.

Directive	Title	Article	Targets		Current progress to target in Ireland	Indicator
			Target date	Specifics		
2002/96/EC WEEE Directive ⁶ 7(2)		5(5)		Separate collection of > 4kg of WEEE from private households per person per year.	7.5 kg	Achieved
				For large household appliances:- <ul style="list-style-type: none"> recovery shall be increased to a minimum of 80% by an average weight per appliance; and component, material and substance reuse and recycling shall be increased to a minimum of 75% by an average weight per appliance. 	84%	Achieved
				For automatic dispensers:- <ul style="list-style-type: none"> recovery shall be increased to a minimum of 80% by an average weight per appliance; and component, material and substance reuse and recycling shall be increased to a minimum of 75% by an average weight per appliance. 	82%	
			(31-12-2006) 31-12-2008 ⁷	For IT and telecommunications equipment:- <ul style="list-style-type: none"> the rate of recovery shall be increased to a minimum of 75% by an average weight per appliance; and component, material and substance reuse and recycling shall be increased to a minimum of 65% by an average weight per appliance. 	90%	Achieved
					88%	
				For consumer equipment:- <ul style="list-style-type: none"> the rate of recovery shall be increased to a minimum of 75% by an average weight per appliance; and component, material and substance reuse and recycling shall be increased to a minimum of 65% by an average weight per appliance. 	94%	Achieved
				For small household appliances, electrical & electronic tools, toys, leisure and sports equipment:- <ul style="list-style-type: none"> the rate of recovery shall be increased to a minimum of 70% by an average weight per appliance; and component, material and substance reuse and recycling shall be increased to a minimum of 50% by an average weight per appliance. 	89%	Achieved

⁶ 2012 data, most recent reported to the European Commission.

⁷ Ireland secured a two-year derogation.

Directive	Title	Article	Targets		Current progress to target in Ireland	Indicator
			Target date	Specifics		
2002/96/EC	WEEE Directive ⁴	7 (2)	(31-12-2006) 31-12-2008 ⁵	For medical devices:- <ul style="list-style-type: none"> the rate of recovery shall be increased to a minimum of 70% by an average weight per appliance; and component, material and substance reuse and recycling shall be increased to a minimum of 50% by an average weight per appliance. 	91%	Achieved
				For monitoring and control instruments:- <ul style="list-style-type: none"> the rate of recovery shall be increased to a minimum of 70% by an average weight per appliance; and component, material and substance reuse and recycling shall be increased to a minimum of 50% by an average weight per appliance. 	90%	Achieved
				For lighting equipment:- <ul style="list-style-type: none"> the rate of recovery shall be increased to a minimum of 70% by an average weight per appliance; and component, material and substance reuse and recycling shall be increased to a minimum of 50% by an average weight per appliance. 	90%	Achieved
				For gas discharge lamps, the rate of component, material and substance reuse and recycling shall reach a minimum of 80% by weight of the lamps.	88%	Achieved

Directive	Title	Article	Targets		Current progress to target in Ireland	Indicator
			Target date	Specifics		
2000/53/EC	End of Life Vehicles Directive ⁸	7(2)(a)	1-1-2006	Reuse and recovery to a minimum of 85% by average weight of vehicle and year.	88%	Achieved
				Reuse and recycling to a minimum of 80% by average weight of vehicle and year.	82%	Achieved
		7(2)(b)	1-1-2015	Reuse and recovery to a minimum of 95% by average weight of vehicle and year.	(88%)	Risk Due January 2015
				Reuse and recycling to a minimum of 85% by average weight of vehicle and year.	(82%)	Risk Due January 2015
2006/66/EC	Batteries Directive ⁹	10(2)	31-12-2011	Minimum 25% collection rate for batteries & accumulators.	28% ¹⁰	Achieved
			26-9-2016	Minimum 45% collection rate for batteries & accumulators.	(28%) ¹¹	Risk Due September 2016
		12(4)	26-9-2011	Recycling processes shall achieve the following minimum recycling efficiencies:		
				(a) recycling of 65 % by average weight of lead-acid batteries and accumulators, including recycling of the lead content to the highest degree that is technically feasible while avoiding excessive costs;	79% ⁹	Achieved
				(b) recycling of 75 % by average weight of nickel-cadmium batteries and accumulators, including recycling of the cadmium content to the highest degree that is technically feasible while avoiding excessive costs; and	75% ⁹	Achieved
				(c) recycling of 50 % by average weight of other waste batteries and accumulators.	57% ⁹	Achieved

⁸ 2012 data, most recent reported to the European Commission.

⁹ Data presented as per DECLG report to European Commission June 2013, with information for reference period 2009-2012.

¹⁰ Collection rate for 2012. 2011 target met in 2011 (29%).

¹¹ Collection rate for 2012.

Directive	Title	Article	Targets		Current progress to target in Ireland	Indicator
			Target date	Specifics		
1999/31/EC	Landfill Directive	5(2)	(16-7-2006) 16-7-2010 ¹²	Biodegradable municipal waste going to landfills must be reduced to 75% of the total quantity (by weight) biodegradable municipal waste produced in 1995 (< 916,000 t)	860,000t ¹³	Achieved
			(16-7-2009) 16-7-2013	Biodegradable municipal waste going to landfills must be reduced to 50% of the total quantity (by weight) biodegradable municipal waste produced in 1995 (< 610,000 t)	589,000 t ¹⁴	On track Due July 2013
			16-7-2016	Biodegradable municipal waste going to landfills must be reduced to 35% of the total quantity (by weight) biodegradable municipal waste produced in 1995 (427,000 t)	380,810 t ¹⁵	On track Due July 2016
2008/98/EC	Waste Framework Directive ¹⁶	11(2)(a)	12-12-2020	Preparing for reuse and recycling of 50% by weight of household derived paper, metal, plastic & glass (includes metal and plastic estimates from household WEEE).	45%	On track Due December 2020
			12-12-2020	Preparing for reuse, recycling and other material recovery (incl. beneficial backfilling operations using waste as a substitute) of 70% by weight of C&D waste (excluding natural soils & stone)	97%	Achieved
		29	12-12-2013	Establishment of a National Waste Prevention Programme (NWPP)	NWPP established in 2004	Achieved

¹² Ireland secured a four-year derogation on first and second targets.

¹³ 2010 BMW tonnage disposed to landfill.

¹⁴ 2012 BMW tonnage disposed to landfill

¹⁵ 2013 BMW tonnage disposed to landfill. This is a preliminary figure and is liable to change.

¹⁶ 2011 data, most recent reported to the European Commission. The deadline for reporting 2012 data to the European Commission is 30 September 2014.

2. Introduction

The EPA compiles national statistics on waste generation and management in the Republic of Ireland. These figures are primarily collated to meet European legislative reporting obligations and in particular:

- Waste Statistics Regulation (2150/2002/EC as amended);
- Waste Framework Directive;
- EU Producer Responsibility Initiative Directives;
- Structural and Regional Indicators (eg the Sustainable Development Indicator on Municipal Waste and the Regional Environmental Questionnaire).

These data are subsequently published in the National Waste Report (NWR), or in bulletin format. This report covers the calendar year 2012 and includes data on municipal waste, hazardous waste and also particular waste streams subject to Producer Responsibility Initiatives (packaging, waste electrical and electronic equipment, waste tyres and end of life vehicles).

The EPA is moving to biennial publication of the NWR from 2014. This will align publication of the NWR with Ireland's submission under the EU Waste Statistics Regulation, which reports on waste generation across all economic sectors in the State, by waste type, as well as waste treatment within the State and information on selected waste infrastructure. In the intervening years, a waste bulletin will be published to provide a high-level overview of key trends for waste generation and management.

2.1 Survey Approach and Data Compilation

This National Waste Report presents waste data for the calendar year 2012. The following sources were surveyed by the EPA to collate the information presented:

- Local authorities, including the National Transfrontier Shipment Office at Dublin City Council;
- EPA licensed waste operators;
- Local authority permitted waste operators;
- EPA licensed Integrated Pollution and Prevention Control activities;
- Compliance schemes and self-complying producers (for Producer Responsibility Initiatives).

In addition, the EPA receives data on collected household waste from the National Waste Collection Permit Office (NWCPO) in Offaly County Council). This Office was established in 2012 to administer Waste Collection Permits (WCP) on behalf of all 34 local authorities. Its establishment has introduced significant improvements in the quality and availability of waste collection data.

Quality Assurance and Quality Control

All survey returns to the EPA were desk-top validated and 35 data verification audits were carried out covering three local authority functional areas and 32 waste operators. Data reconciliation visits were completed with the WEEE and packaging compliance schemes. The EPA provided webcasts on completion of the surveys, updated its online guidance manuals,¹⁷ and provided a helpline and dedicated e-mail address for waste operators.

The waste accounting method used in this and previous NWRs does not include material in transit or temporary storage as it is neither disposed nor recovered in the calendar year. Totals appearing in this report may vary by +/- 1 tonne due to statistical rounding.

17 See www.wastesurvey.ie.

Reporting Burden

Compilation of comprehensive national statistics is necessary to inform policy and to provide timely and accurate data for legislative EU reporting requirements. The EPA recognises the demands on waste operators associated with the multiplicity of waste reporting requirements, particularly in the first quarter of each calendar year.

The EPA is working at a number of levels to reduce this reporting burden. For example, the EPA uses existing data sources where possible such as waste collection and waste facility permit annual returns and Pollutant Release and Transfer Returns (PRTR). However, the complexity of EU reporting obligations often requires specific data that are not available from these annual returns. In addition, data on source of waste is key to reporting on municipal waste. As a result, EPA needs more detailed information from particular operators and especially those that are 'end-handlers' i.e., operators who undertake the final treatment (disposal or recovery) at their facility, or who are the point of export of the waste which calls for separate surveying of these operators. The lack of a national register of authorised waste activities and treatment capacity is also an ongoing data gap for the State.

The EPA is addressing the need to reduce multiple waste reporting obligations into the Agency with the aim to stream-line and harmonise waste reporting. This will require collaboration and co-operation with key data providers who will be informed of this project as it progresses. The EPA is also accruing benefits from collaboration on waste data collation and validation with other regulators and stakeholders such as Central Statistics Office, NWCPO at Offaly County Council, NTFSO at Dublin City Council, the regional co-ordinators for waste management plans and the compliance schemes, and will continue with these initiatives.

2.2 National developments and issues

12 |

This section reports on key developments in national and EU policy and legislation since publication of the last National Waste Report for 2011 published in March 2013.

2.2.1 Ireland's National Waste Prevention Programme

The EPA's *'Towards a Resource Efficient Ireland: A National Strategy to 2020'*¹⁸ incorporating Ireland's National Waste Prevention Programme was published in July 2014. This is the fourth iteration of the programme since its inception in 2004. Over the years the programme has evolved beyond an initial focus on preventing generation of solid wastes to a broader view of preventing wastage across materials, energy and water (primarily because of the integrated nature of relationships between each). The latest programme reflects this broad approach and highlights the key role for the programme in delivering on national priorities on competitiveness and green growth. It sets out the programme aims for the period to 2020.

The structure of the programme is shown in the diagram below, along with linkages to other relevant EPA activities. In particular, the publication of national waste statistics supports the successful implementation of the National Waste Prevention Programme by providing trends and information on waste generation and management and also context on the quantities and types of waste arising in the State. It informs the effective management and prevention of waste on a national and regional basis and enables the prioritisation of efforts to target the prevention, recycling and management of waste streams.

18 <http://www.epa.ie/pubs/reports/waste/prevention/towardsaresourceefficientireland.html#.U7a1DaNOO70>



Figure 1 Structure of 'Towards a Resource Efficient Ireland: A National Strategy to 2020'

2.2.2 National Hazardous Waste Management Plan

A revised National Hazardous Waste Management Plan¹⁹ for the Republic of Ireland was published in June 2014 covering a six-year period from the date of publication (2014-2020). This third plan is a revision of the National Hazardous Waste Management Plan 2008 - 2012 and sets out the priorities to improve the management of hazardous waste, taking into account the progress made since the previous plan and the waste policy and legislative changes that have occurred since the previous plan was published.

| 13

The objectives of the revised Plan are:

- To prevent and reduce the generation of hazardous waste by industry and society generally;
- To maximise the collection of hazardous waste with a view to reducing the environmental and health impacts of any unregulated waste;
- To strive for increased self-sufficiency in the management of hazardous waste and to minimise hazardous waste export;
- To minimise the environmental, health, social and economic impacts of hazardous waste generation and management.

¹⁹ <http://www.epa.ie/pubs/reports/waste/haz/nationalhazardouswastemanagementplan2014-2020.html#.U7q2LaNOO70>

2.2.3 Regional Waste Management Plans

The Government's most recent waste management policy document 'A Resource Opportunity – Waste Management Policy in Ireland' includes provision for a reduction in the number of waste management planning regions from ten to three. During 2013, the composition of the three new waste management planning regions and the lead authorities were confirmed as set out in Table 2 below.

Table 2: Details of waste management planning regions

Region	Constituent local authorities	Lead authority
Connacht-Ulster	Cavan, Donegal, Galway City, Galway County, Leitrim, Mayo, Monaghan, Roscommon, Sligo	Mayo County Council
Eastern-Midlands	Dublin City, Dun Laoghaire-Rathdown, Fingal, Kildare, Laois, Longford, Louth, Meath, Offaly, South Dublin, Wicklow, Westmeath	Dublin City Council
Southern	Carlow, Clare, Cork City, Cork County, Kerry, Kilkenny, Limerick, Tipperary, Waterford, Wexford	Tipperary-Limerick Consortium

The lead authorities, as set out in the table above, gave notice of the intention to commence the preparation of new Regional Waste Management Plans in October 2013. The EPA has been inputting into the development of the regional waste management plans. In particular, input has been provided on the indicators chosen for the plans to ensure that they are measurable, consistently applied across the three regions and have existing (or planned) validated data sources. In addition, the EPA has input to the Strategic Environmental Assessment and Appropriate Assessment process.

14 |

2.2.4 Producer Responsibility Initiative (PRI) Review

A review of the Producer Responsibility Initiative model in Ireland was launched by the Minister for Environment, Community and Local Government in July 2012. The main report of the review was published in July 2014 for public consultation.²⁰ This comprehensive report is the first to provide a scrutiny of the process whereby producers take responsibility for the products they place on the market at their end of life. The process of implementing some of the recommendations made in this report has started.

Priority was given to the publication of two reports on (i) End of Life Vehicles and (ii) Tyres and Waste Tyres which were published in November 2013 for public consultation. Following on from this review, two Working Groups for the Tyres and ELV sectors have been established to progress the recommendations in these reports.

2.2.5 Updated Producer Responsibility Initiative (PRI) Regulations

Three sets of PRI Regulations relating to End-of-Life Vehicles, Packaging and Batteries & Accumulators came into effect from June 21 2014:

- S.I. No. 281 of 2014 – European Union (End-of-Life Vehicles) Regulations 2014;
- S.I. No. 282 of 2014 – European Union (Packaging) Regulations 2014;
- S.I. No. 283 of 2014 – European Union (Batteries and Accumulators) Regulations 2014.

20 <http://www.environ.ie/en/Environment/Waste/PublicConsultations/>

These Regulations replace and revoke the following Statutory Instruments:

- S.I. No. 268 of 2008- Waste Management (Batteries and Accumulators) Regulations 2008;
- S.I. No. 798 of 2007- Waste Management (Packaging) Regulations 2007;
- S.I. No. 282 of 2006- Waste Management (End-of-Life-Vehicle) Regulations 2006.

It is intended to provide for fixed payment notices for certain breaches of Producer Responsibility Initiative statutory provisions in the forthcoming Environment Miscellaneous Provisions Bill 2014, and as a consequence certain technical amendments to the Packaging, Batteries and End-of-life Vehicle Regulations were required to facilitate this. The new Regulations consolidate previous amendments made to them and have been made using one enabling provision (European Communities Act) and now contain explicit offence and penalties provisions. No other substantive changes have been made to the previous Regulations at this time.

2.2.6 Updated Waste Management (Facility Permit and Registration) (Amendment) Regulations 2014

The Waste Management (Facility Permit and Registration) (Amendment) Regulations 2014 (S.I. No 320 of 2014) were published in July 2014 and amend the existing 2007 Regulations (S.I. No. 821 of 2007) by strengthening conditions in relation to traceability of material, by putting an onus on proof of ownership and full traceability for material purchased at permitted waste facilities. This is in particular to address metal theft risks.

2.2.7 Regulation of Household Waste Collection

The performance of the household waste collection market will be crucial in achieving overall waste policy objectives and meeting national targets on landfill diversion as set out in *A Resource Opportunity - Waste Management Policy*. The July 2012 policy document set out a range of proposals to significantly revise the existing regulatory regime to ensure, *inter alia*, that waste collected is managed in accordance with the waste hierarchy; that mandated service levels are delivered, that pricing structures are put in place to incentivise waste reduction and source segregation by households and that Customer Charters are put in place by all waste collection providers. The Department of Environment, Community and Local Government (DECLG) published a discussion paper²¹ in November 2013 and there was a public consultation process on the environmental regulation of household waste collection to inform the detailed development of the new regulatory regime to strengthen the regulation of household waste collection. Ninety-one submissions were received from a range of stakeholders, the significant majority indicating support for the measures proposed in the consultation document. Work is now underway on preparation of a package of legislative measures to give effect to a wide range of changes to the existing regulatory structure including measures such as:

- a move to a pay per weight (by kilogram) system of charging, with standing charge to cover administration/provision of bins;
- introduction of a range of on the spot fines/fixed payment notices for households and operators;
- introduction of a three strike/one strike approach for serial offenders (operators);
- increase in the number of mandatory conditions to be applied to all collection permits (eg customer charters);
- application of household waste collection standards to pay to use (PTU) units.

Drafting legislation to implement these changes is underway and stakeholder consultation is ongoing by DECLG.

21 <http://www.environ.ie/en/Environment/Waste/PublicConsultations/>

2.3 EU developments and obligations

2.3.1 Seventh Environment Action Programme

A significant policy development for environment protection generally and more particularly, resource efficiency, is the Seventh Environmental Action Programme (EAP)²². The programme identifies three priority areas where more action is needed: (i) protect nature and strengthen ecological resilience (ii) boost resource-efficient, low-carbon growth, and (iii) reduce threats to human health and wellbeing.



Living well, within
the limits of our planet

The focus on transforming the EU into a resource-efficient, low-carbon economy highlights the need, in particular, for significant improvements to the environmental performance of products over their life cycle and for reductions in the environmental impact of consumption, including cutting food waste.

2.3.2 Towards a circular economy: a zero waste programme for Europe

The European Commission published a new package of policy and legislative reforms for the waste area in July 2014. The package, *Towards a Circular Economy: A Zero Waste Programme for Europe*²³, aims to turn Europe into a more circular economy and boost recycling in the Member States. As stated in the publication of the Communication, turning Europe into a more circular economy means:

- boosting recycling and preventing the loss of valuable materials;
- creating jobs and economic growth;
- showing how new business models, eco-design and industrial symbiosis can move us towards zero-waste;
- reducing greenhouse emissions and environmental impacts.

As part of the circular economy package, the Commission adopted a legislative proposal to review recycling and other waste-related targets in the EU. The review to strengthen waste targets in existing directives is put in the context of an ambitious drive towards fundamental transition from a linear to a more circular economy. The legislative proposals refer mainly to the Waste Framework Directive, the Landfill Directive and the Packaging and Packaging Waste Directive. In addition to the targets review, waste legislation will be simplified, and co-operation between the Commission and Member States will be stepped up to ensure better implementation. Minimum operating conditions for extended producer responsibility schemes will be laid down. Tailor-made approaches will be implemented for specific waste streams, such as marine litter, phosphorus, construction and demolition, food, hazardous and plastic wastes.

22 <http://ec.europa.eu/environment/newpra/>

23 <http://ec.europa.eu/environment/circular-economy/>

3. Municipal waste generation and management

- 2012 was the first year that the percentage of municipal waste managed for recovery (59%) exceeded the percentage managed for disposal (41%).
- In 2012, 427,093 tonnes of municipal waste was incinerated/used as a fuel. This is a significant increase on the 195,622 tonnes reported for 2011.
- Of household waste managed in 2012, 79% was collected at kerbside, 4% was bulky household waste collections and 17% was otherwise brought for treatment (bring banks, civic amenity sites etc.).
- Of household residual waste collected at kerbside, 48% was sent directly to landfill for disposal or to landfill via a bulking station.

3.1 Sustainable Development Indicator on Municipal Waste

The European Commission seeks data for the sustainable development indicator (SDI) on municipal waste on an annual basis. The data to be reported are municipal waste:

- (i) Generation;
- (ii) Landfilling (D1-D7, D12);
- (iii) Incineration (R1, D10);
 - a. Incineration/energy recovery (R1);
 - b. Incineration/disposal (D10);
- (iv) Material recycling (R2-R11, excluding part of R3);
- (v) Composting and digestion (part of R3).

| 17

In Ireland, municipal waste is defined as household waste as well as commercial and other waste that, because of its nature or composition, is similar to household waste. It excludes municipal sludges and effluents.

The EPA follows the Commission's guidance on reporting on municipal waste²⁴, although this guidance is a work in progress as the Commission is seeking to increase understanding of how municipal waste is reported in each Member State and look for ways to improve comparability of this indicator across Member States.

The reporting of municipal waste management has become more complicated in recent years, with increased movements of wastes between facilities before the point of final treatment, and increasing segregation and mechanical treatment of municipal waste streams. This means that the source of the waste as municipal/non-municipal is difficult to track from point of origin to point of final treatment. In the validation of 2012 data, special attention was paid to getting a detailed description of the wastes from the operators (particularly EWC chapter 15 segregated packaging) to be able to differentiate between municipal and non-municipal waste streams.

The EPA published preliminary data for 2012 in March 2014²⁵. This report provides the finalised data for year 2012.

²⁴ http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/documents/Municipal_waste_statistics_guidance.pdf

²⁵ www.epa.ie/pubs/reports/waste/stats/ireland-progress-towards-eu-waste-targets.html

Table 3: Municipal waste generated, managed and treatment activities, 2012

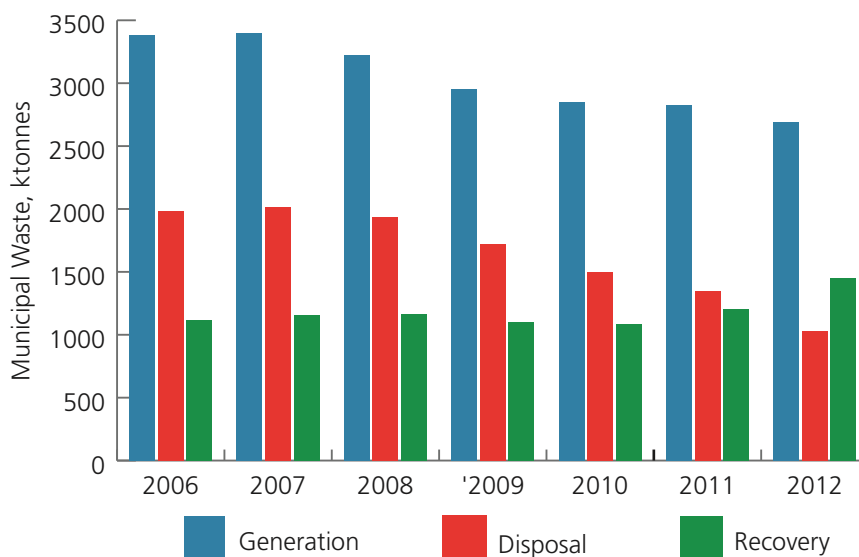
Municipal waste:	Quantity (tonnes)
Generation	2,692,537
Management	2,478,337 ²⁶
Landfilling (D1-D7, D12)	1,027,577
Incineration/disposal (D10)	49
Incineration/energy recovery (R1)	427,093
Material recycling (R2-R11, excluding part of R3)	828,492
Composting and digestion (part of R3)	156,212

3.2 Municipal waste generation

The difference between municipal waste managed and municipal waste generated is the estimate of unmanaged household waste (214,200 tonnes). See Appendix M for details.

The quantity of municipal waste generated has been declining since a peak in 2007, and this trend continued in 2012 with a 4.6% decrease in tonnage generated compared to 2011. See Figure 2 and Appendix A.

18 | **Figure 2:** Municipal waste generated, disposed and recovered in Ireland, 2006 to 2012



²⁶ The difference between tonnage managed and tonnage reported under the various SDI municipal waste treatment categories is 38,914 tonnes of municipal wastes recovered at landfill, a non-recycling process.

3.3 Municipal waste disposal

Municipal waste disposal activities are grouped for the EU Sustainable Development Indicator on municipal waste as (i) landfilling and (ii) incineration/disposal (ie incineration without energy recovery, D10).

3.3.1 Landfilling of municipal waste

A total of 18 municipal landfills in the State accepted 1,027,577 tonnes of municipal waste for disposal in 2012, a 24% decrease on the municipal tonnage disposed in 2011. No municipal waste was reported as exported for landfilling.

Table 4 shows the breakdown of municipal landfills by region and the tonnage disposed in 2012²⁷ (see also Appendix E). Approximately 54% of the tonnage disposed was accepted at three landfills - Drehid and Ballynagran Landfills (Eastern and Midlands Region) and Gortadroma Landfill (Southern Region). For detailed information on remaining municipal waste disposal capacity in the State, see Chapter 5 Waste Infrastructure.

Table 4 Municipal waste landfills by region and tonnage disposed in 2012

Waste Management Planning Region	Number of landfills accepting municipal waste in 2012	Landfills ²⁸	Municipal waste disposal to landfill in region (tonnes)
Connacht Ulster	5	Derrinnumera, Rathroeen, Ballynacarrick, Scotch Corner, <i>East Galway Residual</i>	178,529
Eastern and Midlands	7	Arthurstown, Balleally, Kyletalesha, Whiteriver, Rampere, <i>Drehid Waste Management Facility, Knockharley, Ballynagran</i>	626,692
Southern Region	6	Youghal, Powerstown, Donohill, Holmestown, North Kerry, Gortadroma	222,356
Total tonnage municipal waste disposed to landfill in 2012			1,027,577

3.3.2 Incineration of municipal waste without energy recovery

The TransFrontier Shipment (TFS) notified waste records indicate that 49 tonnes of municipal waste were exported for incineration without energy recovery, which is a disposal activity. These were hazardous wastes such as paints, pesticides and medicines.

3.4 Municipal waste recovery

Municipal waste recovery activities are grouped for the SDI on municipal waste as (i) incineration/ energy recovery (ii) composting/digestion (iii) material recycling (excluding composting/digestion).

3.4.1 Incineration/energy recovery

It is reported that 427,093 tonnes of municipal waste was incinerated/energy recovered (R1) in 2012. This is a significant increase on the 195,622 tonnes reported for 2011. The tonnage of municipal waste used as a fuel has been increasing in recent years, mainly through increased production of refuse derived fuel/solid recovered fuel at mechanical treatment facilities in the State. These waste streams are then used as a fuel at cement kilns and at incinerators at home and abroad. There was also an increase in the export of baled municipal waste (EWC 20 03 01) (ie not mechanically treated) to incinerators in 2012.

²⁷ Repatriated waste and waste from illegal landfilling is not included as any such waste was not generated in 2012.

²⁸ *Green italic* text shows private sector landfills.

The first municipal waste incinerator in the State had its first full year of operation in 2012. There is also some municipal wood/woodchip used as a fuel in boilers in the State which is included in this recovery tonnage.

3.4.2 Composting/digestion

It is reported that 156,212 tonnes of biodegradable municipal waste was composted or fermented in 2012. There was no significant increase/decrease in this recovery activity between 2011 and 2012. This recovery mainly comprises kitchen and canteen waste, garden and parks waste and other municipal wastes such as edible oils and fats that were reported as composted/anaerobically digested in 2012, as well as municipal source wood-chip input to the composting process. Some waste landfills, closed and open, operate co-located composting activities.

3.4.3 Material recycling (excluding composting/digestion)

It is reported that 828,492 tonnes of municipal waste was sent for recycling (excluding composting/digestion). This compares to 861,361 tonnes reported for 2011. This tonnage includes a variety of municipal waste streams - glass, paper & cardboard, plastic, metals, wood, edible oils and fats, textiles, portable batteries and household WEEE sent for recycling. Ireland has no glass manufacturing facility, paper mill or metal smelter, therefore these waste streams are mainly exported for recycling. The recycled tonnage includes a small quantity of biodegradable wastes reported as inputs into the rendering processes at IPPC licensed facilities.

3.5 Municipal waste treatment trends

2012 was the first year that the percentage tonnage of municipal waste managed for recovery (59%) exceeded the percentage tonnage managed for disposal (41%).²⁹

Municipal waste disposed accounts for 41% of the tonnage managed in 2012. This is a significant decrease from 53% in 2011. Diversion of municipal waste from landfill is increasing for the following reasons:

- (i) Increases in the landfill levy for disposal of waste to landfill; (see Figure 3)
- (ii) Requirements to divert biodegradable municipal waste from disposal to landfill under the Landfill Directive targets;
- (iii) Capacity for incineration of municipal waste at Ireland's first municipal waste incinerator;
- (iv) Increasing mechanical treatment of residual waste at waste facilities, leading to the production of refuse derived fuel/solid recovered fuel which is used as a fuel in Ireland and abroad. Organic fines arising from the mechanical treatment of residual waste can be biostabilised, and are generally recovered at landfill.

Figure 3 plots the landfill levy (€) since 2002 against the percentage municipal waste disposed to landfill. The increases in the levy, particularly since 2008, have impacted positively by reducing the percentage of municipal waste disposed to landfill.

²⁹ For more information on municipal waste indicators between 2007 and 2012, see Appendix A.

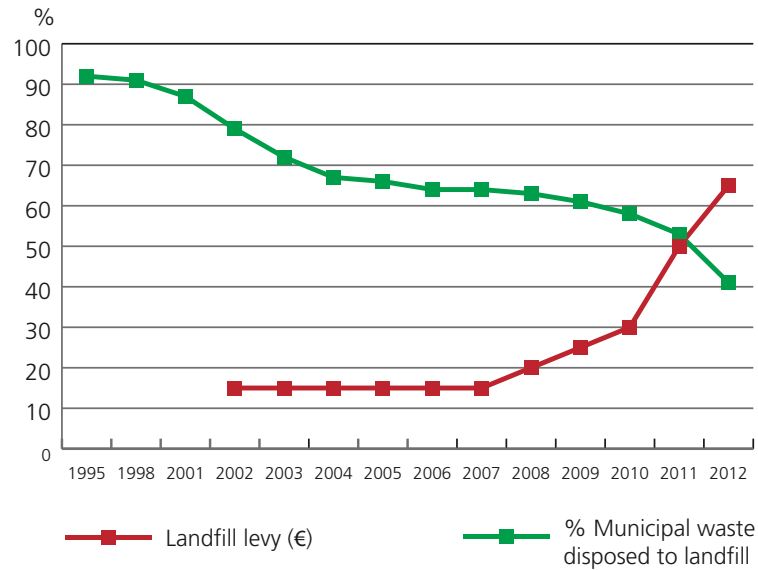


Figure 3: Landfill levy versus percentage municipal waste disposed to landfill, 1995 to 2012

Figure 4 below compares Ireland's percentage municipal waste landfilled, incinerated and recycled in 2011 and 2012 to the EU28³⁰ average. Ireland's recycling rate (40%) is closing in on the EU28 average (42%). Although Ireland is still very dependent on landfill for municipal waste disposal (41%) in comparison to the EU28 average (24%), the increases in municipal waste incinerated with and without energy recovery (7% to 17% between 2011 and 2012) means we are closer to the EU28 average (24%) than ever before.

| 21

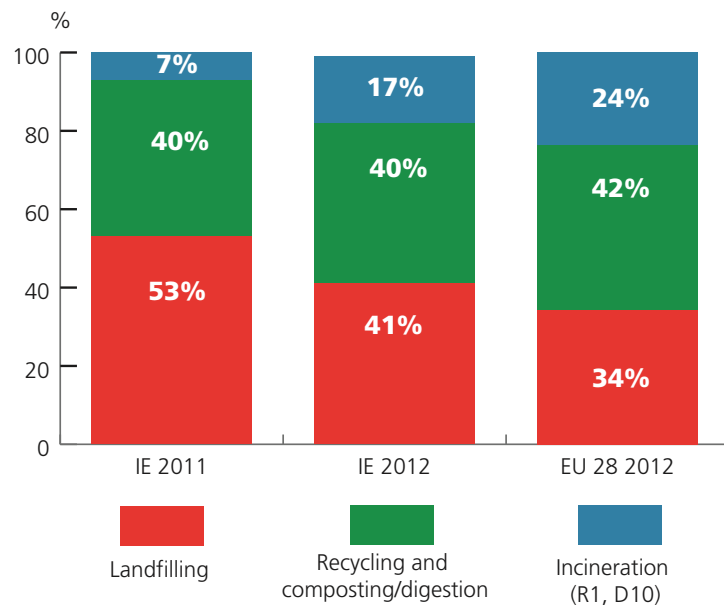


Figure 4: Management of Irish municipal waste in 2011 and 2012 in comparison with EU 28

Table 5 below sets out the tonnage of municipal waste recovered in Ireland and exported for recovery in 2012.

30 http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/8-25032014-AP/EN/8-25032014-AP-EN.PDF for 2012 report year.

Table 5: Municipal waste recovered in Ireland and abroad in 2012

2012	
Recovered in Ireland	Exported for recovery
607,657 tonnes	843,053 tonnes

(Source: Recovery organisations survey, landfill surveys, compliance schemes)

3.6 Household waste

3.6.1 Introduction

Household waste is a subset of municipal waste. It is a requirement under the Waste Statistics Regulation (2150/2002/EC as amended) to report on household waste generation biennially. Household waste generation is therefore a dataset which has been separately collated for a number of years, although each year the EPA seeks to improve the quality of this dataset. The information on kerbside collection of waste is improving, particularly enhanced for 2012 by validation of the national dataset by the NWCPO at Offaly County Council (previously each local authority would have been responsible for validation of collections in their functional area and there was a lack of consistency in validation). There are still some data improvements and data gaps which EPA intends to address in the coming years, which are discussed within the sections below.

3.6.2 Quantities and trends

The quantity of household waste generated (1,577,100 tonnes) is taken as the quantity of household waste managed (1,362,900 tonnes) plus an estimate of unmanaged household waste (214,200 tonnes).

The quantity of household waste managed is taken as the quantity (i) collected at kerbside (ii) brought by householders to bring banks, civic amenity sites, directly to landfill, to pay-to-use units (iii) bulky household skip waste and (iv) WEEE and portable batteries brought to retailers and to special collection days (see Appendix B)³¹.

Of household waste managed in 2012, 79% was collected at kerbside, 4% was bulky household waste collections and 17% was otherwise brought for treatment (bring banks, civic amenity sites, estimate brought to pay-to-use (PTU) compactors, directly to landfill, to retailers/collection days in the case of WEEE and portable batteries).

The quantity of household waste disposed to landfill is known from the landfill surveys; and the quantity recovered is estimated as the difference between the quantities managed and disposed. The recent trends in household waste management are presented in Table 6.

Table 6: Trends in household waste management, 2007 to 2012

	2007	2008	2009	2010	2011	2012
Quantity managed (t)	1,625,490	1,556,879	1,498,469	1,420,706	1,406,576	1,362,900
Quantity disposed to landfill (t)	1,200,980	1,155,567	1,056,267	843,842	750,066	589,863
Quantity recovered (t)	424,510	401,312	442,202	576,864	656,510	773,037
Recovery rate (%)	26	26	30	41	47	57

31 An estimate of home composting, which had been included in household waste managed tonnage in previous years, was not included for 2012 due to Eurostat guidance on reporting of municipal waste.

This is the first year that the household waste recovery rate (57%) exceeded the disposal rate (43%) (see Figure 5). There was a 10% decrease in the tonnage of household waste reported as disposed to landfill in 2012 compared to 2011. These changes are due to a number of factors:

- i. The landfill levy per tonne of waste disposed at landfill facilities is increasing year on year. Such increases are contributing to the diversion of waste from disposal to recovery options.
- ii. The first municipal waste incinerator in the State had its first full year of operation in 2012 so waste was diverted for recovery rather than disposal.
- iii. The amount of refuse derived fuel and baled municipal waste exported for energy recovery abroad has been increasing (36% increase between 2011 and 2012).

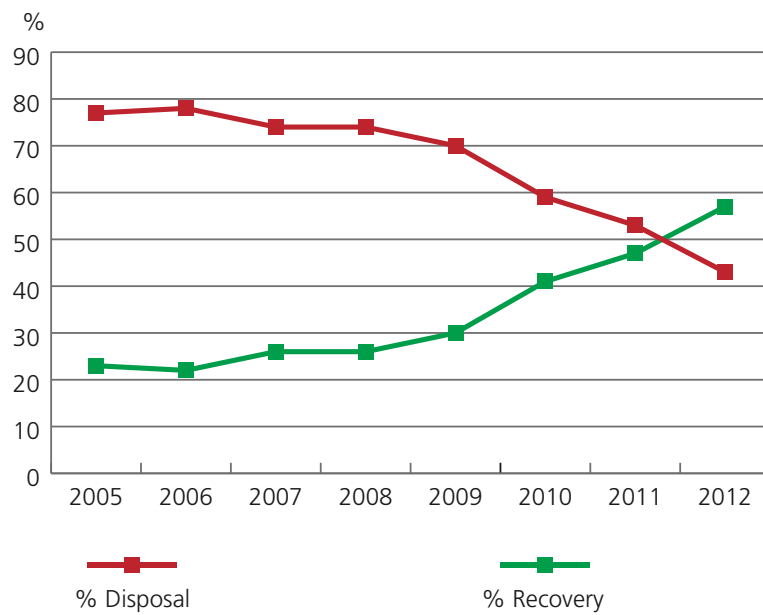


Figure 5: Trends in percentage household disposal and recovery, 2005 to 2012

Figure 6 illustrates that the quantity of household waste managed decreased quite significantly between 2007 and 2012. This decrease reflects the decrease in personal consumption but runs contrary to population growth trends.

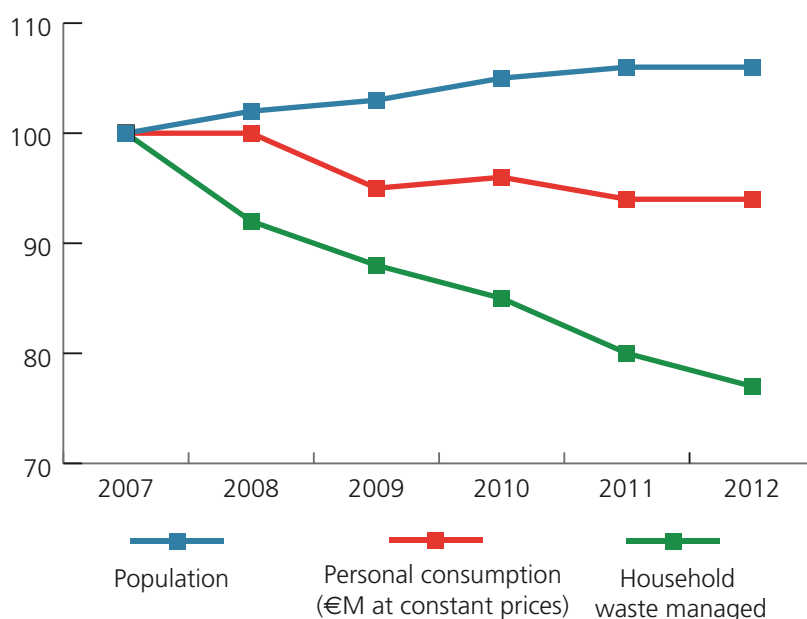


Figure 6: Household waste managed with population and personal consumption indices³², 2007-2012

Average household waste generation per capita in the Republic of Ireland was 344 kg in 2012, which is 21% lower than the average in the EU 27 in 2010 (latest data available). See Figure 7 below.

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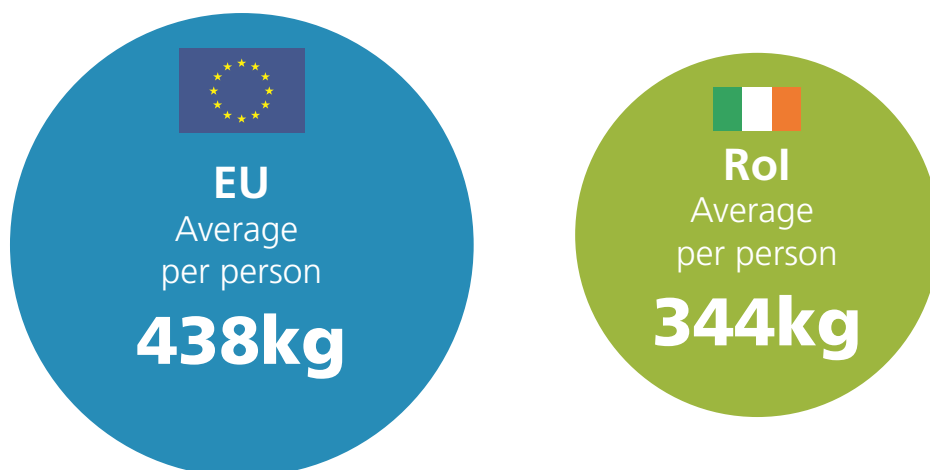


Figure 7: Household waste generation per capita in EU 27 and Republic of Ireland³³

3.6.3 Household kerbside waste collection

Kerbside collection is the primary waste management route for household waste in the State. Authorised waste collectors are required to submit an annual return regarding tonnage and type of waste collected per local authority functional area. The data presented in this report are from the annual return dataset managed by NWCPO at Offaly County Council.

³² CSO data on population and consumption.

³³ EU 27– Eurostat, 2010 data (Waste Statistics Regulation); Republic of Ireland, 2012 data.

Household kerbside collection is primarily undertaken by the private sector as most local authorities have moved out of the collection market in recent years. Ninety-one private sector operators and seven local authorities (Dublin City, Dun Laoghaire Rathdown, Galway City, Kerry, Kilkenny, Waterford County and Wexford) reported collecting household waste at kerbside for all or a portion of 2012. The number of collectors operating in each local authority area varied widely, from a minimum of two to a maximum of fifteen (average of nine per local authority area). Some permit holders only reported servicing a small number of households.

Waste collection operators (private and public) reported collecting 1,069,920 tonnes of household waste at kerbside in 2012, a 4% reduction on 2011. Full data on tonnage collected at household kerbside for each local authority area are presented in Appendix B.

Of the 1,069,920 tonnes of household waste collected at kerbside in 2012, 68% were presented as mixed residual waste, 24% as mixed dry recyclables, 7.5% as organics and 0.5% as segregated glass. See Figure 8 below.

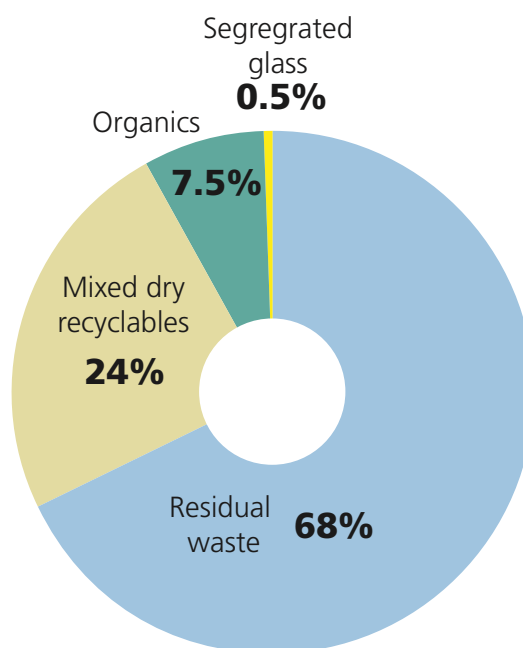


Figure 8: Household kerbside collections in 2012 (% by weight)

The Central Statistics Office's census data indicate that there were 1,649,408 permanent private households³⁴ in the State in April 2011. Waste collection permit holders and local authorities reported providing a household kerbside collection service to 1,197,928 households (approx. 72%). These data imply that 28% of permanent private households in the State do not avail of, or are not offered, a kerbside collection service. This is considered to be an overestimation for a number of reasons:

- i. Not all waste collection permit operators report accurately on the number of households they service. Issues identified include 'leakage' i.e. households change service providers during the year or the local authority exited the collection market during the year.
- ii. Data on number of households serviced within apartment complexes are considered poor quality (although an effort is being made to improve these data), and the number is probably underestimated. Apartments accounted for 11% of households in the State according to the 2011 census, so under-reporting on number serviced would impact on reports of percentage serviced.

³⁴ Private permanent household occupying a permanent dwelling such as dwelling house, flat or bedsitter (CSO definition). Previous years, total occupied houses had been used.

- iii. Operators who offer a 'tag-a-bag' service estimate the number of households that these customers represent as there is no register of customers.
- iv. Many households share a kerbside bin service with relatives/neighbours and this number of households is an unknown quantity at present.
- v. Households may have a kerbside collection service available to them, but opt to bring their waste to bring banks/civic amenity sites or pay to use (PTU) units.

The DECLG is preparing a package of legislative measures to give effect to changes to the existing household waste regulatory structure, following on from their consultation in November 2013 (see Section 1.2.5, Chapter 2). One of the proposed changes is that it will be mandatory for all waste collection operators to keep a customer register. This will result in improved data on number of households on a kerbside collection service.

The percentage of households with a kerbside collection service that have a 2-bin service remained at 98% in 2012 (same as 2011), and therefore meets the minimum EU Landfill Directive pre-treatment obligations, by virtue of segregation of waste with the 2-bin system. Of permanent private households on a kerbside collection service, 37% had an organic bin service. Cork City and Donegal County were the only local authority areas without a household kerbside organic bin collection service in 2012. There was negligible tonnage collected (<100 t) in Cork County and Leitrim (see Figure 9 and Appendix J for detailed tonnage information). Of permanent private households on a kerbside collection service, 3% had a segregated glass collection service in 2012.

Appendix K sets out the type of household kerbside collection service provided and Appendix L provides information on the percentage of permanent private households on kerbside bin collection services in each waste management region and local authority functional area.

An amount of 19,118 tonnes of household organic waste (mainly green waste) was also separately collected at civic amenity sites and at temporary bring centres (eg Christmas trees and other green waste) in 2012 (see Appendix J).

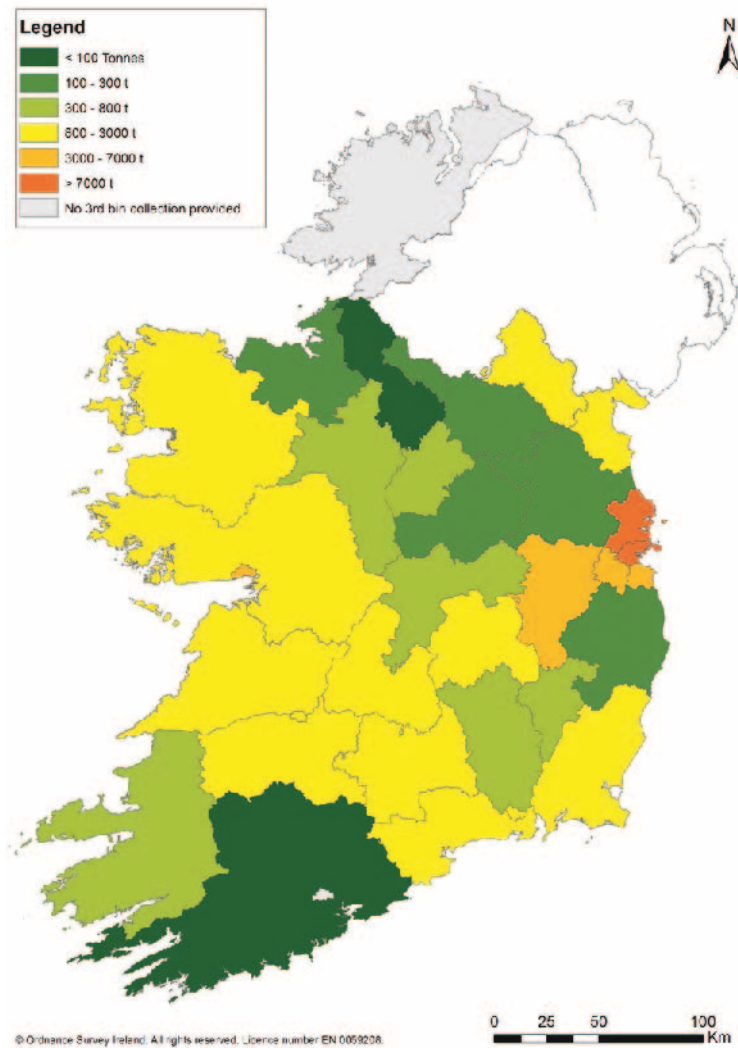


Figure 9: Kerbside collection of household organic waste in 2012 by local authority area

A survey of the character and composition of collected household waste (from the EPA's most recent municipal waste characterisation study in 2008) is available on the Waste Characterisation section of the EPA website www.epa.ie, and summarised in Appendix H of this report.

3.6.4 Treatment of household kerbside residual waste

The EPA has been working with the regional co-ordinators of the Southern Region, Eastern-Midlands Region and Connacht-Ulster Region in the preparation of the new waste management plans, including work on waste indicators. The treatment of residual waste collected at household kerbside is an indicator of particular interest.

The waste collection permit annual returns provide information on the local authority area where the waste was collected and the waste facility to which it was delivered from kerbside. There are four destination types assigned to the waste facilities where waste is delivered (i) landfill (ii) incineration with energy recovery (iii) bulking station (iv) mechanical treatment facility.

Most residual waste collected at kerbside was delivered directly to bulking stations (50%), followed by mechanical treatment stations (31%), landfill (13%) and incineration with energy recovery (6%).

The highest percentage of the household residual waste was delivered directly to bulking stations (50%), but the eventual treatment of this waste was unknown as only the first destination of the waste is recorded in the waste collection permit annual return dataset. The EPA therefore reviewed the 2012 national waste report returns for the bulking stations and assigned the percentage outgoing household residual from these stations to the next destination (i) landfill (ii) incineration with energy recovery or (iii) other waste facility.

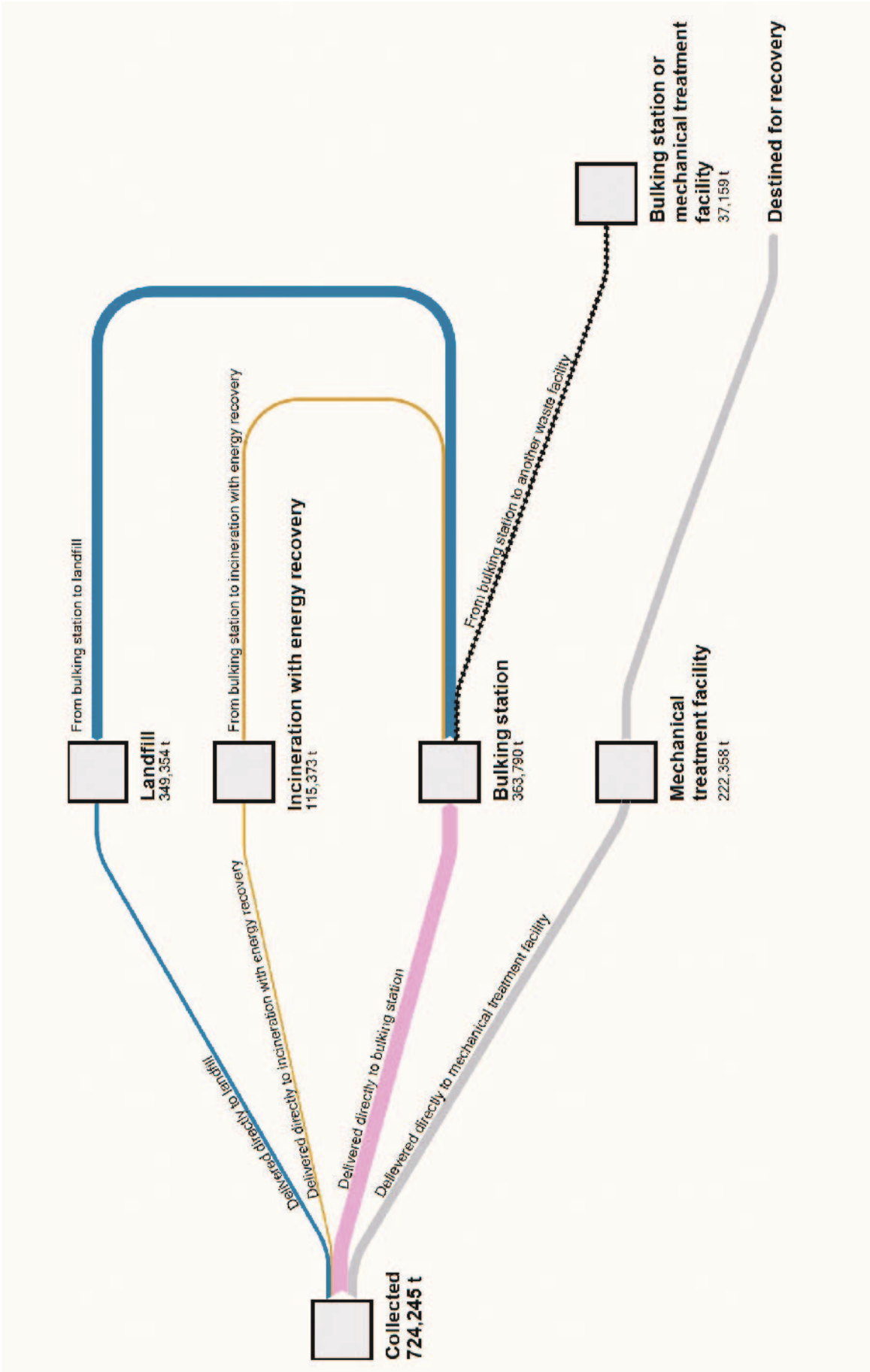
The analysis of the bulking stations' returns found that most of the residual waste went for disposal to landfill (70.4%) or incineration with energy recovery (19.4%). The remaining 10.2% of the residual waste was brought to another waste facility (either another bulking station or a mechanical treatment facility) for further treatment. Waste was often moved between sites owned by the same company.

The analysis of destinations post bulking stations resulted in a much clearer picture of the national treatment of household residual waste (see Table 7 and Figure 10). The treatment of household residual waste collected at kerbside in 2012 can therefore be broken down at national level as 48% sent for disposal to landfill, 47% sent for recovery (16% for incineration with energy recovery, and 31% sent for mechanical treatment destined for recovery), and the final 5% was sent to another waste facility (either bulking or treatment station) and its final treatment not analysed.

Table 7. Treatment of household residual waste (national, 2012)

	Quantity (tonnes)	% to destination pre-analysis of bulking station destinations	% to destination post-analysis of bulking station destinations
Household residual collected	724,245		
Residual directly to landfill and from bulking station to landfill	349,354	13%	48%
Residual directly to mechanical treatment facility	222,358	31%	31%
Residual directly to incineration with energy recovery and from bulking station to incineration with energy recovery	115,373	6%	16%
Residual from bulking station to another waste facility (bulking or mechanical treatment facility)	37,159	50% (initially delivered to bulking station)	5%

Figure 10: Treatment of household residual waste collected at kerbside



3.6.5 Household waste brought to civic amenity sites and bring banks

The proportion of overall household waste managed that is accepted at bring banks and civic amenity sites (for which data were available) was 15% in 2012, so this community infrastructure is very important in the national waste management strategy. The quantity of household waste deposited at civic amenity sites and bring banks is continuing to decrease since a peak in 2007/2008. Appendices C and D provide information on waste types and respective quantities collected at bring banks and civic amenity sites by householders in 2012.

The EPA has identified approximately thirty private sector waste operators providing a household waste bring service at their sites in 2012, for non-hazardous wastes such as residual and mixed dry recyclables. Private sector operators don't separately report waste accepted from householders at such bring centres from other wastes accepted at their facility. Local authorities provided the EPA with data for ten private sector CAS (in addition to data for all their own public CAS), so the quantity of household waste brought to all CAS (both public and private sector) is assumed to be under-reported although all data on municipal waste treatment (including household waste) are captured for reporting purposes.

3.6.6 Other managed household waste

The EPA has historically included household waste brought directly to landfill, household WEEE brought to retailers and special collection events and an estimate of home composting in the total managed household waste tonnage (see Appendix B). An estimate of home composting was not included for 2012, because of Eurostat guidance on reporting of municipal waste.

For 2012 data, a number of additions were made, to improve the comprehensiveness of the data. Data on bulky waste collected from households (generally skips) was taken from the waste collection permit dataset. Data on household waste collected at known PTUs was estimated. Data on portable batteries collected at retailers and other collection locations (not including CAS) were also added.

3.6.7 Unmanaged household waste

In order to calculate household waste generation in the State, the tonnage of unmanaged household waste is estimated. In 2012, the national estimate of uncollected household waste was 214,200 tonnes. See Appendix M for details on how the unmanaged household waste tonnage was calculated.

The Central Statistics Office's Quarterly National Household survey (QNHS), which is a large-scale, nationwide survey of households in the State, incorporated a Green Module in Q2 2014, with household waste management questions. The data are currently under analysis by CSO, but when available will increase understanding of the waste management options availed of by households, including bin-sharing practices, management of household hazardous wastes and home composting, for which we need better quality information for national waste reporting as well as for policy information.

3.7 Non-household municipal waste

The difference between the quantity of municipal waste managed (2,478,337 tonnes) and the quantity of household waste managed (1,362,900 tonnes) can be assumed to be the tonnage of non-household municipal waste managed (commercial and industrial non-process waste that is similar to household waste, street sweepings), i.e. 1,115,437 tonnes. This compares to 1,114,829 tonnes reported for 2011, (see Table 8).

Table 8: Non-household municipal waste management, 2007 to 2012

	2007	2008	2009	2010	2011	2012
Quantity disposed to landfill (t)	813,818	758,178	640,737	633,010	568,770	437,714
Quantity recovered (t)	735,257	719,219	659,070	508,005	546,059	677,723
Recovery rate (%)	48%	49%	51%	45%	49%	61%
Total (t)	1,549,075	1,477,397	1,299,807	1,141,015	1,114,829	1,115,437

(Source: Recovery organisations survey, local authority survey, landfill survey)

The increase in non-household municipal waste recovered is considered to be due to the increased energy recovery of residual waste.

The EPA published surveys on the character and composition of commercial waste in 2009 (Municipal Waste Characterisation 2008 Surveys) and in 2010 (3rd Bin Commercial Waste Bin Characterisation Report). The results of the 2008 surveys are summarised in Appendix H and the full reports are available for download from the Waste Characterisation section of the EPA website, www.epa.ie.

It is hoped that, with the evolution of the NWCPD's e-reporting system for waste collection permit Annual Environmental Returns, non-household municipal waste collection data as reported by collectors can be used in future years. However, this will depend on local authorities undertaking a thorough validation of the data.

3.8 Future municipal waste reporting

The EPA will continue to work with the European Commission, the regional co-ordinators for waste management plans and other stakeholders with regard to the standardisation of municipal waste reporting for national, regional and legislative reporting obligations. Ideally, the waste collection permit annual return dataset would be used to report on the collection of municipal waste (household and non-household sources), however, the quality of reporting and validation of this dataset needs to continue to improve. For example, some changes to the reporting system will need to be implemented to easily identify municipal waste streams collected at source (such as PTUs, wastes from bring banks and civic amenity sites). In addition, further guidance is needed from the Commission as to which segregated waste packaging streams should be counted as municipal waste.

4. Biodegradable municipal waste

- Preliminary data indicate Ireland is on course to meet the 2013 Landfill Directive target which allows a maximum of 610,000 tonnes of biodegradable municipal waste to be landfilled in 2013.
- There has been a decrease in the percentage of biodegradable municipal waste sent to landfill for disposal between 2011 (57%) and 2012 (54%).

4.1 Introduction

Biodegradable municipal waste (BMW) comprises those elements of the municipal waste streams that will rot or degrade biologically. The main constituents of the biodegradable proportion of municipal waste are typically parks and garden waste, food waste, timber, paper, card and textiles. There are two key pieces of EU legislation that deal with biodegradable waste. The first is the Landfill Directive (1999/31/EC) which requires the diversion of biodegradable waste from landfill. The second is the Waste Framework Directive (2008/98/EC) which requires Member States to take measures to encourage separate collection of biowaste (putrescible portion of biodegradable wastes).

4.2 EU Landfill Directive

In relation to BMW the Landfill Directive sets limits on what can be sent to landfill. These limitations (which are tied to the 1995 statistical base year for waste production in Ireland³⁵) are phased, with each phase having a stricter obligation in relation to diversion. These obligations can be summarised as follows:

- By 16th July 2010 Ireland can only landfill a maximum 75% of the BMW generated in 1995,
- By 16th July 2013 Ireland can only landfill a maximum 50% of the BMW generated in 1995,
- By 16th July 2016 Ireland can only landfill a maximum 35% of the BMW generated in 1995.

4.3 BMW disposed to landfill

In order to assist Ireland's obligations under the Landfill Directive, the EPA reviewed all operational municipal waste landfill licences in 2009. New conditions were inserted into the licences limiting the acceptance of BMW and requiring the determination of the BMW in municipal waste accepted.

4.3.1 Reporting to the EPA

Each landfill operator accepting municipal waste is required to report to the EPA on a quarterly basis the quantity of municipal waste and BMW accepted at the landfill. The reports are submitted via a web-based system that incorporates EPA approved BMW factors necessary to calculate the BMW content of various municipal waste streams. More information may be found in the '*Protocol for the Evaluation of Biodegradable Municipal Waste sent to Landfill*' (EPA, 2011³⁶).

The overall tonnage of BMW landfilled nationally in 2012, as reported by landfill operators to the EPA, was 589,260 tonnes (see Appendix E). This is less than the Landfill Directive target of 916,000 tonnes for that year.

An analysis of the types of municipal wastes accepted for disposal during 2012 is shown in Table 9. There was a significant reduction in the amount of untreated waste going to landfill compared to 2011 (refer to EPA's National Waste Report 2011³⁷). In addition, there was an increase in the quantity of residues from source separated recyclable waste which may be due to an increase in contamination levels of the mixed dry recyclable bins.

35 National Waste Database Report 1995. (EPA, 1996).

36 <http://www.epa.ie/pubs/advice/waste/municipalwaste/bmwsenttolandfillfacilities.html>

37 http://www.epa.ie/pubs/reports/waste/stats/National%20Waste%202011_web.pdf

Table 9: BMW tonnage of different types of municipal waste accepted at landfills in 2012

Waste Type	BMW tonnes	% BMW in municipal wastes
2-bin residual commercial waste	90,937	75%
2-bin residual household waste	113,394	63%
3-bin residual commercial waste	59,278	68%
3-bin residual household waste	100,418	47%
Ash residue from municipal waste incineration	0	0%
Bio-stabilised residual waste	0	0%
Bulky waste from sorting of municipal waste skips	14,178	50%
Fines residues from municipal waste bin collections ("wet waste")	1,101	95%
Fines residues from municipal waste skips	7,271	40%
Other	119,013	63%
Oversize residues from municipal waste bin collections ("wet waste")	13,766	41%
Oversize residues from municipal waste skips	39,983	43%
Residual municipal waste from civic amenity facility	6,132	63%
Residues from source separated recyclable waste ("clean materials recovery facility")	16,299	47%
Untreated 1-bin commercial waste	800	77%
Untreated 1-bin household waste	52	65%
Untreated cleansing waste (fly-tipping, street bins, road sweepings etc.)	6,403	65%
Untreated municipal waste skip waste	236	35%
Totals	589,259	54%

Figure 11 shows the tonnes of BMW landfilled per quarter in 2012 versus Landfill Directive targets since Quarter 3 2010 when the BMW limits came into force in the landfill licences.

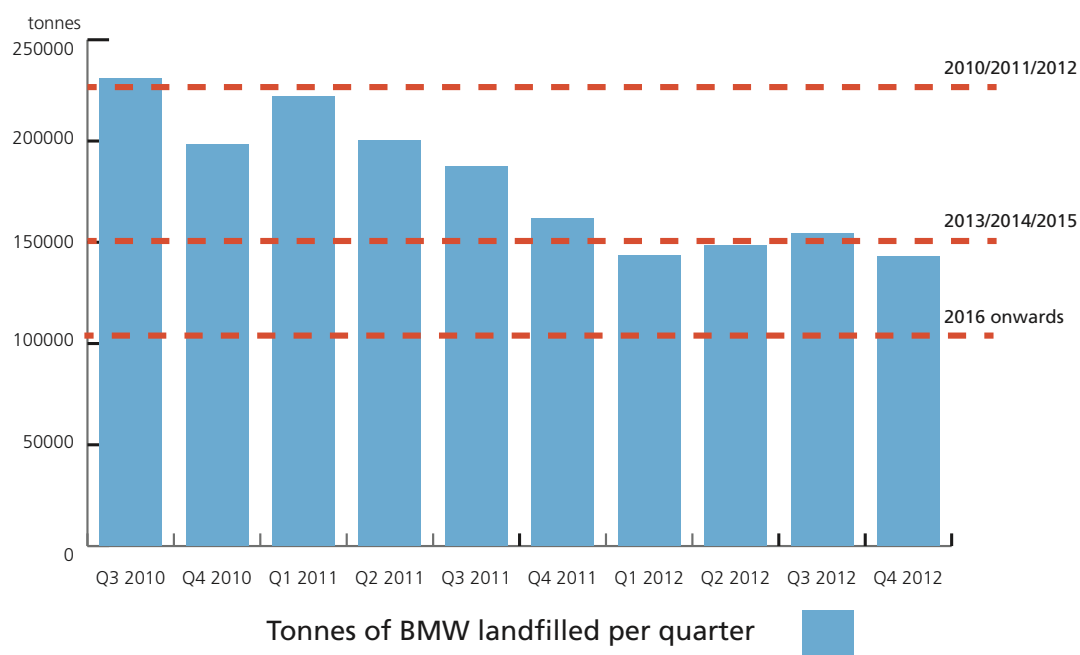


Figure 11 BMW tonnage landfilled per quarter versus Landfill Directive Targets (pro-rata)

4.3.2 Enforcement by the EPA

The BMW limits in the landfill licences are annual limits and apply to the total quantity of municipal wastes accepted in a calendar year. The quarterly BMW reports required of landfill operators give an indication of how much BMW the landfill has accepted as the year progresses which facilitates corrective actions being taken if required.

In the Technical Guidance Document *“Municipal Solid Waste – Pre-Treatment and Residuals Management”* (EPA, 2009)³⁸, the EPA undertook to keep the BMW limits under periodic review as informed by annual waste statistics. In line with this guidance and given Ireland’s compliance with the Landfill Directive BMW targets for 2010 and 2011, the EPA amended the BMW limits in the licences. These amendments were notified to landfill operators in 2012 and are shown in Table 10.

Table 10 BMW limits in landfill licences

Time period	Previous % BMW limit	Current % BMW limit as specified in 2012
To 30 June 2013	47%	55%
1 July 2013 – 30 June 2016	30%	40%
From 1 July 2016	15%	15%

In addition the licences state that all waste must receive appropriate treatment prior to disposal at landfill.

4.4 Targets and distance to targets

Table 11 below sets out the targets for Ireland under the Landfill Directive, progress with targets to date and distance to future targets.

38 <http://www.epa.ie/pubs/advice/waste/municipalwaste/finalguidancedocument.html>

Table 11: Targets and distance to targets for BMW diversion from landfill disposal³⁹

Baseline year 1995		Quantity BMW generated: 1,220,840 tonnes	
Year ⁴⁰	Landfill Directive target	Maximum quantity BMW allowed to be landfilled (t, rounded)	Quantity BMW landfilled (t, rounded)
2010 (target year)	75% of quantity BMW generated in 1995	916,000	860,000
2011			771,550
2012			589,000
2013 (target year)	50% of quantity BMW generated in 1995	610,000	380,810 ⁴¹
2016 (target year)	35% of quantity BMW generated in 1995	427,000	<i>Distance to 2016 target based on 2013 BMW disposed (preliminary data) = 46,190 tonnes below target</i>

4.5 Future actions for BMW

The separate kerbside collection of household food and garden waste (in a 3-bin system) has increased in recent years, and 80,046 tonnes was collected at household kerbside in 2012 compared with 77,494 tonnes in 2011.

The EU (Household Food Waste and Bio-Waste) Regulations, published in March 2013, place obligations on householders that produce food waste to segregate it and present it for collection. The Regulations also place obligations on waste collectors to provide a food waste collection service for householders, on a phased basis (based on population agglomerations) from July 2013 to July 2016. It is anticipated that following implementation and enforcement of these Regulations that more household food waste will be diverted from landfill.

The separate collection of non-household municipal food waste (EWC 20 01 08) was reported as 46,775 tonnes in 2012 (compared with 53,292 tonnes in 2011), 25,343 tonnes of edible oils and fats (EWC 20 01 25) were collected in 2012 (compared to 21,689 tonnes in 2011) and 16,140 tonnes of biodegradable garden and park wastes (EWC 20 02 01) was collected in 2012 (compared to 18,948 tonnes in 2011).⁴² The segregation of food waste by major generators within the commercial sector has been a requirement since the obligations of the Waste Management (Food Waste) Regulations 2009 came into effect on 1 July 2010. It would therefore be expected that the collection of non-household food waste would be increasing, rather than decreasing, as was the trend between 2011 and 2012.

The Government increased the landfill levy from €50 per tonne in 2011, to €65 per tonne in 2012 and it rose again in 2013 to €75 per tonne. This levy will make pre-treatment more cost effective - particularly in respect of BMW - thereby reducing the quantities and costs of residual disposal to landfill.

³⁹ Revised in the National Waste Report 2008.

⁴⁰ The Landfill Directive allowed Ireland to avail of a derogation under Article 5 which postponed the 2006 and 2009 targets for four years

⁴¹ 2013 BMW tonnage landfilled is a preliminary figure and is liable to change

⁴² Data source NWCPD annual return dataset. Data not validated by EPA.

The increasing landfill levy and the economic down-turn contributed in significant ways to Ireland's achievement of the first EU Landfill Directive diversion target (July 2010) for biodegradable waste. Preliminary data indicate that Ireland is on track to meet the 2013 target but in order to ensure compliance with future EU targets (particularly as the economy recovers), efforts in waste prevention, diversion to recovery and the development of necessary supporting infrastructure must continue.

Source separated collections of biodegradable waste in themselves will not ensure that Ireland meets the diversion targets set out in the EU Landfill Directive. For example, the residual bin from a 3-bin household collection service can contain up to 47% biodegradables (by weight) according to 2008 municipal waste characterisation studies (see Table H-1 of Appendix H). Treatment of this biodegradable component of the residual waste is therefore essential.

5. Waste infrastructure

- A live, national register of waste authorised facilities and treatment capacity is urgently needed, to provide data required under various European Commission legislative reporting obligations, as well as for regional waste management planning needs.
- The number of landfills accepting municipal waste for disposal continues to decline with thirteen active at the end of 2012.
- Use of waste as a fuel is taking on an increasingly significant role. Consented waste to energy capacity in Ireland (municipal waste incineration and co-incineration of wastes at cement kilns) currently stands at 542,875 tpa.
- Household waste brought to bring banks and civic amenity sites accounted for 15% of managed household waste, which emphasises the importance of this infrastructure and the need to support it.

5.1 Introduction

A live, national register of waste authorised facilities and associated treatment capacity is urgently needed, to provide data required under various European Commission legislative reporting obligations (such as the Waste Statistics Regulation) as well as for regional data reporting needs (see also Section 1.2, chapter 1). As there is no central repository of information on waste infrastructure in the State, this chapter presents information on waste infrastructure gathered during production of this National Waste Report - landfills accepting municipal waste, hazardous waste treatment facilities etc.

5.2 Landfills accepting municipal waste

Eighteen landfills accepted 1,027,577 tonnes of municipal waste for disposal in 2012. Four were private sector and fourteen were local authority managed. The four private sector landfills accepted 59% of the municipal waste disposed in 2012.

These landfills also accepted wastes other than municipal wastes for disposal and recovery (e.g. construction & demolition waste, industrial process waste). See Appendix E for detailed information on wastes accepted for disposal and recovery at the landfills surveyed for National Waste Report.

5.3 Disposal capacity at landfills accepting municipal waste

There have been a number of changes in the national waste infrastructure in recent years. In 2012, Ireland's first merchant municipal waste incinerator had its first full year of operation, a number of cement kilns were accepting waste for use as a fuel and the export of refuse derived fuel also increased. These factors combined with increases in the landfill levy and reduced municipal waste generation have led to significant changes and in some cases uncertainty as to the economic viability of landfills.

As a result of these changes and in line with government policy '*A Resource Opportunity*' - which envisages working to "eliminate our use of landfill for this purpose [disposal] within the next decade" the number of operational landfills continues to decline, from over 200 in the mid 1980's to 13⁴³ at the end of 2012.

At the end of 2012, the remaining consented landfill capacity (i.e. with waste licence in place) was approximately 17.3 Mt nationally (Table 12).⁴⁴ Of this consented capacity approximately 1.6 Mt was operational⁴⁵ at the end of 2012. This equates to just under two years capacity based on the fill rate in 2012. Whilst highly dependent on market conditions, it is expected that many of the operational landfills will continue to construct additional cells and fill to their consented capacity. Over 70% of the remaining operational capacity is under the ownership of two private operators.

43 Thirteen landfills were accepting municipal waste for disposal in the last quarter of 2012.

44 This figure includes consented capacity at some recently closed and non-operational landfills.

45 Operational in that they were accepting municipal waste for disposal.

It should be noted that the remaining capacity estimates must be treated with caution as they are affected by numerous factors including the changing character of waste, higher recycling targets, pre-treatment obligations, commencement of incineration, new applications for landfill void in application process etc.

Table 12: Approximate remaining disposal capacity at landfills accepting municipal waste

Waste planning region	Licensee	Landfill	EPA licence reg. no.	Remaining consented disposal capacity (t)	Remaining constructed disposal capacity (t)	Remaining life expectancy consented (years)	Remaining life expectancy constructed and consented (years)	Operational status at end 2012
Connacht - Ulster Region	Mayo Co. Co.	Derrinmera	W0021-02	0	0	0	0	Closed
Connacht - Ulster Region	Cavan Co. Co.	Corranure	W0077-03	250,000	314,825	6	6	Closed
Connacht - Ulster Region	Mayo Co. Co.	Rathroeen	W0067-02	175,000	40,000	4	1	
Connacht - Ulster Region	Donegal Co. Co.	Ballynacarrick	W0024-04	0	0	0	0	Closed
Eastern & Midlands Region	Fingal Co. Co.	Balleally	W0009-03	0	0	0	0	Closed
Eastern & Midlands Region	Laois Co. Co.	Kyletalesha	W0026-03	171,677	0	5	0	
Eastern & Midlands Region	North Tipp Co. Co.	Ballaghveny	W0078-03	129,045	129,045	3	3	Closed
Eastern & Midlands Region	Monaghan Co. Co.	Scotch Corner	W0020-02	175,000	60,000	13	2	
Eastern & Midlands Region	Louth Co. Co.	Whiteriver	W0060-03	600,000	28,800	13	1	
Southern Region	Cork Co. Co.	Youghal	W0068-03	200	0	0	0	Closed
Southern Region	Cork Co. Co.	Bottlehill	W0161-02	5,392,000	675,000	29	4	Closed

Waste planning region	Licensee	Landfill	EPA licence reg. no.	Remaining consented disposal capacity (t)	Remaining constructed disposal capacity (t)	Remaining life expectancy consented (years)	Remaining life expectancy-constructed and consented (years)	Operational status at end 2012
Southern Region	Kerry Co Co	North Kerry	W0001-04	450,000	32,000	6	1	
Southern Region	Limerick Co. Co.	Gortadroma	W0017-04	1,140,000	140,000	9	1	
Southern Region	Carlow Co. Co.	Powerstown	W0025-03	130,000	130,000	3	4	
Southern Region	South Tipp Co. Co.	Donohill	W0074-03	30,233	28,343	3	3	
Southern Region	Wexford Co. Co.	Holmestown	W0191-02	800,000	150,000	10	2	Closed
Connacht - Ulster Region	Greenstar Holdings Ltd	East Galway	W0178-02	675,000	164,000	7	2	
Eastern & Midlands Region	Greenstar Holdings Ltd	Knockharley	W0146-02	2,076,989	265,500	24	3	
Eastern & Midlands Region	Greenstar Holdings Ltd	Ballynagran	W0165-02	1,678,180	500,000	12	4	
Eastern & Midlands Region	Bord na Móna plc	Drehid	W0201-03	3,469,435	250,000	12	1	
				17,342,759⁴⁶	2,907,513⁴⁷	17⁴⁸	3⁴⁹	

⁴⁶ The total consented capacity is a higher figure than in 2011 as in previous year some landfills were only reporting built capacity.

⁴⁷ For 2012 all landfills surveyed were asked to provide the built capacity remaining.

⁴⁸ Based on the total consented capacity divided by the total municipal waste disposed in 2012.

⁴⁹ Based on the total built capacity divided by the total municipal waste disposed in 2012.

Figures 12 and 13 below give an overview of the remaining built and consented capacity at operational and non-operational⁵⁰ landfills. In infrastructure delivery terms, it can take eight years or more for a new landfill proposal for a greenfield site to progress from site selection stage to opening for business (assuming success at planning and licensing stages). Shorter provision periods can be expected for major extensions of existing licensed facilities. There is a significant amount of potential capacity available at non-operational landfills, in particular Bottlehill in Cork and Holmestown in Wexford (both in the Southern Region). It is expected that, should market conditions change, these landfills will open/re-open.

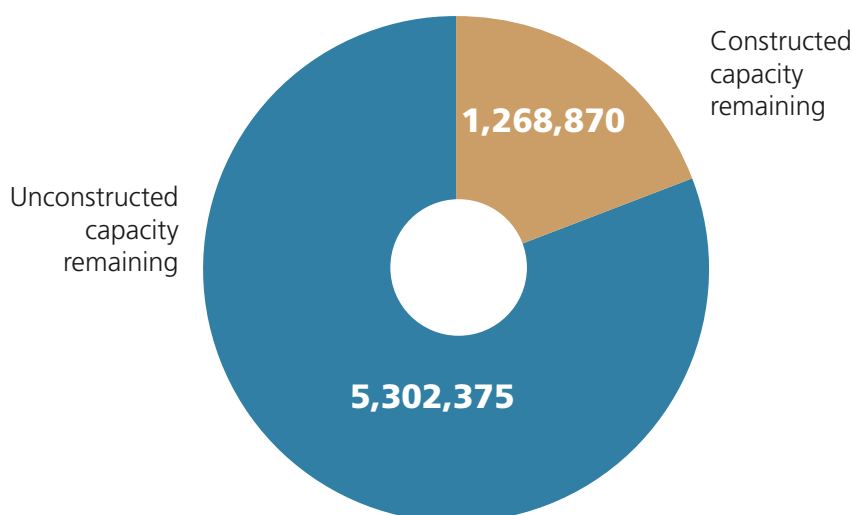


Figure 12: Consented capacity remaining at non-operational landfills (tonnes) at the end of 2012

| 41

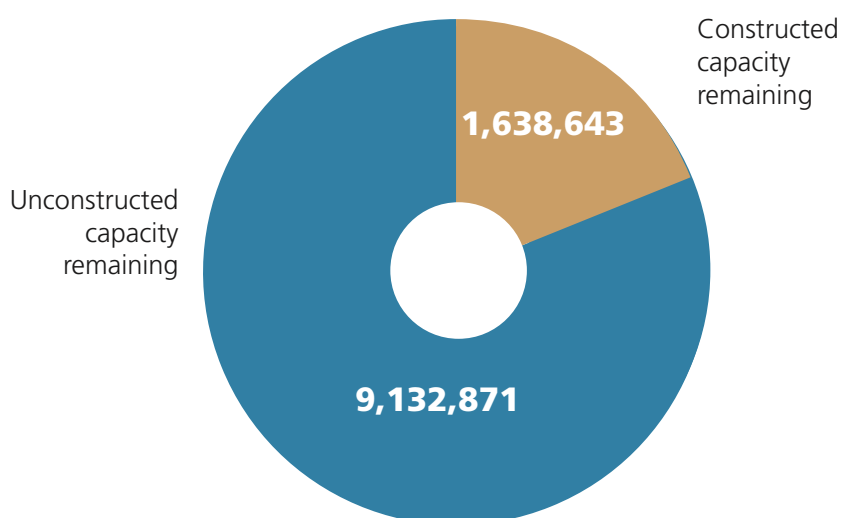


Figure 13: Consented capacity remaining at operational landfills (tonnes) at the end of 2012

The number of operational landfills is expected to continue to decline, with seven of the currently thirteen⁵¹ active landfills accepting municipal waste expected to close in the next three years (unless extensions are applied for and then granted). It is likely that this contraction will lead to significant inter-regional movement of waste as the remaining capacity is not distributed evenly across the State.

⁵⁰ Non-operational landfills are those that were not accepting municipal waste for disposal at the end of 2012

⁵¹ As of December 2012

See Figure 14 below which represents the remaining built capacity across the three waste management regions. The East Galway landfill (W0178-02) closed in January 2013 which leaves the Connacht–Ulster region with very limited capacity.

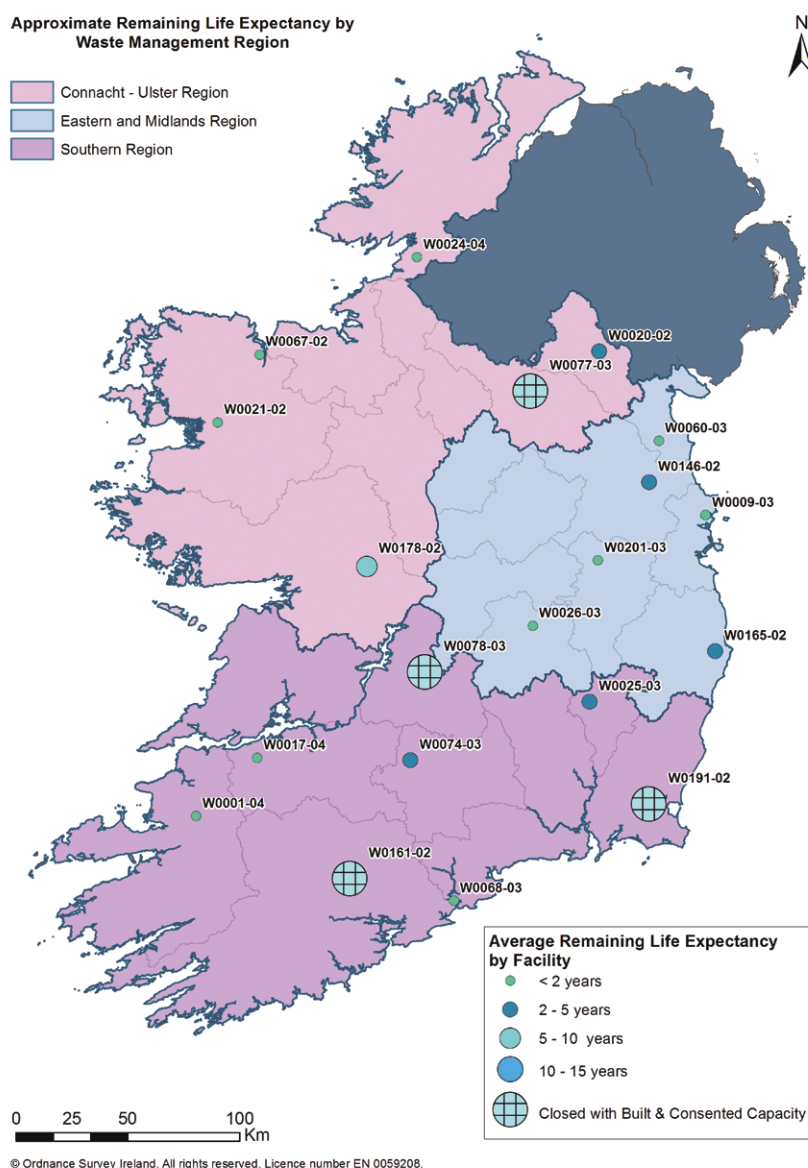


Figure 14: Remaining constructed capacity and location of landfills by Waste Management Planning Region.

5.4 Integrated landfill facilities

Of the landfills surveyed for the National Waste Report, thirty have non-landfill associated waste infrastructure: None of the private sector landfills reported having civic amenity or waste transfer facilities in 2012 although one of them does now have an on-site composting facility (see Appendix F).

5.5 Hazardous waste treatment in Ireland

Ireland has a number of licensed and permitted facilities authorised to treat hazardous waste, but currently has no dedicated hazardous waste landfill disposal facility. Authorised hazardous waste treatment in Ireland therefore either happens on-site at the industrial facility where the waste was generated (under conditions of EPA licence), or off-site at commercial hazardous waste treatment facilities. See Chapter 10 for more information on hazardous waste treatment in Ireland in 2012.

5.6 Incineration / energy recovery

Indaver Ireland Limited's site (W0167-02), was the only commercial incinerator of municipal waste in operation in 2012. This facility is currently consented to treat up to 0.2 Mt per year⁵² and has R1 energy efficiency status.

The EPA has also granted waste licences⁵³ for commercial incinerators to Indaver Ireland (Ringaskiddy, Co. Cork (W0186-01)) and Dublin City Council (Poolbeg (W0232-01)).

Consented waste to energy recovery capacity in Ireland (incineration of municipal waste and co-incineration of wastes in cement kilns) currently stands at 542,875 tpa, although 127,875 tonnes of that capacity were not utilised in 2012 as Quinn Cement Limited had not commenced acceptance of wastes to use as a fuel⁵⁴.

Recovery operators reported 525,421 tonnes of waste sent for energy recovery in Ireland and abroad in 2012, a 103% increase compared to 2011 (Table 13 below). This is mainly due to the first full year of municipal waste incineration in the State (capacity 0.2 Mt per year) and an increase in the export of refuse derived fuel and baled municipal waste for use as a fuel. Within the State, Lagan Cement Limited (P0487-05), Irish Cement Limited (Platin works, Drogheda, P0030-04) and Indaver Ireland Limited (W0167-02) all reported waste to energy recovery in 2012. There were also some waste authorised facilities that reported energy recovery of wood waste (use as a fuel in boilers).

Table 13: Energy recovery of waste, 2010 to 2012

Material Type	Total (t) 2010	Total (t) 2011 ⁵⁵	Total (t) 2012
Wood	69,310	43,711	50,688
Refuse derived fuel/Solid recovered fuel	94,174	158,297	230,399
Other non-hazardous wastes, including residual municipal waste	19,293	57,420	244,334
Total	182,777	259,429	525,421

(Source: Recovery organisations survey)

52 A waste licence review for this facility is with the EPA for consideration, to increase the capacity to 220,000 tpa.

53 Further licence details at <http://www.epa.ie/terminalfour/waste/index.jsp#.U9doUuMjKQQ>.

54 Quinn Cement Limited's licence (IPPC Reg. No. 378-02), granted in July 2012, includes authorisation for combustion of solid recovered fuel.

55 Includes tonnage of wood and RDF/SRF imported for use as a fuel

5.7 Composting/digestion facilities

The Market Report on Irish Compost Production and use (rx3, 2012) suggested a national consented capacity for biological treatment of 412,700 tpa, and that there were 45 composting facilities active in 2012, and five anaerobic digestion facilities.

5.8 Civic amenity site and bring bank infrastructure

Household waste brought to bring banks and civic amenity sites accounted for 15% of managed household waste, which emphasises the importance of this infrastructure and the need to support it.

Bring banks are unmanned, fixed receptacles for the deposit of non-hazardous, dry recyclables such as glass and beverage cans. Civic amenity sites are manned, permanent facilities for the reception of municipal (mainly household) residual and recyclable waste, and in some cases hazardous waste.

The number of bring banks decreased from 1,891 in 2011 to 1,826 in 2012. This reflects a decreasing trend since 2009. The number of bring banks can fluctuate from year to year, through consolidation of sites, availability of alternative outlets, or removal of bring banks due to illegal dumping, public complaints or antisocial behaviour. The number of civic amenity sites increased from 113 to 118 between 2011 and 2012; with 96 civic amenity sites run by local authorities (or managed on their behalf) and 22 identified by local authorities as offered by private sector operators in their functional areas⁵⁶.

Table 14: Number and tonnages collected at bring banks and civic amenity sites, 2009 to 2012

	2009	2010	2011	2012
Number of bring banks	1,962	1,922	1,891	1,826
Tonnage collected at bring banks (t)	91,800	82,908	82,149	77,041
Number of civic amenity sites	107	107	113	118
Tonnage collected at civic amenity sites (t)	177,158	158,303	141,235	129,897

(Source: Local authority survey, WEEE and battery compliance schemes)

The number of bring banks and civic amenity sites in operation in 2012 in each local authority area is illustrated in Figure 15 below. For detail on the types and tonnages of waste accepted at bring banks and civic amenity sites, refer to Appendices C and D.

⁵⁶ EPA estimates approximately 30 private sector operators provided a household bring centre service at their facilities in 2012, so not all private sector operators operating such a service were identified by local authorities.

Bring Banks = BB
Civic Amenity Sites = CAS

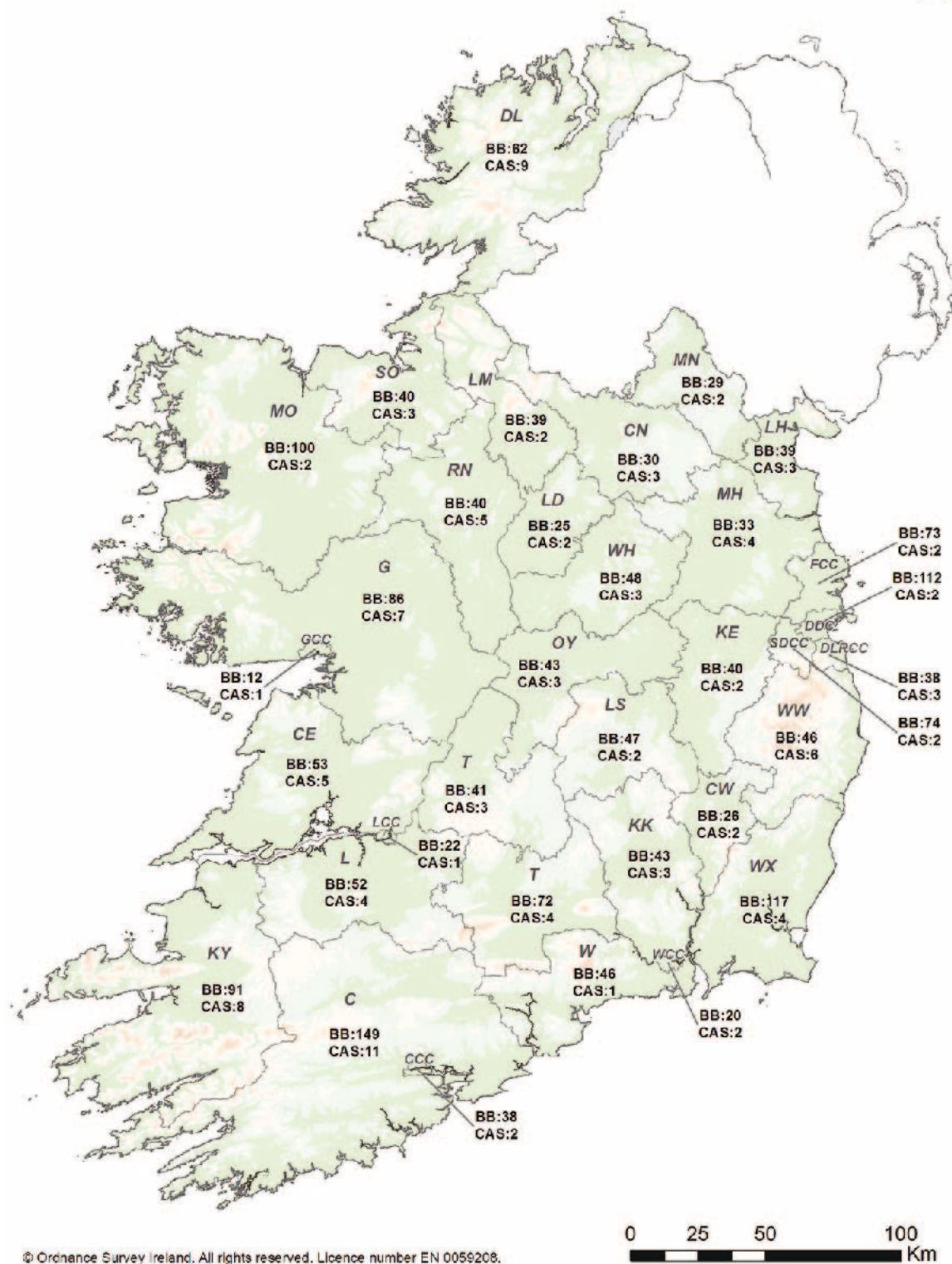


Figure 15⁵⁷: Bring banks and civic amenity sites by local authority functional area

⁵⁷ Includes both private sector and local authority civic amenity sites reported by local authorities.

5.9 Summary of waste authorisations and key infrastructure in 2012

Table 15: Summary of waste authorisations and key infrastructure in 2012

Waste authorisations and key infrastructure in 2012	Number	Source
Waste collection permits	3,578 ⁵⁸	NWCPO
Waste licences	185	EPA
Waste facility permits	623	Local authority RMCEI plans
Local authority-authorised certificate of registration facilities	282	Local authority RMCEI plans
EPA-authorised certificate of registration facilities	2,331	EPA
IPPC facilities accepting municipal waste	7	EPA
Organic waste treatment facilities	50 ⁵⁹	"Market Report on Irish Compost Production and Use" (rx3, November 2012).
Number of landfills accepting municipal waste for disposal	18	EPA
Organic waste treatment capacity	337,000 tpa	"Market Report on Irish Compost Production and Use" (rx3, November 2012).
Municipal waste incineration capacity (R1)	200,000 tpa	EPA
Waste to energy recovery capacity (R1) at cement plants	342,875 tpa	EPA
Remaining capacity of consented municipal waste landfill capacity (i.e. with waste licence and planning permission in place)	17.3 Mt	EPA
Constructed consented capacity at landfills that were operational at the end of 2012	2.1 Mt	EPA

⁵⁸ Number of waste collection permits in February 2012 when NWCPO at Offaly Co Co took responsibility for permitting.

⁵⁹ Forty-five composting facilities active in 2012, plus five anaerobic digestion facilities (not including anaerobic digestion facilities that only process waste generated onsite or exclusively process sewage sludge)

6. Packaging waste

- EU targets for recovery and recycling of packaging waste were achieved in 2012.

6.1 Introduction

The EU Packaging Directive (94/62/EC as amended) seeks to promote the recovery and recycling of packaging waste. The Directive set recovery and recycling targets for Member States to be achieved by 2011 (both overall and material specific). The European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014) give effect to the EU Directive. The Regulations oblige packaging producers⁶⁰ to segregate their packaging and ensure that it is appropriately managed by an authorised recovery operator. Major producers⁶¹ under the Regulations have additional responsibilities with regard to the recovery of packaging waste from their customers. These obligations can be met either through self-compliance or membership of a compliance scheme. Repak is the only packaging compliance scheme in the State.

6.2 Packaging waste targets

The Packaging Directive set a target of a minimum of 60% packaging waste recovery to be achieved by December 2011. Figure 16 below shows the progress towards meeting and indeed exceeding this target since 2006. The recovery in 2012 was 87%.



Figure 16: Recovery of packaging waste, 2006 - 2012, and progress towards targets

The Directive also sets recycling targets, both overall and material specific, to be achieved by the end of 2011. Details of these targets and the successful achievement of same in 2012 are given in Table 16 below.

The data in Table 16 are gathered from a number of sources; data provided by recovery operators and landfills through EPA surveys, data from self-compliers and data from Repak.

⁶⁰ Producer is defined under the Regulations as a person who, for the purposes of trade or otherwise in the course of business, sells or otherwise supplies to other persons packaging material, packaging or packaging products

⁶¹ Those who have an annual turnover in excess of €1 million and who place more than 10 tonnes of packaging on the Irish market.

The quantity of packaging waste landfilled is estimated using waste composition factors⁶² but as treatment of residual waste has changed substantially since the waste characterisation was carried out in 2008, the element of packaging in residual waste sent for energy recovery is also factored in.

The total amount of packaging waste generated (809,500 tonnes in 2012) has not changed significantly since 2011 (863,597 tonnes) but there was a decrease in the quantity landfilled: from 181,317 tonnes in 2011 to 108,764 tonnes in 2012. This decrease is a direct consequence of the diversion of residual waste from landfill to energy recovery.

62 www.epa.ie/pubs/reports/waste/wastecharacterisation/

Table 16 Quantities of packaging waste generated in Ireland, and recycled and energy recovered in Ireland and abroad in 2012

Material Type	Packaging waste generated (t)	Packaging waste landfilled (estimate) ⁶³ (t)	Material recycling and other recycling (t)	Energy recovery(t)	Total recovery (t)	Packaging Directive target for recycling %	Material recycling and other recycling rate %	Packaging Directive target for total recovery %	Total recovery rate %
Glass	147,865	21,483	126,382		126,382	60	86	60	86
Plastic	168,582	43,278	68,147	57,156	125,303	23	40		74
Paper and board ⁶⁴	358,923	30,726	298,039	30,158	328,197	60	83		91
Metals ⁶⁵	Aluminium	4,899	4,761	0	4,761	50			
	Steel	38,739	31,906	0	31,906				
	Total	48,399	36,667	0	36,667		76		76
Wood	84,778	590	69,780	14,408	84,188	15	82		99
Other ⁶⁷	955	955		0	0		0		0
Total	809,501	108,764	599,015	101,722	700,737	55	74		87

⁶³ Estimated using waste characterisations study factors and deducting for packaging in residual waste which is sent for energy recovery.

⁶⁴ Includes composites (beverage cartons).

⁶⁵ This figure contains some incidental packaging contained in the general ferrous metal stream.

⁶⁶ Metals total includes 428 tonnes of other metals.

⁶⁷ Mainly textiles.

6.3 Packaging waste exported for recovery

Although there has been a significant increase in the quantity of packaging waste recovered in Ireland (see Section 6.1), the majority of packaging waste generated in Ireland is recovered abroad. There is no glass manufacturing facility, metal smelter or paper mill in the State, therefore these waste streams are exported for recovery. Table 17 below details the quantities of packaging waste exported for recovery.

Table 17: Packaging waste exported for recovery, 2012

Material		Material recycling (t)	Energy recovery (t)
Glass		115,685	0
Plastic		48,810	13,034
Paper & board		249,544	6,134
Metals	Aluminium	4,761	0
	Steel	31,736	0
	Total	36,497	0
Wood		773	0
Other			168
TOTAL		451,309	19,336

6.4 Packaging waste imported for recovery

A relatively small amount of packing waste is imported into Ireland for recovery. In 2012 recovery operators reported treating 71,835 tonnes of packaging waste generated abroad. See Table 18 below.

Table 18: Packaging waste generated abroad and treated in Ireland in 2012

Material	Recycling (t)	Energy recovery (t)
Glass	241	
Plastic	66,094	1,265
Paper & board	3,542	594
Wood	52	
Steel	47	
TOTAL	69,976	1,859

6.5 Packaging self-compliers

Producers of packaging waste can either join a compliance scheme or self-comply. The majority of organisations favour joining a compliance scheme. Repak recovered approximately 84% of the total packaging generated in 2012.

Local authorities are responsible for enforcement of the Packaging Regulations, including enforcing the obligations of self-complying producers. Information on packaging self-compliers was gathered from local authorities, and the data provided is outlined in Table 19. Four local authorities had no registered self-compliers in their area in 2012 (Donegal, Leitrim, Waterford County and Wexford).

All self-complying producers have a legal obligation to submit reports to the relevant local authority on packaging placed on the market and waste packaging reused, recovered and disposed. It is essential that these reports are submitted so that local authorities can determine whether self-complying producers are meeting their legal obligations with regard to recovery and recycling targets.

Table 19: Packaging self-compliers registered in local authority areas in 2012

Local authority	Number of companies	Number of premises	Local authority	Number of companies	Number of premises
Carlow	1	1	Limerick County	4	5
Cavan	4	4	Longford	3	3
Clare	2	4	Louth	5	6
Cork City	2	2	Mayo	3	3
Cork County	7	14	Meath	6	7
Donegal	0	0	Monaghan	4	4
Dublin City	17	20	North Tipperary	1	3
Dun Laoghaire-Rathdown	7	8	Offaly	1	3
Fingal	17	17	Roscommon	5	7
Galway City	3	11	Sligo	1	1
Galway County	4	15	South Dublin	24	24
Kerry	2	3	South Tipperary	2	2
Kildare	2	3	Waterford City	2	3
Kilkenny	3	3	Waterford County	0	0
Laois	1	1	Westmeath	1	4
Leitrim	0	0	Wexford	0	0
Limerick City	1	3	Wicklow	1	2
Total number of companies	136⁶⁸				
Total number of registered premises	186				

(Source: Local authority survey)

Table 20 compares packaging self-complier data for 2009 to 2012, in terms of number of companies and number of premises registered and the tonnage of packaging placed on the market. Local authorities reported that a small number self-complying producers failed to provide their full 2012 packaging recovered data in quarterly reports, therefore the packaging recovered tonnage is an incomplete dataset (Table 20).

⁶⁸ Representing 104 unique producers (some companies are registered in more than one local authority functional area).

Table 20: Packaging self-compliers, 2009 to 2012

Year	Number of registered self-complier companies	Number of premises	Packaging placed on the market (t)	Packaging recovered (t)
2009	108	205	61,475	15,576
2010	106	181	45,387	20,196
2011	139	187	57,462	20,423
2012	136	186	54,525	19,082

(Source: Local authority surveys)

7. Waste electrical and electronic equipment

- EU targets for collection, reuse, recycling and recovery of WEEE were achieved in 2012.

7.1 Introduction

The Waste Electrical and Electronic Equipment (WEEE) Directive (2002/96/EC) aims to prevent the generation of WEEE and sets targets for the collection and treatment of WEEE in an environmentally sound manner. It is one of the Producer Responsibility Initiative (PRI) Directives. The data on WEEE collection and treatment in Ireland in 2012 are based on information supplied by (i) WEEE and other waste recovery operators (ii) WEEE compliance schemes (WEEE Ireland and European Recycling Platform (ERP)) and (iii) self-complying producers of electrical and electronic equipment (EEE).

7.2 WEEE collected, treated and exported in 2012

Table 21 shows that 40,818 tonnes of WEEE were collected in Ireland in 2012, which is very similar to the 39,629⁶⁹ tonnes collected in 2011. The average amount of household WEEE collected from each person living in the Republic of Ireland amounted to 7.5 kg in 2012 and has therefore remained the same as in 2011. This is nearly double the target of 4 kg per person, which applied in 2012.

Table 21: WEEE collection, treatment, export and recovery.

Category of WEEE ⁷⁰		Total collected (t)	Total treated in IE (t)	Exported for treatment (t)	Total recovered (t)
1	Large household appliances	22,267	9,654	12,180	18,249
2	Small household appliances	2,193	1,170	1,023	1,957
3	IT and telecommunications equipment	6,621	4,233	2,331	5,790
4	Consumer equipment	7,865	6,585	1,216	7,328
5	Lighting equipment	407	407	0	367
5a	Gas discharge lamps	377	333	46	343
6	Electrical and electronic tools	495	265	230	442
7	Toys, leisure and sports equipment	37	19	18	33
8	Medical devices	70	70	1	64
9	Monitor and control instruments	41	29	12	37
10	Automatic dispensers	444	437	7	402
Total WEEE⁷¹		40,818	23,202	17,062	35,012

(Source: WEEE and other waste recovery organisation surveys carried out by EPA, WEEE producers and compliance schemes)

More than half of the WEEE collected in 2012 (57%) was treated in Ireland before being exported to other EU countries for further recovery.

⁶⁹ Please note that this number is different to the 41,092 tonnes quoted in NWR 2011 due to the fact that the methodology for calculating WEEE collected has been changed. WEEE arising from EEE placed on non-IE markets is no longer included in the figures reported by NWR.

⁷⁰ Detailed descriptions of WEEE categories are available at www.weeeregister.ie.

⁷¹ Please note that there was an overall increase of WEEE in stock at recovery operators and producers of 553 tonnes.

In 2012, the collection of pre-owned and used EEE for reuse (i.e. not waste) amounted to 360 tonnes. Most of the material for reuse consisted of information and communication technology equipment e.g. mobile phones and computers.

Figure 17 illustrates that category 1, large household appliances, which includes fridges and freezers, washing machines and cookers, provides the majority (by weight) of the WEEE collected, followed by category 4 (consumer equipment) and category 3 (IT and telecommunications equipment).

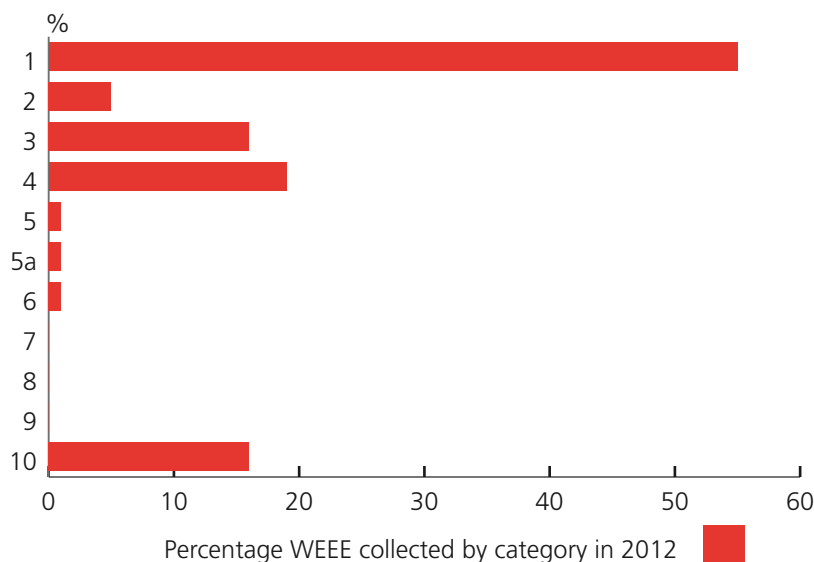


Figure 17: Percentage of WEEE collected by category in 2012.

54 |

7.3 WEEE Directive recast

The recast of the WEEE Directive (2012/19/EU) was published 4 July 2012 and transposed into Irish law by the WEEE Regulations,⁷² which came into effect in Ireland on 29 March 2014. The recast of the WEEE Directive introduces more ambitious WEEE collection and recovery targets. These targets have to be achieved by EU Member States, in a step-wise manner, between 2015 and 2019.

7.4 WEEE and the POPs Regulation

Amendments to the EU Persistent Organic Pollutants (POPs) Regulation (Regulation (EC) 850/2004), soon to be adopted, may affect recycling and recovery of WEEE. Separated plastics, resulting from the treatment of WEEE, that contain specified brominated flame retardants above a certain concentration threshold will be required to be managed as POPs waste in accordance with the EU POPs Regulation. The recycling of these plastics may then no longer be an option.

⁷² European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014).

8. End of life vehicles

- EU targets for reuse, recycling and recovery were achieved for 2012.

8.1 Introduction

The End of Life Vehicle (ELV) Directive governs the collection, storage, dismantling and treatment of ELVs⁷³ and aims to ensure that such activities are carried out in an environmentally sound manner. The Directive sets specific reuse, recycling and recovery targets and requires appropriate systems for the removal and segregation of hazardous materials (e.g. oil, antifreeze, batteries), and removal of materials which may be reused and recycled (e.g. metals, plastics, glass, tyres) from ELVs. The ELV Directive was transposed into national law in 2006.⁷⁴ The ELV Directive is a Producer Responsibility Initiative (PRI) Directive.

8.2 ELV Directive Targets

Each Member State is obliged to meet targets set out in the ELV Directive with regards to the reuse, recycling and recovery of ELVs. The targets are:

- i. By 1 January 2006 a minimum of 80% reuse and recycling and a minimum of 85% reuse and recovery; and
- ii. By 1 January 2015 a minimum 85% reuse and recycling and a minimum of 95% reuse and recovery.

The EPA carries out an annual survey of Authorised Treatment Facilities (ATFs) and ELV shredder operators throughout Ireland, and uses the information collected to calculate rates of reuse, recycling and recovery of ELVs arising in Ireland.

Local authorities reported to the EPA that 177 ATFs were authorised in 2012 (of which 166 were operational). Two local authorities (Dun Laoghaire Rathdown and Waterford City) reported no ATFs operational in their functional areas in 2012.

In 2012, 102,073 ELVs were estimated to have arisen in Ireland. The total reuse and recycling was 81.8% and total reuse and recovery 87.8%. These percentages achieve the EU targets of 80% for reuse and recycling and 85% for reuse and recovery. Note that these targets will increase to 85% for reuse and recycling and 95% for reuse and recovery on the 1 January 2015.

Figure 18 illustrates the ELV reuse, recycling and recovery achieved in Ireland from 2009 to 2012. Prior to 2010, some residue from the shredding of ELVs was used as landfill cover and counted as a recovery operation. The EPA determined that shredder residue is not a suitable landfill cover material and in 2010, most shredder residue went for disposal to landfill.

⁷³ End-of-life vehicles are defined as vehicles used for the carriage of passengers with a maximum of eight seats in addition to the driver's seat, vehicles with a mass no greater than 3.5 tonnes and used for the carriage of goods and three wheel motor vehicles as defined in Directive 92/61/EEC, but excluding motor tricycles.

⁷⁴ European Union (End-of-Life Vehicles) Regulations 2014 (S.I. No. 281 of 2014).

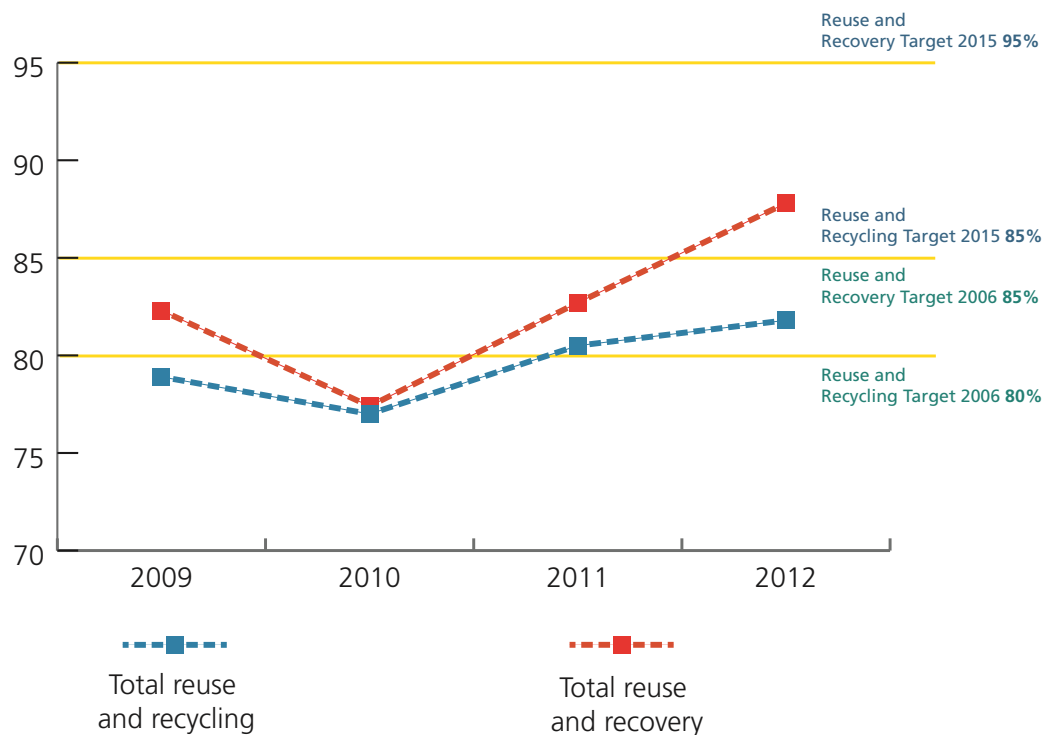


Figure 18: ELV reuse, recovery and recycling percentage from 2009 – 2012 compared to ELV Directive targets.

56 |

The Landfill Levy Amendment Regulations⁷⁵ removed the exemption from the levy for non-metallic residues arising from the shredding of end-of-life vehicles, white goods and other metal waste.⁷⁶ The landfill levy has been increasing in recent years (from 1 July 2013, the landfill levy increased to €75 per tonne for each tonne of waste disposed of at authorised and unauthorised landfill facilities).⁷⁷ These changes are likely to have encouraged the recovery of shredder residue, and therefore increased Ireland's ELV recovery rates over time. To achieve the higher targets set for 2015, a combination of actions will be required. These may include increased dismantling of non-metallic ELV components prior to shredding, the application of post-shredder technologies to extract recyclable materials (such as metals, plastics) from the shredder residue, and energy recovery of shredder residue, combined with metal recovery from combustion residues.

8.3 ELVs and the POPs Regulation

Amendments to the EU Persistent Organic Pollutants (POPs) Regulation (Regulation (EC) 850/2004), soon to be adopted, will require materials from ELVs (e.g. foams and plastics) that contain certain brominated flame retardants to be managed as POPs waste if above a certain concentration threshold. In accordance with the EU POPs Regulation, POPs waste shall be disposed of or recovered, in such a way as to ensure that the POP content is destroyed or irreversibly transformed. Thus the recycling of these materials may no longer be an option.

⁷⁵ Waste Management (Landfill Levy) (Amendment) Regulations 2012 (S.I. No 221 of 2012)

⁷⁶ www.environ.ie/en/Environment/Waste/LandfillLevy/

⁷⁷ Waste Management (Landfill Levy) (Amendment) Regulations 2013 (S.I. No 194 of 2013)

9. Waste tyres

- Approximately 24,165 tonnes of waste tyres were managed in Ireland during 2012.

9.1 Introduction

The Waste Management (Tyres and Waste Tyres) Regulations 2007 (S.I. No. 664 of 2007) came into force on 1 January 2008. Prior to the introduction of the regulations, information on the generation and management of waste tyres within the State was scarce. One of the aims of the regulations was to put in place a system to track waste tyre flows and improve the quality of the data captured, to provide a greatly improved understanding of waste tyre flows within the State.

Appropriate management of waste tyres is necessary if pollution and health and safety risks are to be avoided. Illegal dumping of waste tyres can cause significant environmental pollution. Stockpiles of tyres can cause environmental pollution due to the potential for uncontrolled fires to occur.



| 57

The Waste Management (Tyres and Waste Tyres) Regulations 2007 require that operators in the tyre industry, who are engaged in the recovery or collection of waste tyres for the purposes of recovery and reuse, submit information regarding the waste tyres they handle in a calendar year to either their local authority or a compliance scheme. In 2012 there were two waste tyre compliance schemes in Ireland, the Tyre Recovery Activity Compliance Scheme Ltd (TRACS, www.tracsireland.ie/) and the Tyre Waste Management Scheme (TWM, www.twm.ie/). Membership of waste tyre compliance schemes enables tyre industry operators to fulfil their reporting obligations and it facilitates the monitoring of waste tyre flows within the industry. The information required includes:

- location(s) of premises involved in the handling of waste tyres;
- quantities of weight and units of waste tyres accepted and sent offsite during the calendar year;
- activities carried out on waste tyres accepted onsite;
- off-site transfer and treatment of the waste tyres (export, chipping, ballast, baled, re-treaded).

9.2 Waste tyre management in 2012

Information on waste tyre management in the Republic of Ireland during 2012 was compiled using data contained in National Waste Report survey returns as well as additional information provided by organisations involved in the handling of waste tyres.

Approximately 24,164 tonnes of waste tyres were reported to have been managed in the State during 2012. Figure 19 illustrates waste tyre flows in 2012, and shows that waste tyres can go through more than one 'treatment' activity within the State. For the majority of waste tyres arising, the main treatment activity in the State in 2012 was to crumb for recycling (41%). Twenty percent of tyres were baled for use in engineering, as ballast or for export, and 11% were shredded for recycling or export. The remaining waste tyres managed were directly exported (19%), used for engineering purposes or ballast (4%), prepared for reuse (2%) or used as a fuel (2%).⁷⁸ Total combined exports of waste tyres amounted to 9,757 tonnes (40% of total managed in 2012), with the majority used as fuel (33%) and the remainder recycled (7%) or sent for reuse (0.2%).⁷⁹

⁷⁸ Deviation from 100% is due to movement of waste tyres into storage by waste handlers during 2012.

⁷⁹ Figures provided are percentages of total waste tyres managed.

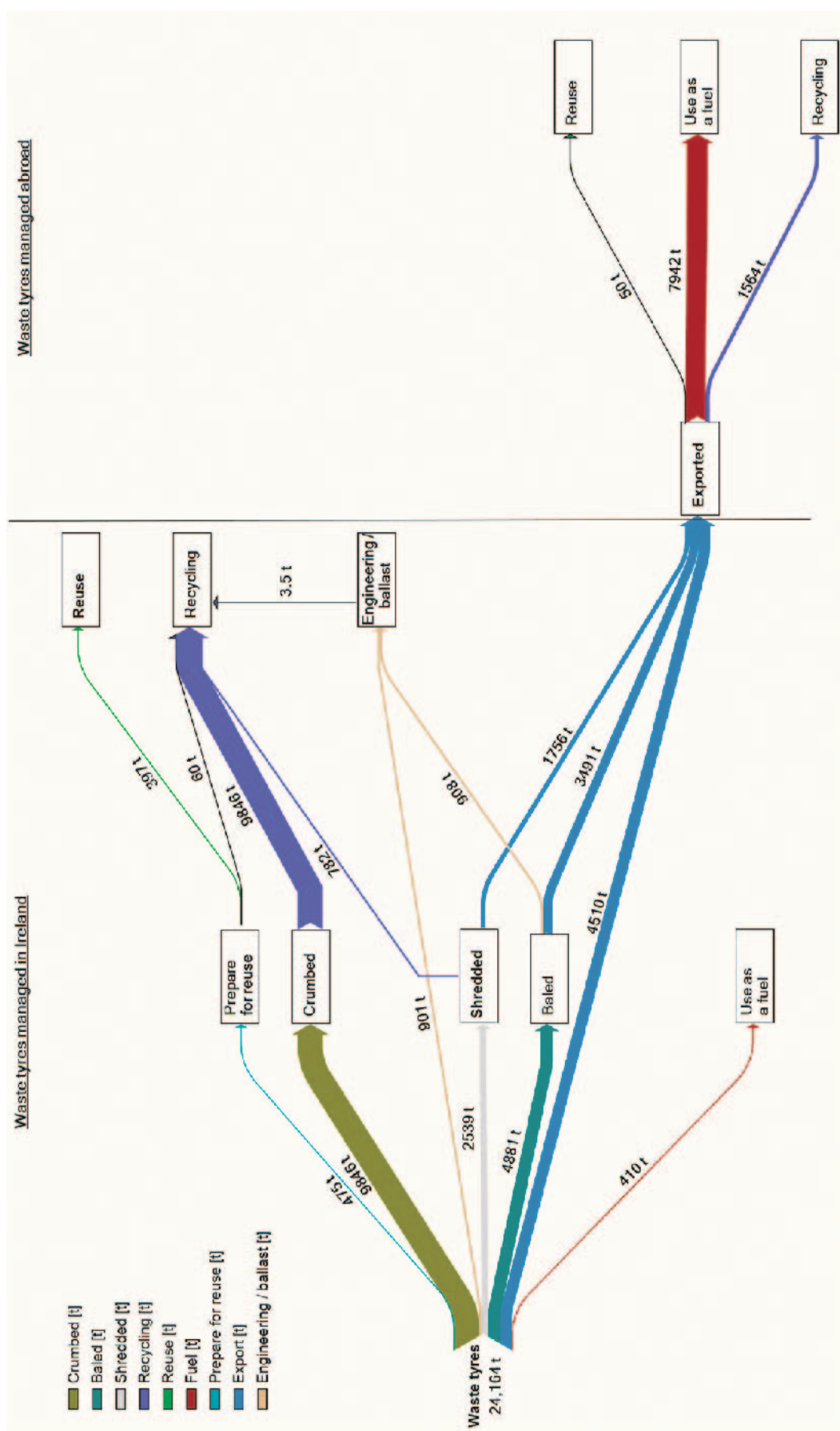


Figure 19: Waste tyre flows for 2012⁸⁰

80 Figure 19 does not account for movement of waste tyres into and out of storage by waste handlers during 2012.

10. Hazardous waste

- Of hazardous waste managed, 48% is exported for treatment, 22% is treated at the site of generation (IPPC licensed facilities) and 30% is sent to commercial hazardous waste treatment facilities within the State.

10.1 Introduction

Waste is classified as being hazardous when it displays properties (i.e. oxidising, explosive, flammable, irritant, toxic etc.) that make it dangerous or potentially harmful to human health or the environment. A full list of these properties is listed in Annex III of the Waste Directive 2008/98/EC, as transposed into national legislation by the European Communities (Waste Directive) Regulation, 2011 (S.I. No. 126 of 2011).

Industry is the largest generator of hazardous waste in Ireland, giving rise to industrial solvents, sludges, oils and chemicals. Households, small businesses, farms, the healthcare and construction sectors also generate substantial quantities of hazardous waste such as lead-acid batteries, certain waste electrical and electronic equipment, healthcare risk waste, solvent-based paints and varnishes, and waste oils.

Information on the management of hazardous waste in 2012 was compiled from three sources, based on the location of treatment:

- Data on hazardous waste treatment on-site at the industry where it was generated (which occurs under EPA licence at companies mainly in the pharmachem sector) were obtained from licensee's Pollutant Release and Transfer Returns (PRTR) and Annual Environmental Reports (AER).
- Data on hazardous waste treatment at commercial facilities in Ireland were obtained by way of a survey, which was sent to facilities that are licensed by the EPA or permitted by the local authority to treat hazardous wastes.
- Data on the import and export of notifiable waste⁸¹ were provided by the National Transfrontier Shipment Office (NTFSO) at Dublin City Council. Not all notifiable wastes are purely hazardous EWC codes. The EPA excluded exclusively non-hazardous notifiable wastes from the calculations in this chapter, but as many shipments are a mix of hazardous and non-hazardous wastes there may be some non-hazardous wastes reported within the notifiable exports tonnage.
- The amounts of hazardous waste managed in 2012, as compiled from the information sources described above, are presented in Table 22. Of the three categories, 22% was treated on-site at industry where it was generated, 30% was sent off-site to a commercial hazardous waste facility for treatment and 48% was exported for treatment. Export is therefore an important route for treatment of hazardous waste generated in the State.

Table 22: Summary of hazardous waste management, 2009-2012 (excluding contaminated soil)

Category	2009	2010	2011	2012
Hazardous waste exported (t)	150,395	143,180	149,037	139,872
On-site at industry (t)	74,668	76,655	67,785	68,100
Off-site in Ireland (t)	89,992	93,048	98,844	88,866 ⁸²

(Source: PRTR and AER returns; hazardous waste treatment survey; NTFSO, recovery organisations survey for WEEE)

⁸¹ Notifiable wastes are listed in annexes to the Shipment of Waste Regulation.

⁸² Note that some hazardous waste treated in the State is exported for further treatment.

10.2 Hazardous waste treatment in Ireland

Ireland has a number of licensed and permitted facilities authorised to treat hazardous waste, but currently has no dedicated hazardous waste landfill disposal facility. East Galway Residual Landfill (W0178-02) is licensed to accept certain types of asbestos waste for disposal but has not accepted any such waste to date and the facility is currently closed. Authorised hazardous waste treatment in Ireland either happens on-site at the industrial facility where the waste was generated (under conditions of EPA licence), or off-site at commercial hazardous waste treatment facilities. The sections below describe these in more detail.

10.2.1 On-site at industry:

'On-site at industry' refers to hazardous waste treated on-site at the IPPC licensed facility where it was generated. Of the tonnage of hazardous waste treated at IPPC licensed facilities in 2012, 48% underwent a disposal operation and 52% a recovery operation.

Hazardous waste treatment at the site of generation occurred mainly within the chemicals sector, but also in the minerals, fossil fuels and surface coatings sectors. Twenty IPPC licensees reported treating hazardous waste on-site in 2012. The main activities in relation to quantity treated in 2012 were solvent recovery (R2), landfill (D1), incineration without energy recovery (D10), and use of solvents or other waste as a fuel (R1). See Table 23 and Appendix N for more information.

Table 23: Methods of treatment of hazardous waste on-site at IPPC licensed facilities in 2012

Treatment code	Treatment activity description	Tonnage	Details ⁸³
R1	Use as a fuel or other means to generate energy	13,111	Mainly solvents and some other industrial hazardous waste recovered at various chemical industries
R2	Solvent reclamation/regeneration	21,825	Solvents recovered at various chemical industries
R3	Recycling/reclamation of organic substances which are not used as solvents	287	Solid wastes from Manufacture, Formulation, Supply and Use (MFSU) of pharmaceuticals recovered
R9	Used oil refining or other reuses of previously used oil	180	Waste oil recovered at Phillips 66 Bantry Bay Terminal Limited
	Sub-total recovery operations	35,403	
D1	Deposit into or onto land	15,853	Disposal of salts and salt cake (Aughinish Alumina Limited) and oily sludges (Galmoy Mines Limited)
D8	Biological treatment	1,576	Disposal of solvents at various chemical industries
D9	Physico-chemical treatment	140	Disposal of solvents at chemical industry
D10	Incineration on land	15,129	Various hazardous wastes (mainly solvents, but also sludges and filter cakes, contaminated packaging) incinerated at various chemical industries
	Sub-total disposal operations	32,698	
Total hazardous waste treated on-site at IPPC licensed facilities (t)		68,100	

(Source: IPPC PRTR and AER returns)

⁸³ For more detailed information on the tonnages and waste types reported as treated at each IPPC licensed facility, please see Appendix N.

There was no significant difference between the reported total tonnage of hazardous waste treated on-site at industry between 2011 and 2012 (328 tonnes), although within some hazardous waste categories there were shifts. This includes an increase in solvents recovered on-site at IPPC facilities, rather than transferred to commercial waste treatment facilities for treatment, and a reduction in saltcake produced by Aughinish Alumina Limited primarily due to the improved quality of raw bauxite.

Table 24 below sets out the quantities of hazardous waste treated on-site at IPPC licensed facilities in 2011 and 2012 by waste category. The main categories of waste treated on-site at IPPC licensed facilities in 2012 were solvents (58%) and salts & saltcake (23%).

Table 24: Tonnage of hazardous waste treated on-site at industry in 2012 by waste category (excluding contaminated soil)

Category	Treated on-site at industry in 2011 (t)	Treated on-site at industry in 2012(t)
Solvents	34,354	39,297
Solvents (halogenated, where specified)	6,176	5,602
Oil waste (mineral oil)	180	180
Industrial hazardous waste (other)	4,722	5,107
Salts and saltcake	20,079	15,808
Oily sludges	45	45
Aqueous washing liquids and mother liquors (07 __ 01*)	1,852	1,700
Solid wastes from MFSU of pharmaceuticals (07 05 13*)	295	291
Sludges and filter cakes	0	0.2
Packaging (contaminated or containing residues)	25	26
Absorbents, wiping cloths etc. (EWC 15 02 02*)	30	31
Laboratory and general chemical waste	13	13
Totals	67,771	68,100

(Source: IPPC PRTR and AER returns)

10.2.2 Off-site in Ireland

'Off-site in Ireland' refers to waste sent to EPA licensed and local authority permitted commercial hazardous waste treatment facilities in Ireland for treatment. There was a 11% decrease in the levels of hazardous waste treated at such facilities in 2012 and this is primarily due to an increase in the recovery of aqueous washing liquids and solvents on-site at industry.

Table 25 provides information on the licensed and permitted commercial hazardous waste treatment facilities that were surveyed for 2012 data, the categories of waste treated and the treatment type.

Table 25: Hazardous waste treatment facilities surveyed for National Waste Report 2012⁸⁴

Facility Name	Licence/Permit No.	Details
Eco-Safe Systems Ltd	W0054-02	D9 – physico-chemical treatment (sterilisation of clinical/veterinary waste)
Enva t/a MacAnulty (Dublin)	W0196-01	D9 – physico-chemical treatment (various oil and aqueous hazardous waste streams)
Enva Portlaoise	W0184-01	R5 – bioremediation of wastes containing heavy metals & bioremediation and trommelling of soils & stones. R9 – used oil refining
Enva Ireland Ltd. t/a Shannon Environmental Services	W0041-01	D9 – physico-chemical treatment (neutralisation of various hazardous wastes and precipitation of reactions, which produce a non-hazardous sludge)
Indaver Dublin Port	W0036-02	R2 - Solvent reclamation/regeneration (blending)
Irish Lamp Recycling Co. Ltd	KE-08-0348-01	R3/R4/R5 – dismantling of WEEE into constituents
KMK Metals Recycling Limited	W0113-04	R4-R7,R8,R11-R13 – dismantling of WEEE into constituents
Rilta Environmental Ltd	W0192-03	D9 – physico-chemical treatment R9 – used oil refining R3/R4 - drum reconditioning
Rilta Environmental Ltd	W0185-01	R4 – treatment of transformers
Soltec (Irl) Ltd	W0115-01	R2 – solvent reclamation/regeneration (used in the production of thinners)
SRCL Sterile Technologies Ireland Ltd	W0055-02	R3 - Recycling/reclamation of organic substances which are not used as solvents (healthcare risk waste is shredded and disinfected using steam).
The Recycling Village Limited	MH-11-0005-01	R3/R4/R5 – dismantling of WEEE into constituents
Veolia Fermoy	W0050-02	R2 – Solvent reclamation/regeneration (fuel blending) R4 – treatment of contaminated metal packaging to render non-hazardous

Table 26 identifies the reported recovery and disposal classes for hazardous waste managed off-site in Ireland (69% recovery and 31% disposal operations).

⁸⁴ Enva Ireland Ltd (W0145-02) and Safety Kleen Ireland Ltd (W0099-01) were also surveyed but reported no treatment of hazardous waste on-site in 2012.

Table 26: Methods of treatment of hazardous waste off-site in Ireland in 2012 (excluding contaminated soil)

Recovery or disposal code ⁸⁵	Disposal or recovery activity	Treated off-site in Ireland (t)
D9	Physico-chemical treatment	27,952
	Sub-total disposal:	27,952
R2	Solvent recovery	16,140
R3	Organic substance recovery	8,317
R3/R4	Combination of metal recovery and inorganic substance recovery	1,713
R4	Metal recycling	1,253
R4/R5	Combination of metal recovery and inorganic substance recovery	333
R3/R4/R5	Combination of metal recovery, inorganic substance recovery and organic substance recovery	7,581
R5	Inorganic substance recovery	165
R9	Oil recovery	25,412
	Sub-total recovery:	60,914
	Total (t):	88,866

(Source: hazardous waste treatment survey, recovery organisations survey for WEEE)

The waste categories primarily treated off-site in Ireland in 2012 were oil wastes (42%), solvents (11%), healthcare risk waste (10%) and WEEE (10%).

Table 27: Tonnage of hazardous waste treated off-site in Ireland in 2012 by waste category (excluding contaminated soil)

Category	2011	2012
Oil waste (mineral oil)	38,092	37,778
Solvents	16,898	9,954
Healthcare risk waste	9,036	8,852
Equipment (electrical, electronic, mechanical)	7,404	8,834
Aqueous washing liquids and mother liquors (07 __ 01*)	11,937	5,036
Oily sludges	3,464	4,497
Industrial hazardous waste (other)	3,046	4,119
Acid and alkali waste	3,777	2,624
Packaging (contaminated or containing residues)	2,068	1,809

⁸⁵ See Appendix G for a descriptive list of recovery and disposal operations.

Category	2011	2012
Solvents (halogenated, where specified)	631	1,455
Paint, ink and varnish waste (including packaging)	1,358	1,452
Municipal hazardous waste (other)	4	710
Fluorescent lamps	260	333
Sludges and filter cakes	132	474
Laboratory and general chemical waste	59	406
Metal- and heavy metal-containing waste	8	190
Photographic chemical waste	95	145
Chemical waste (other)	120	106
Oil filters	7	78
Salts and saltcake	4	12
Absorbents, wiping cloths etc. (EWC 15 02 02*)	2	2
Thermal treatment and combustion residues	438	0
Totals	98,840	88,866

(Source: IPPC PRTR and AER returns; hazardous waste treatment survey; recovery organisations survey for WEEE)

10.2.3 Summary on hazardous waste treated in the State

The overall amount of hazardous waste treated both on-site at industry and off-site in Ireland has decreased from 166,608 tonnes in 2011 to 157,234 tonnes in 2012, a reduction of 6%. The reduction in the amount of saltcake and aqueous washing liquids and mother liquors (07 __ 01*) treated are the major contributors to this reduction. There was a 41% decrease in the amount of solvents treated at hazardous waste facilities in Ireland; an increase in treatment of solvents on-site at IPPC facilities has contributed to this reduction.

10.3 Export of notifiable waste

There was a 3% decrease in the quantity of hazardous waste exported for treatment in 2012 compared to 2011. The downward trend in the quantity of hazardous construction and demolition waste exported since 2009 is predominantly due to a reduction in the amount of railway sleepers exported (11,930 tonnes exported in 2009, 7,856 tonnes in 2010, 2,779 tonnes in 2011 and none in 2012).

While the overall quantity of hazardous waste exported for treatment in 2012 has decreased, there was an increase in the tonnage of certain hazardous waste streams exported. There was a large increase in thermal treatment and combustion residues, as a direct result of the waste generated by Ireland's first municipal waste incinerator which completed its first full year in operation in 2012. There was also a large increase in the tonnage of chemical waste exported due to an increase in hazardous liquid waste generation during the manufacture of pharmaceuticals.

Solvents account for 32% of exports, followed by chemical waste (12%), lead acid batteries (10%), WEEE (8%), thermal treatment and combustion residues (7%), other industrial hazardous waste (7%) and aqueous washing liquids and mother liquors (5%). These waste categories account for 88% of total waste exported by weight (see Table 28 for more information).

Table 28: Categories of reported exports of hazardous waste, 2009 - 2012

Category	Exported (t)	Exported (t)	Exported (t)	Exported (t)
	2009	2010	2011	2012
Solvents	52,370	48,682	52,243	46,680
Solvents (halogenated, where specified)	4,540	1,893	6,079	3,528
Oil waste (mineral oil)	2,443	2,363	633	637
Industrial hazardous waste (other)	11,927	5,124	7,027	9,393
Healthcare risk waste	734	712	692	687
Oily sludges	94	45	30	433
Lead-acid batteries	11,832	14,805	15,374	14,281
Equipment (electrical, electronic, mechanical)	8,410	11,897	17,493	15,680
Chemical waste (other)	3,701	7,780	9,305	12,141
Paint, ink and varnish waste (including packaging)	4,834	5,459	4,713	4,165
Acid and alkali waste	2,578	1,556	1,558	1,394
Asbestos waste	14,068	9,512	7,001	4,255
Aqueous washing liquids and mother liquors (07 __ 01*)	10,647	12,637	9,616	6,684
Solid wastes from MFSU of pharmaceuticals (07 05 13*)	1,956	3,982	4,881	4,469
Sludges and filter cakes	3,834	3,663	3,006	1,676
Batteries (small, non-lead acid)	223	136	46	92
Packaging (contaminated or containing residues)	664	867	777	819
Photographic chemical waste	432	221	284	181
Oil filters	741	739	654	720
Construction and demolition waste (hazardous)	12,892	9,137	3,236	252
Metal- and heavy metal-containing waste	69	181	83	237
Agricultural hazardous waste	72			0
Absorbents, wiping cloths etc. (EWC 15 02 02*)	661	596	939	1,315
Fluorescent lamps	74	58	119	20
Pesticides, herbicides	56	30	47	0
Laboratory and general chemical waste	485	548	677	527

Category	Exported (t)	Exported (t)	Exported (t)	Exported (t)
	2009	2010	2011	2012
Salts and saltcake		2	1	2
Thermal treatment and combustion residues	59	89	1,977	9,459
Medicines				60
Municipal hazardous waste (other)		437	537	0
Polychlorinated biphenyls	1	29	8	85
Total	150,397	143,179	149,037	139,872

(Source: NTFSO)

Table 29 below shows the types of disposal and recovery treatments of hazardous waste exported, of which 34% by weight was disposed and 66% recovered. Of the tonnage exported for disposal, the vast bulk (81%) is sent for incineration without energy recovery (D10). Of the tonnage exported for recovery, 29% went for metal recovery (R4) and 21% for use as a fuel (R1).

Table 29 Disposal and recovery of reported export of hazardous waste, 2012

Disposal (D)	Exported (t)
D10	39,612
D9	2,930
D1	2,389
D5	1,666
D1/D5	973
D8	487
D8/D9	238
D14	29
Sub-total hazardous waste exported for disposal	48,324
Recovery (R)	Exported (t)
R4	26,542
R1	20,464
R2	13,879

Recovery (R)	Exported (t)
R5	10,937
R2, R3	6,256
R12	4,705
R3, R4	3,740
R4, R5	267
R13	1,458
R1, R3, R4	980
R9	730
R6	677
R3	164
R1, R4	327
R1, R3, R5	185
R1, R4, R5	144
R3, R5	55
R1, R9	22
R1, R2	13
R8	3
Sub-total hazardous waste exported for recovery	91,549
Total hazardous waste exported for treatment	139,872

(Source: NTFSO)

Figure 20 and Table 30 provide information on the destination and fate of hazardous waste exported from Ireland in 2012 for treatment at authorised facilities abroad. The UK continues to be the primary destination for hazardous waste exported (40%), followed by Belgium (27%) and Germany (22%).

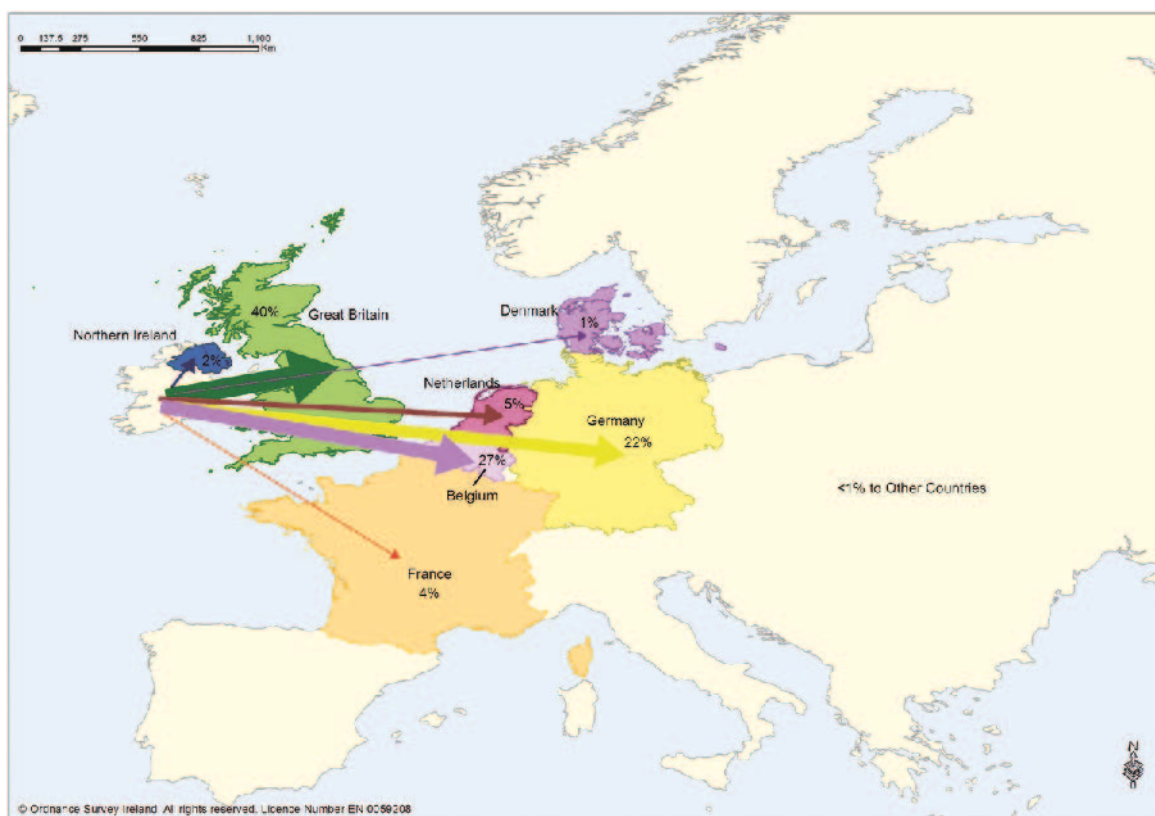


Figure 20: Destination of exported hazardous waste in 2012 (excluding contaminated soil)

Table 30: Destination and fate of notified hazardous waste exports (excluding contaminated soil), 2012

Destination	Disposal (t)	Recovery (t)	Total (t)
UK	8,720	47,665	56,385
Belgium	19,061	19,156	38,217
Germany	16,796	14,125	30,920
Netherlands	510	6,377	6,888
France	1,413	3,753	5,167
Denmark	1,610	-	1,610
Sweden	10	195	206
Poland	-	206	205
Finland	202	-	202
USA	-	69	69
Italy	-	3	3
Overall totals	48,322	91,549	139,872

(Source: NTFSO)

10.4 Notifiable waste imported for treatment

In 2012, 6,625 tonnes of oil-related waste was imported from the UK for recovery (R9) at commercial hazardous waste treatment facilities in the State.

10.5 Contaminated soil

Table 31 reports on the off-site management of contaminated soil between 2009 and 2012 (data do not reflect any contaminated soil that was treated *in situ* at its point of generation). There was a 40% reduction in the treatment of contaminated soil off-site in Ireland in 2012 compared to 2011. ESB Power Generation exported 5,056 tonnes of contaminated soil in 2011 which contributed to the high tonnage in that year.

Envia Ireland Limited's Portlaoise facility (W0184-01) is the only facility in Ireland licensed to treat contaminated soil (licensed to accept 40,000 tonnes per annum), and 54% of the total reported contaminated soil was treated at this facility. Of the total managed, 46% was exported to Germany and the Netherlands. There has been a significant drop in the tonnage of contaminated soil reported as managed off-site in recent years, which is a direct result of the downturn in the construction industry.

Table 31: Reported off-site management of contaminated soil, 2009 - 2012

	2009	2010	2011	2012
Off-site in Ireland (t)	12,428 (R ⁸⁶)	6,260 (R)	7,094 (R)	4,246 (R)
Exported (total) (t)	476	2,590	10,203	3,638
Germany	7 (D ⁸⁷)	2,590 (D)	10,203 (D)	3,610 (D)
				11 (R)
Netherlands	469 (R)			17 (R)
Total managed off-site (t)	12,904	8,850	17,297	7,884

(Source: Hazardous waste treatment survey, NTFSO)

10.6 National Hazardous Waste Management Plan

The Environmental Protection Agency has recently published a revised National Hazardous Waste Management Plan for the period 2014-2020. See Section 2.2.2 of Chapter 2 for more information.

86 R=recovery operation.

87 D=disposal operation.

APPENDICES

Appendix A – Indicators

Indicator	2007	2008	2009	2010	2011	2012
Municipal waste						
Municipal waste generated (t) ⁸⁸	3,397,683	3,224,279	2,952,977	2,846,115	2,823,242	2,692,537
Municipal waste generated/person (t) ⁸⁹	0.780	0.729	0.662	0.621	0.615	0.587
Municipal waste managed (t)	3,174,565	3,103,820	2,824,977	2,580,435	2,558,345 ⁹⁰	2,478,337
Municipal waste managed/person (t)	0.730	0.702	0.634	0.563	0.558	0.540
Disposal of managed municipal waste to landfill (t)	2,014,797	1,938,712	1,723,705	1,495,565	1,344,008	1,027,577
Disposal rate for managed municipal waste	64%	63%	61%	58%	53%	41%
Recovery of municipal waste (t)	1,159,767	1,165,108	1,101,272	1,084,870	1,202,569	1,450,711
Recovery rate for municipal waste	37%	38%	39%	42%	47%	59%
Number landfills accepting municipal waste for disposal	29	31	28	28	21	18
Number of bring banks	1,960	1,989	1,962	1,922	1,891	1,826
Number of civic amenity sites	90	96	107	107	113	118
Household waste						
Household waste generated (t)	1,761,167	1,677,338	1,626,469	1,686,387	1,683,241	1,577,100
Household waste generated/person (t)	0.410	0.379	0.365	0.368	0.367	0.344
Household waste managed (t)	1,625,490	1,556,879	1,498,469	1,420,706	1,406,576	1,362,900
Household waste managed/person (t)	0.370	0.352	0.336	0.310	0.307	0.297
Disposal of household waste to landfill (t)	1,200,980	1,155,567	1,056,267	843,842	750,066	589,863
Residual household waste disposal/ person (landfill) (t)	0.277	0.261	0.237	0.184	0.163	0.129
Disposal rate for household waste	74%	74%	71%	59%	53%	43%
Recovery of household waste (t)	424,510	401,312	442,202	576,864	656,510	773,037
Recovery rate for household waste	26%	26%	30%	41%	47%	57%

⁸⁸ Generated municipal waste includes estimated uncollected household waste.

⁸⁹ Per person calculations based on CSO census data (April 2012 population estimate=4,585,400, as published September 2012).

⁹⁰ Amended from that reported in National Waste Report 2011.

Indicator	2007	2008	2009	2010	2011	2012
Non-household municipal waste						
Non-household municipal waste managed	1,549,075	1,477,395	1,299,807	1,141,015	1,114,829	1,115,437
Non-household municipal waste managed per person	0.360	0.330	0.291	0.249	0.243	0.243
Non-household municipal waste disposed to landfill	813,817	758,176	640,737	633,010	568,770	437,714
Disposal rate for non-household municipal waste managed	53%	51%	49%	55%	51%	39%
Non-household municipal waste recovered	735,257	719,219	659,070	508,005	546,059	677,723
Recovery rate for non-household waste managed	47%	49%	51%	45%	49%	61%
Packaging waste						
Best estimate of total quantity managed (t)	1,055,952	1,026,759	972,430	863,714	863,597	809,501
Packaging waste managed/person (t)	0.240	0.232	0.218	0.189	0.188	0.177
Best estimate of packaging waste recovered (t)	671,630	664,043	679,535	636,933	682,280	700,737
Packaging waste recovered/person (t)	0.150	0.150	0.150	0.139	0.149	0.153
National recovery rate	64%	65%	70%	74%	79%	87%
Other waste stream indicators						
WEEE recovery (% of total treated)	82%	84%	85%	84%	85%	87%
Collection rate for portable batteries and accumulators (%)	-	-	17%	14%	29%	28%

Appendix B – Household waste collected and brought

Local authority	Mixed/residual collection (black bins) (t)	Mixed dry recyclables collection (green bin) (t)	Organics collection (brown bins) (t)	Segregated glass collection (t)	Bring banks (t)	Civic amenity sites ⁹¹ (t)	Household waste delivered directly to landfill face by householders (t)	Total collected and brought waste (t)
Dublin City	84,170	28,956	15,164	33	11,531	3,036	0	142,889
Dun Laoghaire-Rathdown	32,110	19,907	3,834	81	1,696	8,824	0	66,453
Fingal	44,181	19,907	19,594	51	4,740	7,421	0	95,849
South Dublin	37,299	19,331	6,199	69	4,954	13,753	0	81,604
Meath	38,587	8,486	119	0	1,924	3,286	0	52,403
Louth	25,808	6,520	1,921	3	2,001	9,471	0	45,723
Kildare	41,560	13,722	5,963	124	3,153	3,883	0	68,404
Wicklow	24,411	5,771	109	250	1,911	4,053	0	36,506
Laois	12,549	3,441	942	4	1,138	1,491	3,087	22,652
Offaly	11,301	2,810	333	0	1,017	1,894	0	17,355
Longford	5,659	1,655	338	0	663	1,275	0	9,591
Westmeath	13,513	3,860	176	0	1,364	3,734	0	22,647
Eastern and Midlands Region	371,148	134,366	54,691	615	36,092	62,156	3,087	662,075

⁹¹ Includes WEEE collected by compliance schemes at civic amenity sites.

Local authority	Mixed/residual collection (black bins) (t)	Mixed dry recyclables collection (green bin) (t)	Organics collection (brown bins) (t)	Segregated glass collection (t)	Bring banks (t)	Civic amenity sites ⁹¹ (t)	Household waste delivered directly to landfill face by householders (t)	Total collected and brought household waste (t)
Cavan	10,417	3,345	187	0	2,126	3,203	0	19,279
Monaghan	9,398	3,842	870	0	1,084	1,894	0	17,086
Galway County	29,266	10,710	2,439	315	3,021	1,664	0	47,415
Galway City	9,813	4,969	5,254	69	1,681	1,333	0	23,120
Leitrim	4,415	1,024	1	0	563	474	0	6,477
Mayo	23,426	7,853	1,064	3	2,361	4,927	0	39,633
Donegal	14,073	3,761	0	0	2,708	685	75	21,302
Roscommon	8,753	2,377	427	0	862	2,239	0	14,658
Sligo	9,807	1,990	109	0	1,283	1,020	0	14,209
Connacht Ulster Region	119,368	39,870	10,351	387	15,688	17,472	75	203,179

Local authority	Mixed/residual collection (black bins) (t)	Mixed dry recyclables collection (green bin) (t)	Organics collection (brown bins) (t)	Segregated glass collection (t)	Bring banks (t)	Civic amenity sites ⁹¹ (t)	Household waste delivered directly to landfill face by householders (t)	Total collected and brought waste (t)
Clare	13,492	5,604	1,882	109	1,651	6,184	0	28,921
Kerry	16,946	6,633	603	58	2,788	6,181	337	33,545
Limerick County	18,392	6,554	1,811	12	1,729	222	0	34,414
Limerick City	10,909	3,655	1,033	59	949	5,919	0	16,826
Cork City	27,055	9,831	0	1,285	1,352	2,422	0	41,945
Cork County	52,952	23,344	1	2,416	6,451	17,387	0	102,551
Carlow	11,671	2,655	798	65	842	1,291	818	18,141
Kilkenny	11,350	4,087	313	0	1,512	3,177	0	20,439
South Tipperary	13,810	4,463	930	28	1,648	1,384	0	22,194
North Tipperary	11,228	4,480	826	0	1,079	1,315	0	18,997
Waterford County	10,862	3,726	2,479	68	1,346	925	0	18,520
Waterford City	8,601	2,339	2,988	0	1,067	985	0	16,867
Wexford County	26,460	8,922	1,384	0	2,849	2,830	0	42,445
Southern Region	233,727	86,292	15,045	4,100	25,263	50,234	1,155	415,805
Portable batteries collected by compliance schemes at civic amenity sites, retail premises and one-off collection days								
Household WEEE collected by compliance schemes at retail premises, one-off collection days								
Bulky household waste (EWC 20 03 07) reported in waste collection permit returns								
Estimated household waste collected at pay-to-use units (PTUs)								
National total	724,244	260,528	80,046	5,101	77,041	129,897	4,317	1,362,900

⁹² This tonnage does not include lead acid batteries as this is not considered household waste.

Appendix C Household waste collected at bring banks

Local authority area	Paper & cardboard (t)	Glass (t)	Aluminium cans (t)	Steel cans (t)	Plastic (t)	Composite packaging (t)	Other ⁹³ (t)	Total (t)
Dublin City	1,592	8,689	28	5	0	0	1,217	11,531
Dun-Laoghaire-Rathdown	0	1,671	18	0	0	0	8	1,696
Fingal	0	4,567	17	0	0	0	156	4,740
South Dublin	0	4,736	22	0	0	0	196	4,954
Meath	0	1,893	31	0	0	0	0	1,924
Louth	0	1,658	76	0	268	0	0	2,001
Kildare	0	3,103	34	0	0	0	17	3,153
Wicklow	0	1,773	40	15	0	0	83	1,911
Laois	0	1,100	15	23	0	0	0	1,138
Offaly	0	956	19	42	0	0	0	1,017
Longford	0	639	6	9	0	0	9	663
Westmeath	0	1,292	15	30	0	0	27	1,364
Eastern and Midlands Region								
Cavan	91	1,364	40	80	543	9	0	2,126
Monaghan	0	1,034	20	30	0	0	0	1,084
Galway City	0	1,681	0	0	0	0	0	1,681
Galway County	0	2,875	102	0	0	0	44	3,021
Leitrim	0	536	27	0	0	0	0	563

93 Other = mixed plastic & paper, waste oils, green waste (including Christmas trees), bulky waste, textiles and household hazardous waste. These waste types are generally collected at temporary bring centres rather than traditional bring banks.

78 |

Appendix D – Household waste collected at civic amenity sites

Local authority area	Mixed residual waste (t)	Organic waste (food & garden) (t)	Mixed dry recyclables (t)	Paper, card & magazines (t)	Glass (t)	Metals (t)	Plastic (t)	Composites (eg tetrapak) (t)	C&D (DIY) (t)	Wood (t)	Waste mineral oils & filters (t)	Waste cooking or veg. oils (t)	Paint & varnish (t)	WEEE ⁹⁴ (t)	Bulky waste (t)	Household hazardous waste (t)	Other ⁹⁵ (t)	Total (t)
Dublin City	93	126	176	57	177	35	32	0	477	164	2	2	283	460	944	7	0	3,036
Dun Laoghaire-Rathdown	217	4,236	0	748	412	277	137	14	298	492	15	6	113	611	1,232	15	1.38	8,824
Fingal	0	1,141	0	460	518	349	91	9	1,077	973	28	6	158	1,204	1,400	7	1.64	7,421
South Dublin	3,419	2,145	0	356	114	334	31	0	699	270	33	1	34	730	5,582	0	3.19	13,753
Meath	41	750	0	500	245	214	124	15	153	277	7	1	26	703	227	3	0	3,286
Louth	914	2,665	0	1,430	573	512	505	0	945	1,120	6	3	0	772	0	3	25	9,471
Kildare	2,359	214	334	57	90	90	9	0	0	102	4	0	15	367	239	0	3	3,882
Wicklow	11	0	0	1,623	889	170	389	42	0	0	15	5	27	867	0	3	11	4,053
Laois	174	92	0	356	166	168	199	6	0	28	12	0	6	268	0	17	0	1,491
Offaly	375	294	0	311	71	141	96	13	15	157	5	12	34	248	123	0	0	1,894
Longford	350	210	93	113	27	52	24	4	5	22	3	0	0	200	140	0	0	1,275
Westmeath	1,671	535	0	467	145	136	83	20	0	252	8	2	0	321	84	9	0.96	3,734
Eastern and Midlands Region	9,624	12,408	603	6,479	3,427	2,476	1,719	122	3,668	3,890	138	39	696	6,752	9,971	64	44	62,120

⁹⁴ Compliance scheme data for household WEEE collected at civic amenity sites.

⁹⁵ Other = mainly textiles, books, bric-a-brac, toner cartridges and filament bulbs

Local authority area	Mixed residual waste (t)	Organic waste (food & garden) (t)	Mixed dry recyclables (t)	Paper, card & magazines (t)	Glass (t)	Metals (t)	Plastic (t)	Composites (eg tetrapak) (t)	C&D (Diy) (t)	Wood (t)	Waste mineral oils & filters (t)	Waste cooking or veg. oils (t)	Paint & varnish (t)	WEEE ⁹⁴ (t)	Bulky waste (t)	Household hazardous waste (t)	Other ⁹⁵ (t)	Total (t)
Cavan	1,190	329	0	342	52	112	30	4	223	196	1	0	1	480	244	0	0.14	3,203
Monaghan	234	146	0	653	77	102	88	1	190	103	4	0	0	212	82	1	0	1,893
Galway County	170	44	2	364	256	224	213	0	0	0	10	0	21	350	8	1	2	1,664
Galway City	0	0	0	0	31	156	49	0	0	250	1	0	86	698	59	0	3	1,333
Leitrim	0	10	0	65	60	27	24	2	0	0	1	0	17	71	196	0	0	474
Mayo	3,131	38	0	565	162	249	139	6	26	159	9	1	25	402	10	4	1	4,927
Donegal	0	2	240	0	0	51	74	0	0	0	0	0	0	319	0	0	0	685
Roscommon	958	2	0	506	111	93	83	0	46	163	0	0	27	249	0	0	0	2,239
Sligo	0	358	0	125	85	50	61	12	33	29	0	3	6	256	0	1	2	1,020
Connacht-Ulster Region	5,682	929	242	2,620	835	1,064	759	24	517	900	26	4	184	3,037	598	7	8	17,439

Local authority area	Mixed residual waste (t)	Organic waste (food & garden) (t)	Mixed dry recyclables (t)	Paper, card & magazines (t)	Glass (t)	Metals (t)	Plastic (t)	Composites (eg tetrapak) (t)	C&D (DIY) (t)	Wood (t)	Waste mineral oils & filters (t)	Waste cooking or veg. oils (t)	Paint & varnish (t)	WEEE ⁹⁴ (t)	Bulky waste (t)	Household hazardous waste (t)	Other ⁹⁵ (t)	Total (t)
Clare	1,956	400	0	539	1,462	345	310	9	37	481	19	3	39	546	23	0	14	6,184
Kerry	3,597	40	204	889	311	222	186	0	67	94	5	1	4	486	66	0	9	6,181
Limerick County	1,496	800	0	465	158	288	280	8	819	554	7	4	109	682	226	3	18	222
Limerick City	0	0	0	128	0	0	0	0	0	0	0	0	0	94	0	0	0	5,917
Cork City	1,141	188	0	153	31	67	46	0	0	133	7	0	19	637	0	1	0	2,422
Cork County	4,196	1,528	345	1,491	855	847	297	0	2,381	1,526	40	16	94	1,614	2,141	2	14	17,387
Carlow	0	312	0	235	128	108	64	7	12	187	8	1	15	213	0	0	1.8	1,291
Kilkenny	2,020	111	0	269	71	65	61	9	0	26	4	0	3	205	332	1	0	3,177
South Tipperary	216	35	75	107	66	94	4	0	47	319	3	0	6	311	21	0	12	1,315
North Tipperary	25	0	9	390	217	86	100	5	0	146	8	0	0	392	0	0	5	1,384
Waterford County	249	429	0	22	16	13	0	0	0	0	3	2	1	198	0	0	0	985
Waterford City	134	223	0	142	21	26	0	0	99	77	1	0	3	192	61	0	0	925
Wexford County	1,264	0	17	404	206	227	136	9	0	80	16	2	0	460	0	0	9	2,830
Southern Region	16,294	4,066	649	5,233	3,541	2,386	1,484	46	3,462	3,623	121	30	294	6,030	2,870	7	84	50,220
Portable batteries collected by compliance schemes at civic amenity sites nationally.																		118
National total (t)	31,600	17,404	1,494	14,332	7,804	5,926	3,962	193	7,647	8,412	285	73	1,174	15,819	13,439	78	137	129,898

Appendix E – Landfills in operation in 2012

Local Authority / Operator	Facility Name	Waste Planning Region	Waste Licence Reg No.	Total waste accepted in 2011 (t)	Total waste accepted in 2012 (t)	Disposal			Recovery		
						Municipal waste (t)	Industrial Waste (t)	C & D Waste (t)	Municipal waste (t)	Industrial Waste (t)	C&D (t)
Donegal County Council	Ballynacarrick Landfill	Connacht-Ulster Region	W0024-04	16,170	20,181	19,022	1,159	0	0	0	0
Mayo County Council	Derrinmera Landfill	Connacht-Ulster Region	W0021-02	33,859	11,652	11,232	3	0	55	0	362
Mayo County Council	Rathroeen Landfill	Connacht-Ulster Region	W0067-02	1,354	45,238	40,501	1,404	0	1,129	0	2,204
Monaghan County Council	Scotch Corner Landfill	Connacht-Ulster Region	W0020-02	27,430	16,343	13,298	1,022	0	0	0	2,023
Fingal County Council	Balleally Landfill	Eastern & Midlands Region	W0009-03	89,503	238,362	12,117	123	0	0	0	226,122
Laois County Council	Kyletalesha Landfill	Eastern & Midlands Region	W0026-03	43,720	40,830	37,143	0	802	2,886	0	0
Louth County Council	Whiteriver	Eastern & Midlands Region	W0060-03	120,381	143,291	47,382	41,932	41	580	0	53,356
South Dublin County Council	Arthurstown Landfill	Eastern & Midlands Region	W0004-04	33,438	27,703	0	0	0	0	0	27,703
Wicklow County Council	Rampere Landfill	Eastern & Midlands Region	W0066-03	38,825	20,354	15,508	0	163	0	0	4,684
Carlow County Council	Powerstown Landfill	Southern Region	W0025-03	10,146	10,046	5,119	696	180	800	27	3,224
Cork County Council	Youghal Landfill	Southern Region	W0068-03	25,911	4,784	1,828	0	0	1,381	0	1,575
Kerry County Council	North Kerry Landfill	Southern Region	W0001-04	16,504	71,078	70,920	0	158	0	0	0
Limerick County Council	Gortadroma	Southern Region	W0017-04	135,487	141,603	129,103	288	0	2,065	929	9,218
South Tipperary County Council	Donohill Landfill	Southern Region	W0074-03	17,281	17,666	11,151	0	0	2,968	3,386	161
Wexford County Council	Holmestown Landfill	Southern Region	W0191-02	24,120	4,466	4,236	7	0	0	216	7

Local authority landfills

Local Authority / Operator	Facility Name	Waste Planning Region	Waste Licence Reg No.	Total waste accepted in 2011 (t)	Total waste accepted in 2012 (t)	Disposal			Recovery		
						Municipal waste (t)	Industrial Waste (t)	C & D Waste (t)	Municipal waste (t)	Industrial Waste (t)	C&D (t)
Private sector landfills	Greenstar Holdings Ltd.	East Galway Residual Landfill	W0178-02	110,019	134,146	94,476	11,039	0	5,183	1,323	22,125
	Bord Na Móna	Srahmore	W0199-02	16,185	57,794	0	0	0	0	0	57,794
	Bord Na Móna	Drehid Waste Management Facility	W0201-03	415,583	415,554	290,717	3,147	1,225	15,865	65	104,536
	Greenstar Holdings Ltd.	Knockharley Landfill	W0146-02	126,128	132,744	85,008	3,480	0	0	7,027	37,229
	Greenstar Holdings Ltd.	Ballynagran Residual Landfill	W0165-02	212,192	231,257	138,819	10,251	4,953	6,027	5,152	66,054
	Bord Na Móna	Clonbullogue Ash Repository	W0049-02	34,663	31,422	0	31,422	0	0	0	0
	Murphy Concrete Manufacturing Ltd.	Murphy Environmental Hollywood Ltd	W0129-02	27,378	41,565	0	7,452	34,113	0	0	0
	Murphy Concrete Manufacturing Ltd.	Murphy Concrete Manufacturing Ltd	W0151-01	60,427	11,176	0	0	0	0	0	11,176
						1,027,577	113,425	41,634	38,939	18,125	629,554
	Green shaded landfills are those that accepted municipal waste for disposal in 2012			1,636,703	1,869,254	Total waste disposal		1,182,635	Total waste recovery		686,618

Appendix F – Open and recently closed landfills with associated waste infrastructure

Waste Planning Region	Local Authority / Private Operator	Facility Name	Waste Licence Reg. No.	Civic amenity site	Composting Facility	Waste Transfer Station
Eastern and Midlands Region	Drogheda Borough Council	Drogheda Landfill	W0033-01	✓		
	Dundalk Town Council	Dundalk Landfill / Civic Waste Facility	W0034-01	✓	✓	
	Dun Laoghaire-Rathdown	Ballyogan Recycling Park	W0015-01	✓		
	Kildare County Council	Silliot Hill Landfill	W0014-01	✓		✓
	Laois County Council	Kyletesha Landfill	W0026-03	✓		
	Offaly County Council	Derryclure Landfill	W0029-04	✓		✓
	Westmeath County Council	Ballydonagh Landfill	W0028-03	✓		
	Wicklow County Council	Ballymurtagh Landfill Facility	W0011-01	✓		
	Wicklow County Council	Rampere Landfill	W0066-03	✓		
	Bord Na Móna	Drehid Waste Management Facility	W0201-03		✓	
	Cavan County Council	Corranure Landfill	W0077-02	✓		
	Galway City Council	Carrowbrowne Landfill	W0013-01	✓	✓	
	Galway County Council	Pollboy Landfill	W0027-02	✓		
	Mayo County Council	Rathroen Landfill	W0067-02	✓		
Connacht-Ulster Region	Monaghan County Council	Scotch Corner Landfill	W0020-02	✓		

Waste Planning Region	Local Authority / Private Operator	Facility Name	Waste Licence Reg. No.	Civic amenity site	Composting Facility	Waste Transfer Station
Southern Region	Clare County Council	Ballyduff Beg Central Waste Management Facility	W0109-01	✓	✓	
	Cork City Council	Kinsale Road Landfill	W0012-02	✓	✓	
	Cork County Council	East Cork Landfill Site	W0022-01	✓		
	Cork County Council	Raffeen Landfill	W0023-01	✓		
	Cork County Council	Youghal Landfill	W0068-03	✓		
	Cork County Council	Derryconnell Landfill Site	W0089-02	✓		
	Carlow County Council	Powerstown Landfill Site	W0025-02	✓		
	Kerry County Council	North Kerry Landfill Site	W0001-04	✓		
	Kilkenny County Council	Dunmore Landfill	W0030-02	✓		
	Limerick County Council	Gortadroma Landfill	W0017-04	✓		
	North Tipperary County Council	Ballaghaveny Landfill	W0078-03	✓		
	South Tipperary County Council	Donohill Landfill	W0074-03	✓		
	Waterford City Council	Kilbarry Landfill	W0018-01	✓		
	Waterford County Council	Dungarvan CAS and Transfer Station	W0032-02	✓		✓
	Wexford County Council	Holmestown Landfill	W0191-02	✓		

Appendix G – Recovery and disposal operations

Table G-1 Disposal and recovery operations as per Annex II A and B of Directive (2008/98/EC)⁹⁶ on waste

Code	Disposal operations	Code	Recovery operations
D1	Deposit into or onto land (eg landfill, etc.)	R1	Use principally as a fuel or other means to generate energy
D2	Land Treatment (eg biodegradation of liquid or sludgy discards in soils etc.)	R2	Solvent reclamation/regeneration
D3	Deep injection (eg injection of pumpable discards into wells, salt domes or naturally occurring repositories etc.)	R3	Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)
D4	Surface impoundment (eg placement of liquid or sludgy discards into pits, ponds or lagoons etc.)	R4	Recycling / reclamation of metals and metal compounds
D5	Specially engineered landfill (eg placement into lined discrete cells which are capped and isolated from one another and the environment etc.)	R5	Recycling / reclamation of other inorganic materials
D6	Release into a water body except seas / oceans	R6	Regeneration of acids or bases
D7	Release into seas/oceans including sea-bed insertion	R7	Recovery of components used for pollution abatement
D8	Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D7 and D9 to D12	R8	Recovery of components from catalysts
D9	Physico chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D8 and D10 to D12 (eg evaporation, drying, calcination etc.)	R9	Oil re-refining or other reuses of oil
D10	Incineration on land	R10	Land treatment resulting in benefit to agriculture or ecological improvement
D11	Incineration at sea	R11	Use of wastes obtained from any of the operations numbered R1 to R10
D12	Permanent storage (eg emplacement of containers in a mine, etc.)	R12	Exchange of wastes for submission to any of the operations numbered R1 to R11
D13	Blending or mixing prior to submission to any of the operations numbered D1 to D12	R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)
D14	Repackaging prior to submission to any of the operations numbered D1 to D13		
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)		

⁹⁶ As transposed into national legislation by European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011).

Appendix H – Waste composition & biodegradability factors

Table H-1: Collected household waste composition profile (% by weight)

Waste streams	Mixed residual waste (black bin) ⁹⁷	Mixed dry recyclables (green bin)	Mixed organics (brown bin)	Total	Biodegradability factor
BMW Content	61.6% ⁹⁸	72.9%	93.6%	65%	-
	Weight %	Weight %	Weight %	Weight %	-
Organic waste	24.0%	1.3%	28.5%	16.6%	1
Garden waste	6.5%	0.1%	50.8%	6.1%	1
Papers	12.5%	54.0%	9.8%	19.0%	1
Cardboards	3.6%	15.3%	0.5%	6.0%	1
Composites	1.0%	2.2%	0.1%	1.0%	0
Textiles	7.3%	1.1%	0.5%	5.6%	0.5
Nappies	8.4%	0.4%	0.8%	5.4%	0.5
Plastics	13.6%	15.5%	1.8%	12.4%	0
Glass	3.3%	2.3%	0.2%	8.5%	0
Metals	3.1%	4.0%	0.1%	3.7%	0
Wood	1.2%	0.3%	0.1%	1.9%	0.5
Hazardous waste	0.9%	0.5%	0.0%	0.9%	0
WEEE	0.3%	0.2%	0.0%	1.8%	0
Unclassified combustibles	1.4%	0.2%	0.7%	1.7%	0.5
Unclassified incombustibles	1.2%	0.2%	0.1%	1.6%	0
Fines smaller than 20mm	11.7%	2.4%	6.0%	7.8%	0.5
Total	100%	100%	100%	100%	-

(Source: EPA Municipal Waste Characterisation Report 2008 at www.epa.ie/pubs/reports/waste/wastecharacterisation/)

⁹⁷ This represents an average or composite of the residual bin from either a 1-bin, 2-bin or 3-bin collection service.

⁹⁸ The residual bin from a 3-bin collection service has a BMW content of 47% (refer to EPA Waste Characterisation Report 2008).

Table H-2 Composition and biodegradability factors for commercial wastes

Waste streams	Mixed residual waste (black bin)	Mixed dry recyclables (green bin)	Total	Biodegradability factor
BMW content	75.00%	85.10% (est)	77.00%	-
	Weight %	Weight %	Weight %	-
Organic waste	42.20%	11.80%	27.40%	1
Garden waste	0.20%	0.00%	0.10%	1
Papers	25.50%	24.20%	24.80%	1
Cardboards	4.00%	48.60%	25.80%	1
Composites	3.40%	0.70%	2.10%	0
Textiles	4.90%	0.60%	2.80%	0.5
Nappies	0.00%	0.00%	0.00%	0.5
Plastics	10.80%	5.30%	8.10%	0
Glass	1.70%	6.80%	4.20%	0
Metals	2.10%	0.90%	1.50%	0
Wood	0.40%	0.00%	0.20%	0.5
Hazardous waste	3.00%	0.90%	1.90%	0
WEEE	0.20%	0.00%	0.10%	0
Unclassified combustibles	0.40%	0.10%	0.30%	0.5
Unclassified incombustibles	0.20%	0.00%	0.10%	0
Fines smaller than 20mm	1.00%	0.10%	0.60%	0.5
Total	100%	100%	100%	-

(Source: EPA Municipal Waste Characterisation Reports, www.epa.ie/whatwedo/resource/municipal/)

Table H-3 EPA approved factors to calculate the BMW content of municipal waste streams

Municipal waste stream	BMW factor
Untreated 1-bin household waste ^{Note 1}	0.65
2-bin residual household waste	0.63
3-bin residual household waste	0.47
Untreated 1-bin commercial waste ^{Note 1}	0.77
2-bin residual commercial waste	0.75
3-bin residual commercial waste	0.68
Untreated Municipal waste skip waste ^{Note 1}	0.35
Bulky waste from sorting of Municipal waste skips	0.50
Oversize residues from Municipal waste skips	0.43
Fines residues from Municipal waste skips	0.40
Oversize residues from Municipal waste bin collections ("wet waste")	0.41
Fines residues from Municipal waste bin collections ("wet waste")	0.95
Residues from source separated recyclable waste ("clean material recovery facility")	0.47
Biostabilised residual waste	0
Untreated cleansing waste (fly-tipping, street bins, road sweepings etc.) ^{Note 1}	0.65
Residual Municipal waste from civic amenity facility	0.63
Ash residue from Municipal waste incineration	0

Note 1: Only waste that has been subject to treatment can be accepted for disposal at a landfill facility. (See EPA Approved Factors to Calculate the BMW Content of Municipal Waste Streams, Version 2.0, 10th June 2011 www.epa.ie/pubs/advice/waste/municipalwaste/).

Appendix I – Waste accepted for composting / digestion in 2012

EWC chapter sub-heading	Description	Tonnes
02 01	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing	3,610
02 02	Wastes from the preparation and processing of meat, fish and other foods of animal origin	5,229
02 03	Wastes from fruit, vegetables, cereal etc. preparation and processing	1,393
02 05	Wastes from the dairy products industry	15,008
02 06	Wastes from the baking and confectionery industry	736
02 07	Wastes from the production of alcoholic and non-alcoholic beverages (except, coffee, tea and cocoa)	27,644
03 01	Wastes from wood processing and the production of panels and furniture	3,771
03 03	Wastes from pulp, paper and cardboard production and processing	12
04 02	Wastes from the textile industry	170
07 01	Wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals	20
07 05	Wastes from the MFSU of pharmaceuticals	3,642
07 06	Wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics	839
15 01	Packaging (including separately collected municipal packaging wastes)	36
17 02	Construction and demolition wastes	30
17 08	Gypsum-based construction material	117
19 08	Wastes from waste water treatment plants not otherwise specified	55,583
19 05	Waste from aerobic treatment of solid wastes	516
19 09	Wastes from the preparation of water intended for human consumption or water for industrial use	5,948
20 01	Municipal wastes (separately collected fractions) except 15 01	94,289
20 02	Garden and parks wastes (including cemetery waste)	37,371
20 03	Other municipal wastes	5,339
TOTAL		261,303 ⁹⁹

⁹⁹ Biostabilisation of organic fines from residual waste is an activity carried out at a number of composting facilities but it is not reported on here as it is not a composting/digestion activity.

Appendix J – Household organic waste collections at kerbside and brought to civic amenity/temporary collection sites

Local authority area	2011	2012
	Separate kerbside collection of household organic waste (brown bins) (tonnes)	Separate kerbside collection of household organic waste (brown bins) (tonnes)
Dublin City	16,675	15,164
Dun Laoghaire Rathdown	2,408	3,834
Fingal	18,117	19,549
South Dublin	9,445	6,199
Kildare	4,167	5,963
Laois	546	942
Longford	326	338
Louth	2,435	1,921
Meath	144	119
Offaly	456	333
Wicklow	24	109
Westmeath	12	176
Total Eastern and Midlands Region	54,755	54,647
Cavan	36	187
Donegal	0	0
Galway City	5,004	5,254
Galway County	1,962	2,439
Leitrim	0	1
Mayo	865	1,064
Sligo	72	109
Roscommon	514	427
Monaghan	411	870
Total Connacht-Ulster Region	8,864	10,351
Carlow	376	798
Clare	1,069	1,882
Cork City	0	0
Cork County	1,354	1

Local authority area	2011	2012
	Separate kerbside collection of household organic waste (brown bins) (tonnes)	Separate kerbside collection of household organic waste (brown bins) (tonnes)
Kerry	549	603
Kilkenny	154	313
Limerick City	605	1,033
Limerick County	1,309	1,811
North Tipperary	442	826
South Tipperary	523	930
Waterford City	3,246	2,988
Waterford County	2,194	2,479
Wexford	2,055	1,384
Total Southern Region	13,876	15,048
National total separate kerbside collection (tonnes)	77,494	80,046
Household organic waste collected at civic amenity sites & temporary collection sites ¹⁰⁰ (tonnes)	18,539	19,118
National total kerbside collection plus civic amenity sites & bring centres (tonnes)	96,034	99,164

(Source: Local authority survey)

¹⁰⁰ Many civic amenity sites accept organic (green and/or food) waste. Also temporary collections are held by many local authorities to accept green waste including Christmas trees.

Appendix K – Type and distribution of household kerbside collection services

Waste management region	Local authority area	Service provider(s) (private sector = PS local authority = LA)	Kerbside service provided		
			Residual and mixed dry recyclables	Organics	Segregated glass
Eastern and Midlands Region	Dublin City	PS & LA	✓	✓	✓
	Dun Laoghaire Rathdown	PS & LA	✓	✓	✓
	Fingal	PS	✓	✓	✓
	South Dublin	PS	✓	✓	✓
	Meath	PS	✓	✓	
	Louth	PS	✓	✓	✓
	Kildare	PS	✓	✓	✓
	Wicklow	PS	✓	✓	✓
	Laois	PS	✓	✓	✓
	Offaly	PS	✓	✓	
	Longford	PS	✓	✓	
	Westmeath	PS	✓	✓	
Connacht-Ulster Region	Cavan	PS	✓	✓	
	Monaghan	PS	✓	✓	
	Galway City	PS & LA	✓	✓	✓
	Galway County	PS	✓	✓	✓
	Leitrim	PS	✓	✓	
	Mayo	PS	✓	✓	✓
	Donegal	PS	✓		
	Roscommon	PS	✓	✓	
	Sligo	PS	✓	✓	
Southern Region	Clare	PS	✓	✓	✓
	Kerry	PS & LA	✓	✓	✓
	Limerick County	PS	✓	✓	✓
	Limerick City	PS	✓	✓	✓
	Cork City	PS	✓		✓
	Cork County	PS	✓	✓	✓
	Carlow	PS	✓	✓	✓
	Kilkenny	PS & LA	✓	✓	
	South Tipperary	PS	✓	✓	✓
	North Tipperary	PS	✓	✓	
	Waterford County	PS & LA	✓	✓	✓
	Waterford City	PS	✓	✓	
	Wexford	PS & LA	✓	✓	

(Source: NWCPO, CSO)

Appendix L – Percentage of permanent private households on various kerbside collection services

Waste management region	Local authority area	Percentage of permanent private households on a household service that are serviced with:			
		Residual collection only	Residual and mixed dry recyclables collections	Organic collection	Glass collection
Eastern and Midlands Region	Dublin City	1%	99%	53%	2%
	Dun Laoghaire Rathdown	0%	100%	43%	6%
	Fingal	0%	100%	84%	1%
	South Dublin	0%	100%	64%	2%
	Meath	9%	91%	2%	0%
	Louth	9%	91%	24%	1%
	Kildare	0%	100%	46%	2%
	Wicklow	0%	100%	3%	7%
	Laois	0%	100%	31%	5%
	Offaly	2%	98%	23%	0%
	Longford	6%	94%	34%	0%
	Westmeath	4%	96%	8%	0%
Connacht-Ulster Region	Cavan	4%	96%	7%	0%
	Monaghan	3%	97%	11%	0%
	Galway City	1%	99%	83%	2%
	Galway County	4%	96%	19%	0%
	Leitrim	1%	99%	1%	0%
	Mayo	3%	97%	19%	0%
	Donegal	22%	78%	0%	0%
	Roscommon	2%	98%	15%	0%
	Sligo	23%	77%	0%	0%
Southern Region	Clare	4%	96%	70%	5%
	Kerry	0%	100%	18%	2%
	Limerick City	0%	100%	42%	5%
	Limerick County	0%	100%	46%	0%
	Cork City	8%	92%	0%	10%
	Cork County	1%	99%	0%	16%
	Carlow	0%	100%	26%	5%
	Kilkenny	1%	99%	10%	0%
	North Tipperary	0%	100%	47%	0%
	South Tipperary	0%	100%	30%	5%
	Waterford City	0%	100%	99%	0%
	Waterford County	0%	100%	62%	3%
	Wexford	0%	100%	32%	0%
National		2%	98%	37%	3%

(Source: NWCPO, CSO)

Appendix M – Estimate of unmanaged household waste

This appendix sets out how the estimate of unmanaged household waste was determined for 2012, which estimates the tonnage of household waste generated by permanent private households that are not serviced with a kerbside collection, and then deducting household waste management routes available to householders that are not serviced with a kerbside service, or chose not to sign up to a kerbside collection service. The number of households on a kerbside collection service was assessed by first allowing a factor for bin-sharing (EPA allowed for 2% households bin-sharing) and then multiplying the percentage of remaining private permanent households without a kerbside waste collection by an average value of waste collected per household on a 2-bin service. This waste may still have been collected and entered the waste treatment chain. It may have been brought to civic amenity sites, to bring banks or directly to landfills; or it may have been fly-tipped and transferred to waste treatment facilities by local authority personnel. To work out the amount of unmanaged household waste, the amount of conventional 'bin-type' household residual and mixed dry recyclable waste brought to bring banks, as well as that brought to landfills (including fly-tipped) was subtracted from the amount of waste generated by households and not collected at kerbside. The estimate of unmanaged household waste in 2012 is 214,200 tonnes.

A	CSO census 2011 number of permanent private households (latest data available)	1,649,408
B	Number of households on a bin or bag service as reported in waste collection permit annual returns	1,181,029
C	Number of households on a collection service (allowing for 2% bin-share)((A*0.01)+B) [i.e. an additional 1% of occupied houses included in 'serviced' households]	1,197,523
D	Number of houses not on a kerbside collection service (A-C)	451,885
E	Average tonnage waste collected per household served kerbside with a 2-bin system (residual and mixed dry recyclables)	0.65
F	Gross tonnage household waste estimated as uncollected at kerbside (D*E)	294,970
G	Household waste brought to civic amenity sites, bring banks, directly to landfill (NB not all material – only that material that would be equivalent to kerbside residual/mixed dry recyclable type streams)	78,417
H	Household waste reported as fly tipped and delivered to landfill	2,354
	Net tonnage household waste unmanaged (F-(G+H))	214,200

Tonnage for G is made up of the following household wastes:		
Household waste brought to:	Waste material	Tonnage
Civic amenity site/brought directly to landfill	Mixed residual waste	35,917
Civic Amenity Site	Mixed dry recyclables	1,494
	Paper & cardboard	14,332
	Metals	5,926
	Plastic	3,962
	Composites	193
	Wood (50% of that reported as not all expected to be possible to dispose to kerbside bin)	4,206
	Waste mineral oils	285
	Waste cooking oils	73
	Paint	1,174
	WEEE	124
	Bulky (portion of total 13,439 tonnes reported as not all would be possible to dispose to kerbside bin)	2,000
	Portable batteries	14
	Household hazardous waste	9
	Other	16
Bring Bank	Paper & Cardboard	1,864
	Aluminium cans	1,304
	Steel cans	708
	Plastic	1,008
	Composites	9
	Other	1,349
Estimate for PTU collections		2,396
Portable batteries other than collected at civic amenity sites		54
TOTAL		78,417

Appendix N: Treatment of hazardous waste on-site at IPPC licensed facilities in 2012

Facility name	IPPC Register No.	Principal class of IPPC activity	Waste type	Recovery/ disposal code ¹⁰¹	Quantity treated (t)
Arran Chemical Co Ltd	P0110-02	Chemicals	Solvents	R2	855
Astellas Ireland Co. Ltd	P0007-03	Chemicals	Solvents	D10	465
			Aqueous washing liquids and mother liquors (07__01*)	D10	1,279
Aughinish Alumina Ltd	P0035-04	Chemicals	Salts and salt cake	D1	15,808
BASF Ireland Limited	P0052-02	Chemicals	Other industrial hazardous waste	R1	5,106
Phillips 66 Bantry Bay Terminal	P0419-01	Fossil Fuels	Oil waste (mineral oil)	R9	180
Eli Lilly	P0009-03	Chemicals	Solvents	D10	5,676
			Solvents (halogenated where specified)	D10	123
Galmoy Mines Ltd	P0517-01	Minerals and other materials	Oily sludges	D1	45
Irish Industrial Explosives Ltd	P0055-01	Chemicals	Other industrial hazardous waste	D10	1
Mallinckrodt Medical Imaging Ireland	P0050-02	Chemicals	Solvents	R2	6299
			Solvents	D8	346
			Solvents (halogenated where specified)	D8	<0.1
			Solvents (halogenated where specified)	D9	140
MSD International GmbH	P0011-04	Chemicals	Solvents	D8	972
				R2	1,399
Merck Millipore Ltd	P0571-02	Surface coatings	Solvents	R2	1,072

¹⁰¹ See Appendix G for a descriptive list of recovery and disposal operations.

Facility name	IPPC Register No.	Principal class of IPPC activity	Waste type	Recovery/ disposal code ¹⁰¹	Quantity treated (t)
Novartis Ringaskiddy Ltd	P0006-03	Chemicals	Other industrial hazardous waste	D10	<0.1
			Packaging (contaminated or containing residues)	D10	26
			Sludges and filter cakes	D10	0.2
			Solvents	D10	0.027
				D8	251
				R1	2,926
				R2	5,566
			Absorbents, wiping cloths	D10	31
			Aqueous washing liquids and mother liquors (07__01*)	D10	421
			Solid wastes from MFSU of pharmaceuticals (07 05 13*)	D10	4
			Laboratory and general chemical waste	D10	13
Pfizer Ireland Pharmaceuticals	P0013-04	Chemicals	Solvents	R2	3,253
Pfizer Ireland Pharmaceuticals	P0136-04	Chemicals	Solvents	R1	280
Roche Ireland Ltd	P0012-04	Chemicals	Solvents	R1	2,624
			Solvents (halogenated where specified)	R1	50
Schering-Plough (Ireland) Company	P0015-05	Chemicals	Solvents	R1	2,124
Smithkline Beecham (Cork) Ltd	P0004-03	Chemicals	Solvents	D10	2,149
				R2	76
			Solvents (halogenated where specified)	D10	234
Swords Laboratories	P0014-04	Chemicals	Solvents	R2	776
			Solvents (halogenated where specified)	R2	296

Facility name	IPPC Register No.	Principal class of IPPC activity	Waste type	Recovery/ disposal code ¹⁰¹	Quantity treated (t)
Swords Laboratories trading as Bristol Myers Squibb Cruiserath	P0552-02	Chemicals	Solvents	R2	1,039
			Solvents (halogenated where specified)	D10	4,707
				D8	5.8
				R2	46
Temmler Ireland Ltd	P0813-02	Surface Coatings	Solvents	R2	1,147
			Solid wastes from MFSU of pharmaceuticals (07 05 13*)	R3	287
(Source: IPPC PRTR and Annual Environmental Reports)				Total	68,100

An Ghníomhaireacht um Chaomhnú Comhshaoil

Is í an Ghníomhaireacht um Chaomhnú Comhshaoil (EPA) comhlachta reachtúil a chosnaíonn an comhshaol do mhuintir na tíre go léir. Rialaímid agus déanaimid maoirsiú ar ghníomhaíochtaí a d'fhéadfadh truailliú a chruthú murach sin. Cinntímid go bhfuil eolas cruinn ann ar threochtaí comhshaoil ionas go nglactar aon chéim is gá. Is iad na príomhnithe a bhfuilimid gníomhach leo ná comhshaol na hÉireann a chosaint agus cinntiú go bhfuil forbairt inbhuanaithe.

Is comhlacht poiblí neamhspleách í an Ghníomhaireacht um Chaomhnú Comhshaoil (EPA) a bunaíodh i mí Iúil 1993 faoin Acht fán nGníomhaireacht um Chaomhnú Comhshaoil 1992. Ó thaobh an Rialtais, is í an Roinn Comhshaoil, Pobal agus Rialtais Áitiúil.

ÁR bhFREAGRACHTAÍ

CEADÚNÚ

Bíonn ceadúnais á n-eisiúint againn i gcomhair na nithe seo a leanas chun a chinntiú nach mbíonn astuithe uathu ag cur sláinte an phobail ná an comhshaol i mbaol:

- áiseanna dramhaíola (m.sh., líonadh talún, loisceoirí, stáisiúin aistrithe dramhaíola);
- gníomhaíochtaí tionsclaíocha ar scála mór (m.sh., déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta);
- diantalmhaíocht;
- úsáid faoi shrian agus scaoileadh smachtaithe Orgánach Géinathraithe (GMO);
- mór-áiseanna stórais peitreal;
- scardadh dramhuisce;
- dumpáil mara.

FEIDHMIÚ COMHSHAOIL NÁISIÚNTA

- Stiúradh os cionn 2,000 iniúchadh agus cigireacht de áiseanna a fuair ceadúnas ón nGníomhaireacht gach bliain
- Maoirsiú freagrachtaí cosanta comhshaoil údarás áitiúla thar sé earnáil - aer, fuaim, dramhaíl, dramhuisce agus caighdeán uisce
- Obair le húdaráis áitiúla agus leis na Gardaí chun stop a chur le gníomhaíocht mhídhleathach dramhaíola trí chomhordú a dhéanamh ar líonra forfheidhmithe náisiúnta, díriú isteach ar chiontóirí, stiúradh fiosrúcháin agus maoirsiú leigheas na bhfadhbanna.
- An dlí a chur orthu siúd a bhriseann dlí comhshaoil agus a dhéanann dochar don chomhshaol mar thoradh ar a ngníomhaíochtaí.

MONATÓIREACHT, ANAILÍS AGUS TUAIRISCIÚ AR AN GCOMHSHAOIL

- Monatóireacht ar chaighdeán aer agus caighdeáin aibhneacha, locha, uiscí taoide agus uiscí talaimh; leibhéal agus sruth aibhneacha a thomhas.
- Tuairisciú neamhspleách chun cabhrú le rialtais náisiúnta agus áitiúla cinntí a dhéanamh.

RIALÚ ASTUITHE GÁIS CEAPTHA TEASA NA HÉIREANN

- Caimníochtú astuithe gáis ceaptha teasa na hÉireann i gcomhthéacs ár dtiomantas Kyoto.
- Cur i bhfeidhm na Treorach um Thrádáil Astuithe, a bhfuil baint aige le hos cionn 100 cuideachta atá ina mór-ghineadóirí dé-ocsaíd charbóin in Éirinn.

TAIGHDE AGUS FORBAIRT COMHSHAOIL

- Taighde ar shaincheisteanna comhshaoil a chomhordú (cosúil le caighdeán aer agus uisce, athrú aeráide, bithéagsúlacht, teicneolaíochtaí comhshaoil).

MEASÚNÚ STRAITÉISEACH COMHSHAOIL

- Ag déanamh measúnú ar thionchar phleananna agus chláracha ar chomhshaol na hÉireann (cosúil le pleananna bainistíochta dramhaíola agus forbartha).

PLEANÁIL, OIDEACHAS AGUS TREOIR CHOMHSHAOIL

- Treoir a thabhairt don phobal agus do thionscal ar cheisteanna comhshaoil éagsúla (m.sh., iarratais ar cheadúnais, seachaint dramhaíola agus rialacháin chomhshaoil).
- Eolas níos fearr ar an gcomhshaol a scaipeadh (trí cláracha teilifíse comhshaoil agus pacáistí acmhainne do bhunscoileanna agus do mheánscoileanna).

BAINISTÍOCHT DRAMHAÍOLA FHORGHNÍOMHACH

- Cur chun cinn seachaint agus laghdú dramhaíola trí chomhordú An Chláir Náisiúnta um Chosc Dramhaíola, lena n-áirítear cur i bhfeidhm na dTionscnamh Freagrachta Táirgeoirí.
- Cur i bhfeidhm Rialachán ar nós na treoracha maidir le Trealamh Leictreach agus Leictreonach Caite agus le Srianadh Substaintí Guaiseacha agus substaintí a dhéanann ídiú ar an gcrios ózóin.
- Plean Náisiúnta Bainistíochta um Dramhaíl Ghuaiseach a fhorbairt chun dramhaíl ghuaiseach a sheachaint agus a bhainistiú.

STRUCHTÚR NA GNÍOMHAIREACHTA

Bunaíodh an Ghníomhaireacht i 1993 chun comhshaol na hÉireann a chosaint. Tá an eagraíocht á bhainistiú ag Bord lánaimseartha, ar a bhfuil Príomhstiúrthóir agus ceithre Stiúrthóir.

Tá obair na Ghníomhaireachta ar siúl trí ceithre Oifig:

- An Oifig Aeráide, Ceadúnaithe agus Úsáide Acmhainní
- An Oifig um Fhorfheidhmiúchán Comhshaoil
- An Oifig um Measúnacht Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáide

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag ball air agus tagann siad le chéile cúpla uair in aghaidh na bliana le plé a dhéanamh ar cheisteanna ar ábhar inní iad agus le comhairle a thabhairt don Bhord.

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