THE CIRCULAR ECONOMY PROGRAMME

The Driving Force for Ireland's Move to a Circular Economy

Circular Economy and Waste Statistics Highlights Report 2021

EPA Circular Economy Programme

epa Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Rialtas na hÉireann
Government of Ireland

Contents

Circular Economy and Waste Statistics

The EPA is responsible for compiling national statistics on circular economy activities and the generation and management of waste in the Republic of Ireland.

National circular economy and waste statistics are prepared to fulfil a number of statutory European and international reporting obligations including:

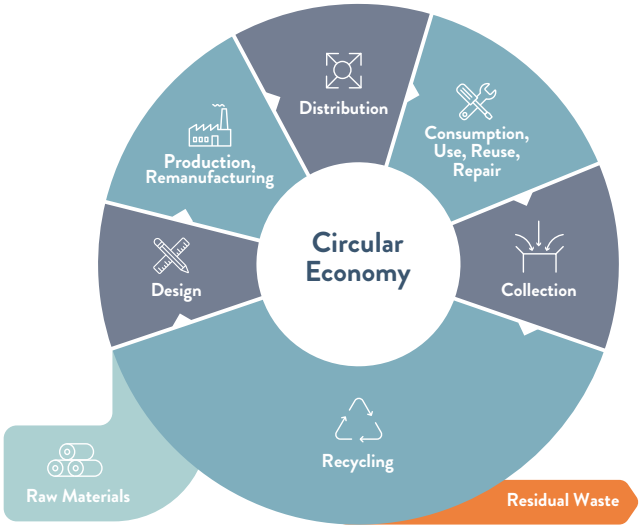
- the EU Waste Framework Directive (2008/98/ EC as recast by 2018/851/EC);
- the EU Waste Statistics Regulation (2150/2002/ EC as amended);
- EU producer responsibility initiative directives: the Packaging Directive, WEEE Directive and ELV Directive.

National circular economy and waste statistics are also used for a number of other important functions such as:

- Tracking the effectiveness of policies in transitioning Ireland from a linear to a circular economy;
- Calculating the contribution of the waste sector to Ireland's Greenhouse Gas (GHG) emissions;
- Supporting waste enforcement activities; and
- Informing the public about trends in waste generation and treatment.

This report highlights the key findings from the 2021 circular economy and waste statistics data published on the EPA website. For more detailed information on individual waste streams and the latest available data for Ireland, please see here: LINK

The report has a new spotlight section which highlights recent studies and upcoming issues in the EPA's Circular Economy Programme; a list of actions for Industry, Local Government and Individuals to take, along with an update on actions identified in the National Waste Statistics Summary Report for 2020.



National Circular Economy and Waste statistics are prepared to fulfil a number of statutory European and international reporting obligations.

This report highlights the key findings from the 2021 waste statistics data.

Circular Economy and Waste Data Highlights

A total of **17.6 million tonnes** of waste was generated in Ireland in 2021. This equates to 3.5 tonnes per person per year or 9.6 kg of waste per person per day.

1.2 million tonnes or **38%** of all Municipal waste was exported for treatment in 2021.

This includes **800,000 tonnes** of municipal waste exported for recycling and **382,000 tonnes exported** for energy recovery through incineration.

69% of all Packaging waste recycled was sent abroad for recycling.

9 million tonnes of **Construction and Demolition** waste was generated in 2021. An increase of **10%** since 2020.

Packaging waste generation increased by **9%** to **1.2 million tonnes** in 2021. The recycling rate for Packaging waste decreased from 62% in 2020 to **58%** in 2021.

3.17 million tonnes of **Municipal Waste** was generated in 2021, this is relatively unchanged from 3.2 million tonnes in 2020. **41%** of Municipal waste was recycled in 2021, the same level as in 2020.

A total of **1.84 million tonnes** of **household waste** was generated in Ireland in 2021. This equates to just over one tonne, or 200 black bags worth of waste generated per household per year.

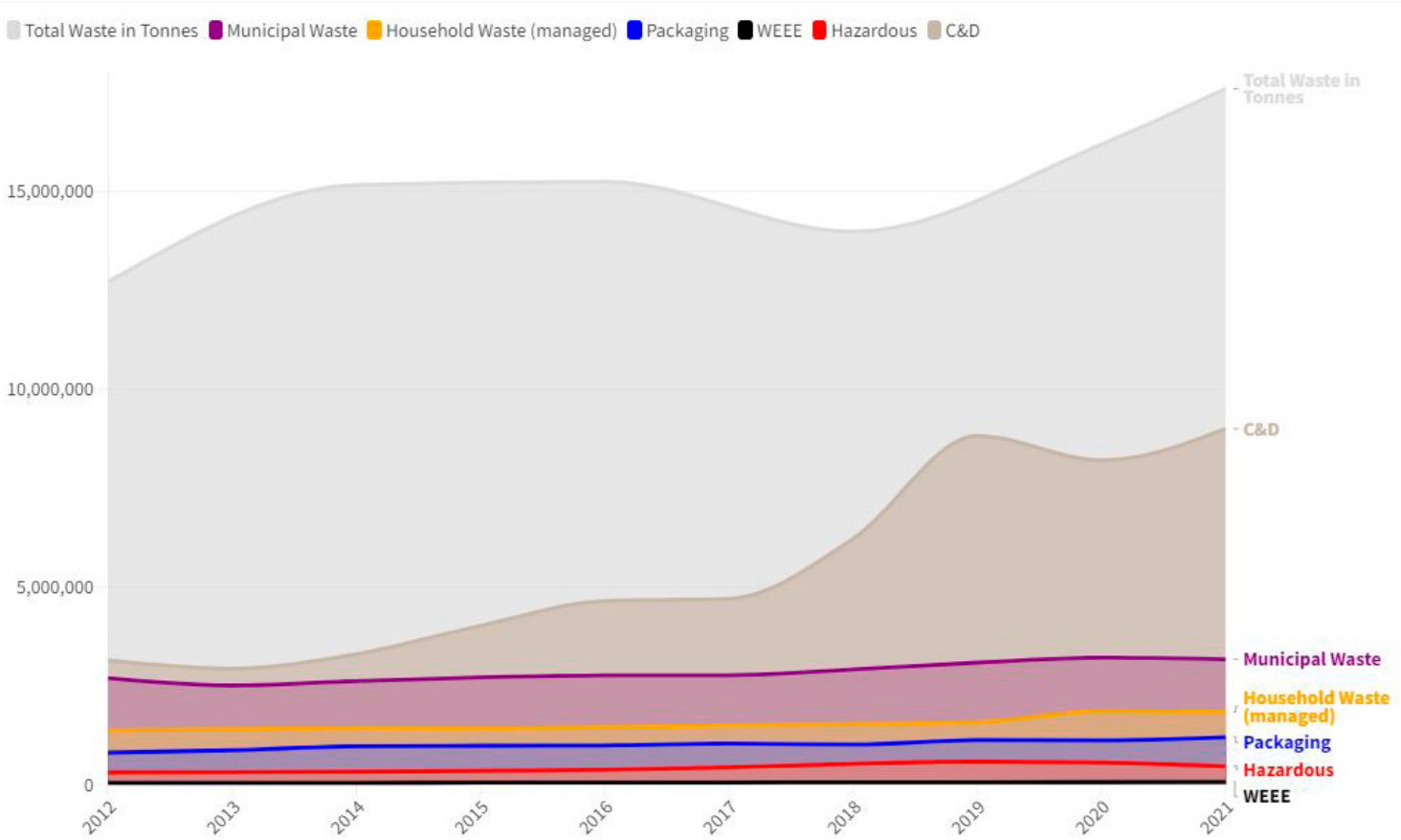
A record **72,000 tonnes** of Waste Electrical and Electronic Equipment **(WEEE)** were collected in 2021. This was increase of 10% overall with Business to Business (B2B) Collection up **43%**.

In 2021, the collection rate of End-of-Life Vehicles (ELVs) increased by **22.5%**.

Ireland has a **Reuse** rate of **10.6 kg per person per year**. An estimated 11.4 million items of secondhand clothing were bought or exchanged in 2021.

Circular Economy and Waste Data Highlights

Waste generation has grown steadily since 2012



Source: EPA Ireland, Created with flourish.studio

See the full graph series here:

Key Messages

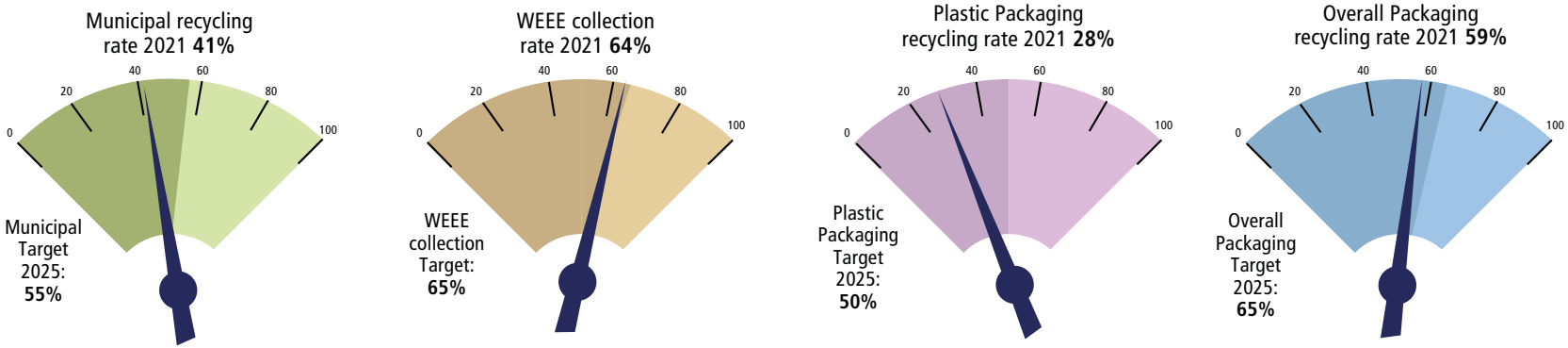
1. Ireland's economy remains predominantly linear with waste generation continuing to rise. In 2021, high levels of waste generation were recorded across key waste streams such as Construction and Demolition waste, which increased by 10% and Packaging waste which increased by 9%.

2. Recycling levels for Municipal and Packaging waste streams cannot keep pace with waste generation levels, undermining our efforts to improve our performance. For example, since 2016, Packaging waste has risen by 25% whilst the recycling rate for packaging has risen by a third of that at just 8%. As a result, Ireland is on course to miss EU waste recycling targets for municipal, total packaging and plastic packaging wastes for 2025 as shown by the graphic below.

3. To have any prospect of meeting the upcoming 2025 recycling targets, we need to focus our efforts to reduce waste generation and improve the source segregation of wastes to support recycling. As the latest waste characterisation report shows, households and businesses are not segregating wastes correctly and many do not have a separate organic waste bin. There is a significant opportunity to improve recycling through awareness and enforcement of waste segregation practices with urgent rollout of organic waste bins to households and businesses needed.

4. Ireland is heavily reliant on exporting our waste for final treatment overseas. National capacity to treat residual non-hazardous and hazardous wastes need to be developed to build resilience and reduce our dependence on treatment facilities in Europe.

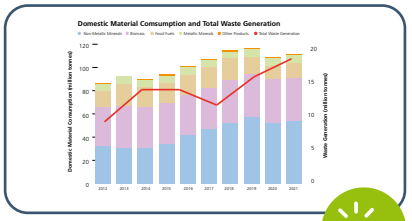
2021 recycling and recovery rates and targets in Municipal, WEEE and Packaging waste



Material Consumption and Circularity

- The amount of waste we generate as a society is a direct consequence of our consumption of materials, products, food and other items.
- Currently, Ireland is stuck in a linear economy where increasing material consumption leads to a corresponding increase in waste generation. This can be seen in the bar chart on the right, where CSO figures[1] on domestic consumption of different material categories in the Irish economy since 2012 show a direct correlation between rising material consumption and increased waste generation.
- In a circular economy, the aim is to minimise the consumption of new and virgin materials and increase reuse and the use of secondary or recycled materials.
- The Circular Economy diagram on the right shows a number of ways in which this can be done, including:
  - Sustainable product design;
  - Increased resource efficiency;
  - Sustainable material consumption;
  - Extending use of products through reuse, repair and repurposing; and
  - Utilising waste as a resource.
- The Circular Material Use Rate (CMUR) is an environmental indicator which measures the proportion of the total amount of material used in the economy which is recycled waste or secondary materials.
- Ireland currently has the third lowest CMUR rate in Europe at 2% (the EU average is 12%).
- Ongoing EPA-funded research, undertaken by the Rediscovery Centre, is investigating the underlying causes behind this, results are due to be published in 2024. For more info see here: LINK

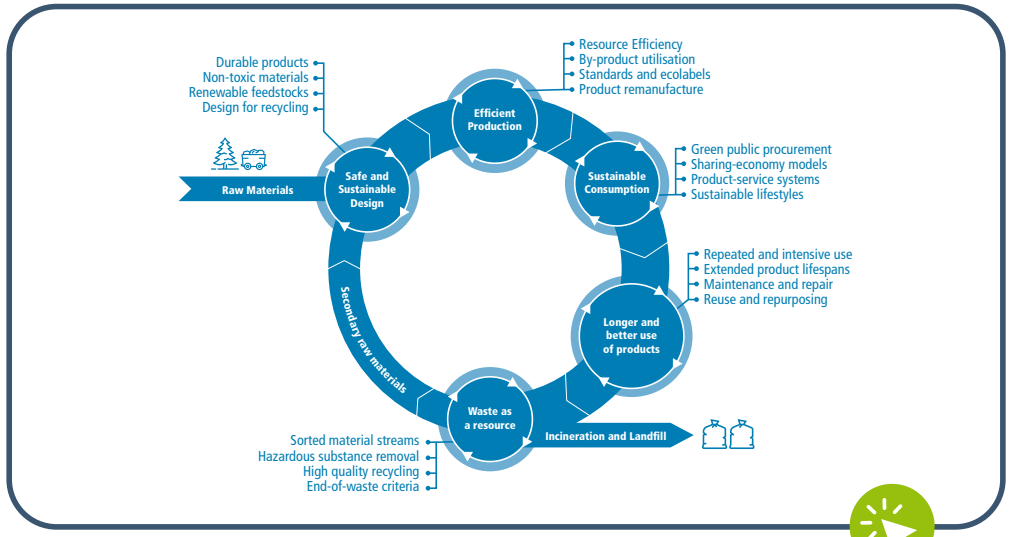
Domestic Consumption rate and Waste generation in Ireland 2012-2021



Click to view chart

Read more on the CMUR indicator here

Circular Economy Diagram. Source: European Environment Agency



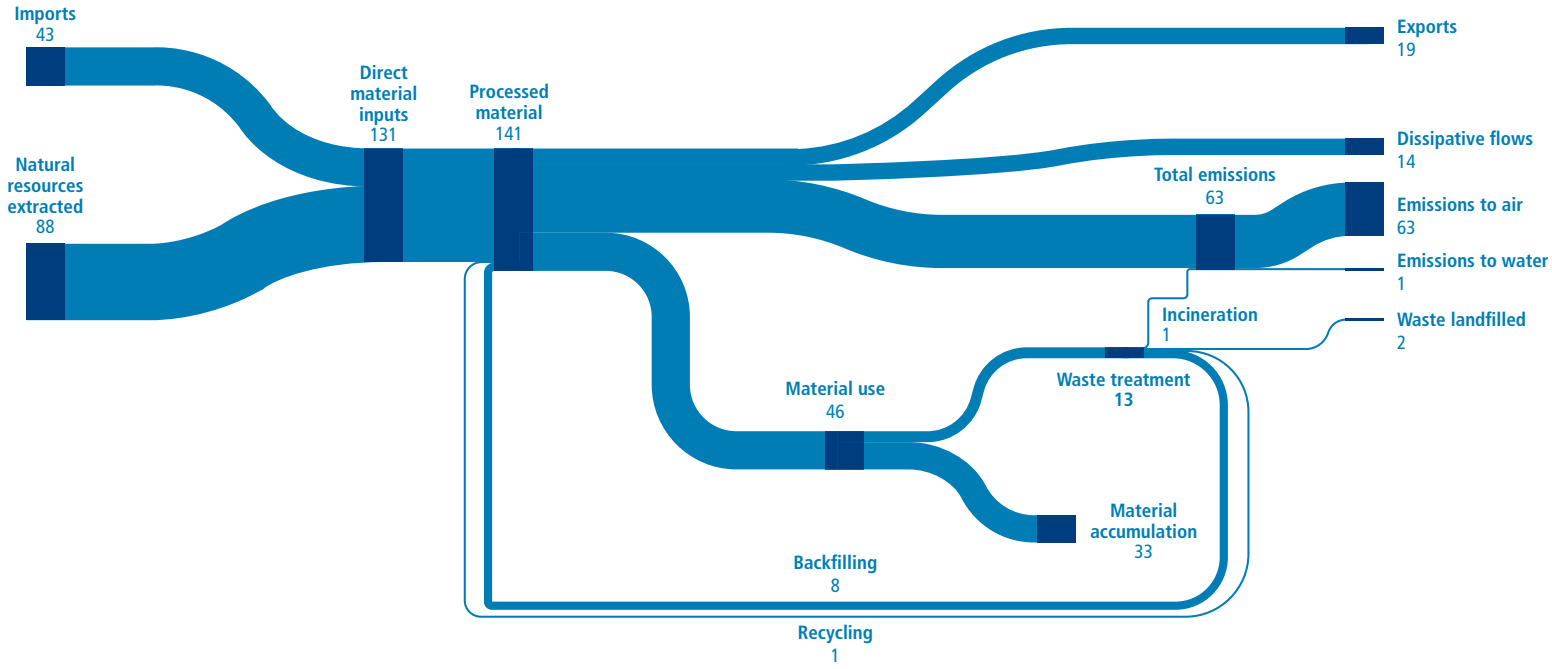
Click to view chart

1 https://www.cso.ie/en/releasesandpublications/ep/p-mfa/materialflowaccounts2021/

Material Consumption and Circularity

- The lack of circularity in our economy is further highlighted by the EUROSTAT material flow diagram for Ireland shown in the graphic below. This shows the flow of materials through the Irish economy on an annual basis including materials that are recycled or recovered back into the economy in the circular loop at the bottom of the chart.
- According to the CSO, in 2021 141 million tonnes of materials were consumed by the Irish economy. This includes:
  - 88 million tonnes of extracted materials;
  - 43 million tonnes of imported materials;
  - 8 million tonnes of materials recovered by backfilling; and
  - 1 million tonnes from materials recycled in Ireland

Material Flow diagram for Ireland 2021. Source: EUROSTAT

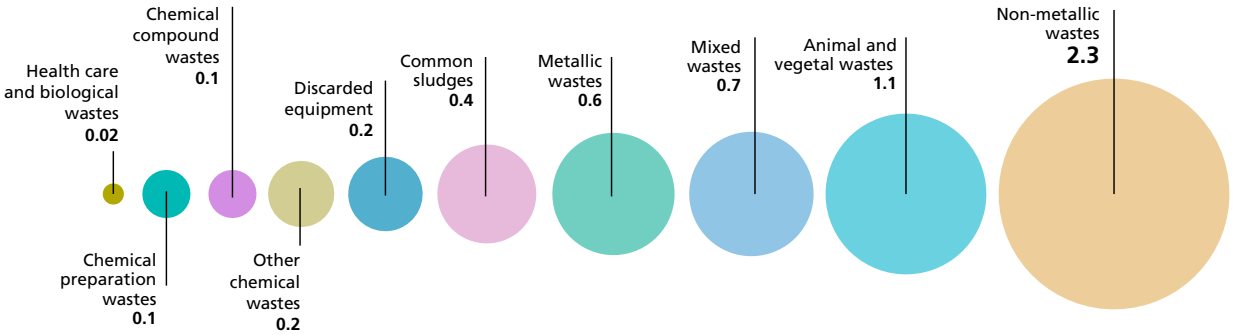


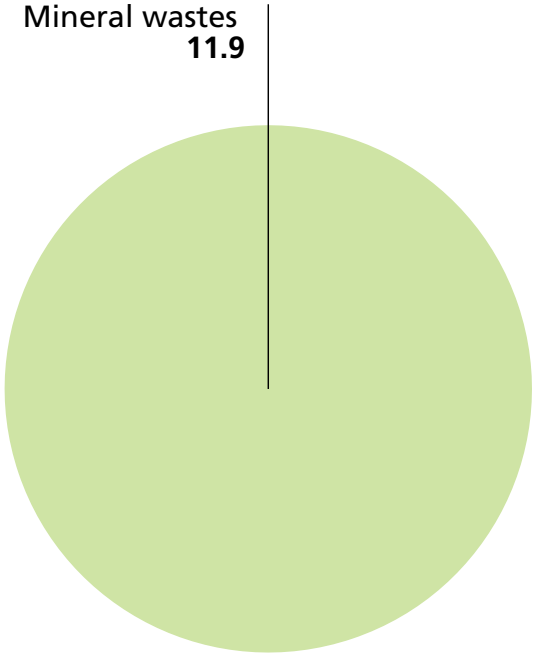
Click here to see the full EUROSTAT data timeseries and for more information on the material sources, flows and stages

Waste Generation

- Waste generation refers to the total tonnage of waste that is disposed of and enters the waste management system in Ireland each year.
- The EPA estimates that 17.6 million tonnes of waste was generated in Ireland in 2021.
- 2021 is the first year that the EPA can provide a breakdown by material type using European Waste Code (EWC). This is a change from the previous approach of using biennial CSO waste generation figures, based on scaled-up waste survey data.
- **Mineral Wastes** are the largest waste material type, accounting for just under **12 million** tonnes or **66%** of all waste generated and includes:
  - Soil waste - 7.6 million tonnes;
  - Naturally occurring minerals (e.g. waste gravel, crushed rock, sand and clays) - 3.25 million tonnes;
  - Concrete blocks and gypsum waste - 600,000 tonnes, and
  - Slag and ash from thermal treatment - 135,000 tonnes.
- Non-metallic wastes accounts for 2.3 million tonnes or 13% of all waste generated and includes many common materials such as:
  - Paper and cardboard wastes - 814,000 tonnes;
  - Plastic wastes – 542,000 tonnes;
  - Wood wastes - 448,500 tonnes; and
  - Textile wastes - 238,000 tonnes
- Animal and vegetal wastes, mainly derived from food preparation activities, account for 1.1 million tonnes or 6% of all waste.
- Mixed wastes which includes sorting residues, street sweepings and other undifferentiated wastes, accounts for 700,000 tonnes.
- Metallic wastes which includes aluminum, copper, lead and other metal wastes account for 600,000 tonnes of waste generated.
- For more information on this approach and the waste material categories see here Waste Generation | Environmental Protection Agency (epa.ie)

Total tonnes (million) of waste generated in Ireland in 2021 per EWC material type





Waste Treatment and Exports

Waste treatment refers to the processes involved in the recovery or disposal of waste. The preferred order of treatment to reduce and manage waste is shown in the waste treatment hierarchy on the right. These include:

- Recycling: Where waste is correctly segregated into its constituent materials, these materials (e.g., plastics, cardboard & metals) can be recycled or prepared for reuse. Recycling includes treatment through composting and anaerobic digestion.
- Thermal treatment: The incineration of waste in either municipal incinerators or cement kilns in Ireland or abroad, with recovery of the energy generated.
- Disposal: Where materials are unsuitable for recovery through recycling or thermal treatment they are disposed of at landfill.

42% of Municipal waste was treated by energy recovery through incineration in 2021. 382,000 tonnes or 29% of this was exported for incineration. 70% of plastic packaging was incinerated.

For the second year in a row, the Municipal waste recycling rate was 41% in 2021. This must reach 55% by 2025. The packaging recycling rate dropped again in 2021 to 58% (decrease from 62% in 2020).

The total quantity of waste recovered through recycling or composting has increased but not fast enough to keep up with the increasing waste generation rates. For example, packaging waste has increased three times faster than the packaging recycling rate since 2016.

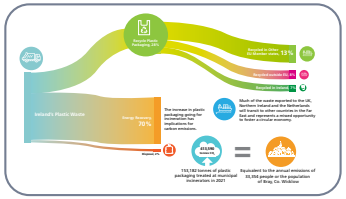
The WEEE collection rate was 64% in 2021 (increase from 60% in 2020). While there was a positive increase Ireland still narrowly missed the EU target of 65%.

590,000 tonnes of waste was accepted for treatment at composting and anaerobic digestion facilities in 2021. This is a minor decrease from 2020 (597,000 tonnes).

Ireland continued to rely on export for treating a number of key waste streams in 2021.

- 38% of municipal waste was exported for final treatment.
- Only 31% packaging waste was recycled in Ireland (mainly glass and wood).
- 28% of waste treated by composting/anaerobic digestion took place in Northern Ireland.
- 2021 is the first year in which more hazardous waste was treated in Ireland than was exported for treatment: 52% of hazardous waste was treated in Ireland and 48% exported.

Focus - How We Manage Our Plastic



Click to view chart

Waste Treatment Hierarchy

Click to view chart

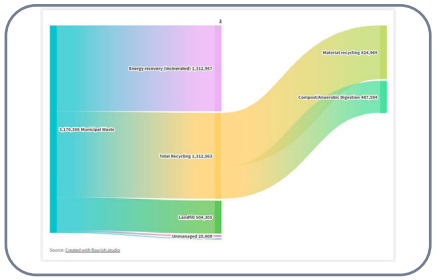
Ireland continued to rely on export for treating a number of key waste streams in 2021.

Municipal Waste

- Municipal Waste is the waste we all produce everyday in our homes, offices, businesses and schools. It includes household and non-household (commercial) waste.
- It includes:
  - Mixed municipal residual waste – this is unsegregated general waste that cannot be recycled.
  - Mixed municipal recyclable waste – e.g. clean glass, plastic, paper, cardboard and metals.
  - Municipal biowaste – Organic Food and garden waste, usually collected through a brown bin service.
  - Bulky municipal waste such as broken furniture, carpets, toys etc. that do not fit into a wheelie bin and are disposed of through a skip hire service of brought to a civic amenity site.
  - Waste Electrical and Electronic Equipment (WEEE), such as portable electronic devices and home appliances.
- Ireland generated **3.17 million tonnes** of municipal waste in 2021, a slight decrease of just under 1% from 3.2 million tonnes in 2020.
- Of this, fifty-seven per cent came from households and forty-three per cent came from commercial and public service sources.
- Just over 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2021, resulting in a recycling rate of **41 per cent**. The recycling rate remains unchanged from 2020 and indicates that we face significant challenges to meet the upcoming EU recycling targets of 55% by 2025 and 65% by 2035.
- The proportion of municipal waste sent to landfill also remains unchanged at 16%.
- 332,000 tonnes of municipal biowaste was treated through composting or anaerobic digestion, an increase of 10%.
- Municipal waste has grown by 14.8% since 2016. Over the same period, the quantity of materials treated by recycling has increased at a similar level of 15.8% (just under 180,000 tonnes). This shows that recycling rate have stagnated and we are failing to make in-roads towards upcoming EU recycling targets from 2025.

For more info see: Municipal | Environmental Protection Agency (epa.ie)

Municipal Waste Treatment Types in 2021



Click here to view chart:

Just over 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2021.

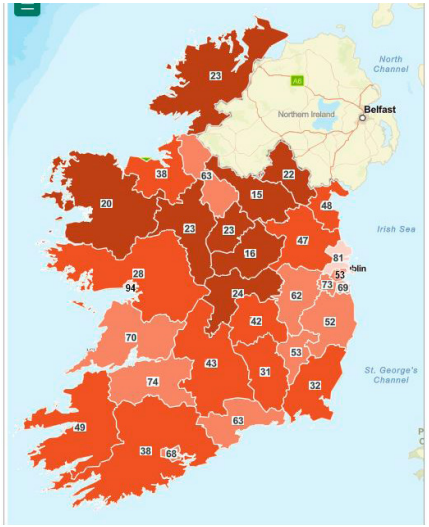
Ireland generated 3.17 million tonnes of municipal waste in 2021.

Household Waste

- Household waste includes all waste (general, recyclables and organic waste) which is either collected directly from households or brought by householders to waste collection centers such as bring banks, civic amenity sites, and pay-to-use compactors.
- **1.84 million tonnes** of household waste was generated in Ireland in 2021.
- An estimated 33,000 tonnes of this was unmanaged waste i.e., not disposed of in the correct manner above.
- On average, each household in Ireland generated approximately one tonne of waste in 2021. This equates to 200 black bags of mixed waste per household or 73 bags per person.
- There was a relatively minor decrease of 2.65% of household waste generated in 2021 compared to 2020. However, the previous year, 2020, saw a significant (18%) increase in household waste generation from 2019 levels, due to COVID-19 restrictions and the shift to working from home.
- 69% of Irish households who had a kerbside bin collection service had a organic waste bin. However, there is still a strong regional variation in the rollout of organic waste bin services, with less than 25% of customers having an organic bin in some counties, as can be seen on the map on the right.
- The EPA's most recent municipal waste characterisation study found incorrect segregation of waste is still very common in household bins.
  - In 2021, 59% of household waste collected at kerbside was placed in the general waste bin. Of this, only 36% of the waste was in the correct bin with the remaining 64% could have been segregated into either the recycling, organic bin or brought to a bring centre.
  - The five most common wastes in the household general waste bin are: food waste (17%), plastics (17%), nappies (10%), textiles (9%) and paper (8%), as shown in the diagram on the right.

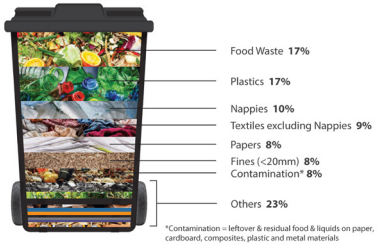
For more info see: Household | Environmental Protection Agency (epa.ie)

Map of Ireland showing the proportion of households in each local authority with an organic bin service.



Click to view map

Waste composition of household general bins



Click to view diagram

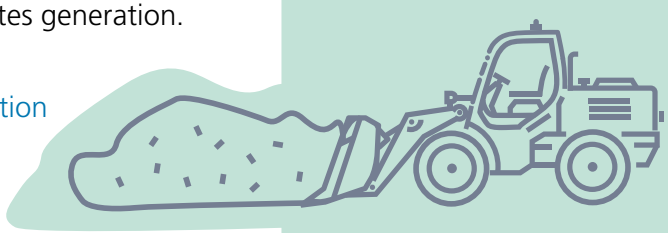
Construction and Demolition (C&D) Waste

- Construction and demolition (C&D) waste includes all the waste produced by the construction and demolition of buildings and road infrastructure.
- It contains a wide variety of materials such as concrete, bricks, wood, glass, metals and plastics.
- It is the largest waste stream in Ireland in terms of both volume and weight and accounts for more than a third of all waste generated in the EU.
- The C&D sector in Ireland generated an estimated **9 million tonnes** of waste in 2021.
- This represents a **10% increase** on the 8.2 million tonnes generated in 2020. This increase may be linked to the reopening of Construction sites in 2021 after being closed for most of 2020.
- Soil and stones made up the vast majority (85%) of C&D waste collected in 2021.
- Most C&D waste treated in Ireland was recovered by backfilling (85%), while 7% went for disposal and only 8% was recycled. The table on the right shows the breakdown of treatments type for all C&D materials.
- National end of waste (for recycled aggregates) and by-product (for road plannings) decisions will help to establish reliable and safe markets for recyclable materials, reduce the use of virgin materials and prevent construction wastes generation.

For more info see: Construction & Demolition | Environmental Protection Agency (epa.ie)

85%

Soil and stones made up the vast majority (85%) of C&D waste collected in 2021 stones



Treatment types of Construction and Demolition Waste in 2021

Treatment type	Recycling (t)	"Energy recovery (t)"	Backfilling (t)	Disposal (t)	Total
Metal waste	272,734				272,734
Segregated wood, glass & plastic	50,348	13,918	743	407	65,417
Concrete, brick, tile & gypsum	262,685	1,244	299,725	16,568	580,223
Waste Bituminous mixtures	41,150	1,505	33,449	8,527	84,631
Mixed C&D waste	398	73	88,747	34,356	123,573
Waste soils, stones & dredging spoil		34	7,251,952	450,267	7,702,253
Waste treatment residues	51,892	9,323	39,122	114,580	214,917
Total	679,208	26,098	7,713,738	624,705	9,043,749

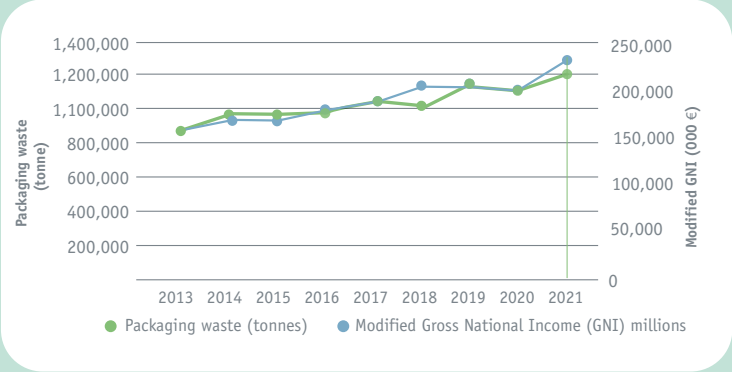
Packaging Waste

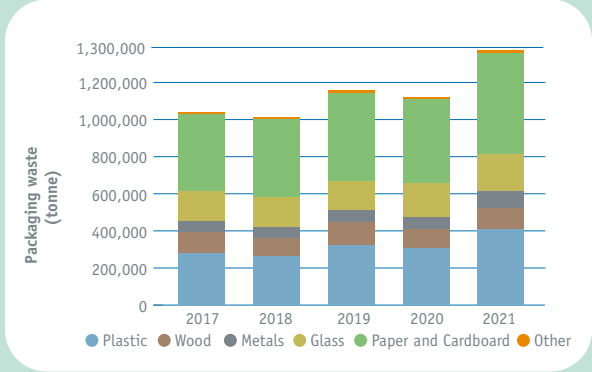
In 2021, Ireland generated 1.2 million tonnes of packaging waste.

- Packaging comes with the products we buy for our homes and businesses. It protects them during transport, keeps them fresh and provides product information. Once the products are unpacked, the packaging become waste.
- In 2021, Ireland generated **1.2 million tonnes** of packaging waste.
- This includes paper and cardboard packaging (41%), plastic packaging (30%), with smaller amounts of glass, wood, metal and textile packaging.
- 58% of all packaging waste was recycled in 2021, a decrease from 62% in 2020. Of this, 69% was exported for recycling.
- The recycling rate of packaging waste has increased by 8% since 2016. However, this is just a third of the rate of the increase in packaging waste generation (25%).
- Just under 28% of plastic packaging generated in Ireland was recycled in 2021. Only 7% was recycled in Ireland.

For more info see: Packaging | Environmental Protection Agency (epa.ie)

Packaging Waste in Ireland in 2021





For the Fifth year in a row, Ireland generated **OVER 1 MILLION TONNES** of packaging waste.

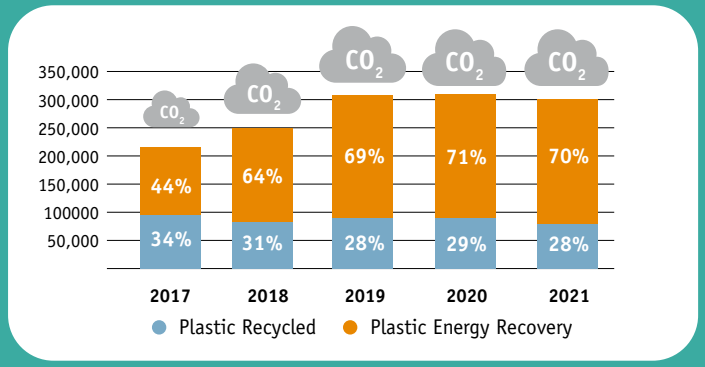
Packaging Waste

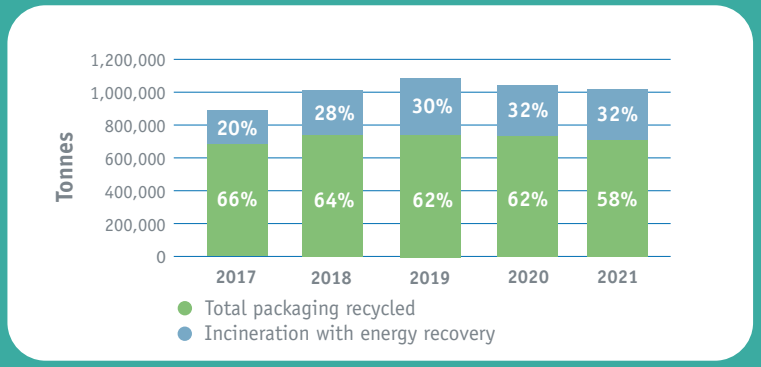
Packaging Waste in Ireland in 2021

Treatment

In 2021, almost a third of our packaging waste was sent for incineration with energy recovery. We need to divert more of this to recycling to meet our recycling targets.

The share of plastic going for energy recovery is continuing to grow, this limits progress on plastic recycling and adds to our carbon emissions.





153,182 tonnes plastic packaging treated at municipal incinerators in 2021.

413,590 tonnes CO_2

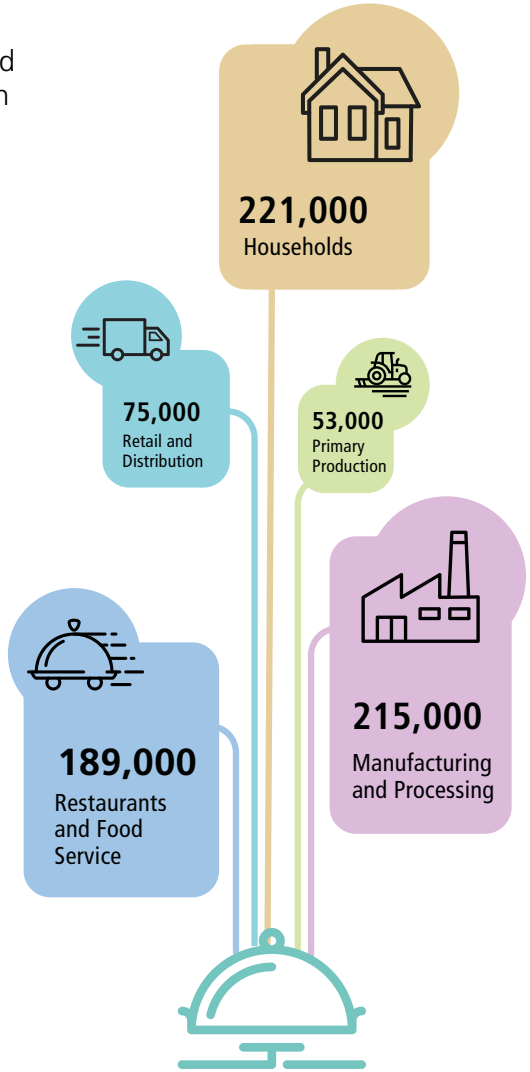
Equivalent to annual CO_2 emissions from a town the size of Bray.

Food Waste

- The European Commission defines food waste as any food that becomes waste under the following conditions:
  - It has entered the food supply chain (i.e. post harvesting)
  - It then has been removed or discarded from the food supply chain, or at final consumption stage, and
  - It is finally destined to be processed as waste.
- Member States are required to report the amount of food waste generated along the different stages of the food supply chain, shown in the graphic on the right.
- More than one quarter of the food produced globally is wasted and food waste contributes to 8-10% of global greenhouse gas emissions.
- According to EUROSTAT, Ireland has the 7th highest rate of food waste per capita in the EU at 155kg per person per year (based on 2020 data).
- The EPA estimates that Ireland generated **753,000 tonnes** of food waste in 2021.
- Households and the Food and Beverage industry were the top two sources of food waste in Ireland in 2021. These sectors contributed approximately 29% each to the total amount of food waste (221,000 tonnes and 215,000 tonnes respectively).
- The National Food Waste Prevention Roadmap 2023-2025 sets out a series of actions to deliver on Ireland's commitment to reduce food waste by 50% by 2030; also reflected in the Climate Action Plan and Food Vision 2030, in line with UN SDG 12.3.
- The EPA leads the food waste prevention programme to support national objectives to reduce food waste:
  - Stop Food Waste is the national campaign to reduce household food waste. LINK
  - The Food Waste Charter, a cross-government initiative launched in June 2023, asks organisations and businesses in the Irish food and drink sector businesses to make a public commitment to reduce food waste. LINK
  - The EPA hosts a biennial national forum on food waste bringing together business and policy leaders from across the food supply chain. The 2023 Forum was held online on 9th November 2023.

For more info see here: Food Waste Statistics | Environmental Protection Agency (epa.ie)

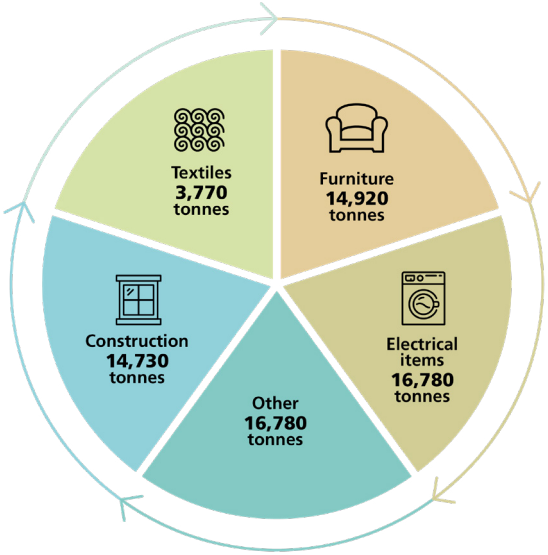
Total Food Waste (tonnes) per supply chain stage in 2021



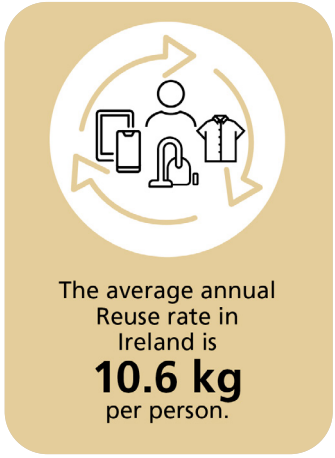
Reuse

- Reuse is where an item which is no longer used, changes ownership and is used again for the same original purpose.
- An item that is reused has not become a waste and it does not include preparation for reuse activities or recycling which are waste treatments.
- From 2021, all EU member states must report on reuse across five product categories:

Textiles | **Furniture** | **Electrical Items** | **Construction Materials** | **Other**



- In line with the common methodology, set out in Implementing Decision (EU) 2021/19, the EPA commissioned a public survey on Reuse behaviour across a representative sample of the population over a 12-month period.
- The results found that, in 2021, approximately **54,800 tonnes** of second-hand products are reused in Ireland.
- The average annual Reuse rate per person in Ireland is **10.6 kg** per person.
- **Textiles** account for **73%** of all second-hand purchases/exchanges, with approximately **11.4 million items** of second-hand clothing items reused in Ireland in 2021.
- Electrical and Electronic Equipment (EEE) accounted for the most reuse per weight at 16,800 tonnes. This includes small consumer electronic devices, personal computer equipment and home appliances.
- For more info see: Reuse | Environmental Protection Agency (epa.ie)



Other Waste Statistics

WEEE

- In 2021, a record **72,000 tonnes** of WEEE were collected in Ireland for treatment, a 10% increase from the previous year.
- The EU WEEE Directive (2012/19/EC) sets a collection target of **65%**, which Ireland narrowly missed in 2021 achieving a rate of **64%**.
- All recycling, recovery and reuse targets were met across all categories of WEEE in 2021.
- It is important to separate WEEE from general waste as they contain hazardous materials which damage the environment and human health. WEEE can be brought to recycling centres and participating retailers for free to ensure they are treated correctly.

Find out more here: WEEE | Environmental Protection Agency (epa.ie)

ELVs

- End-of-Life Vehicles (ELVs) are cars or light commercial vehicles that are no longer suitable for use and are discarded as waste.
- The EU ELV Directive (2000/53/EC) requires that each Member State meets a recovery target of **95%** and recycling target of **85%**. In 2021, Ireland met these targets achieving a recovery rate of **95.7%** and a recycling rate of **87.8%**.
- When a vehicle is no longer suitable for use, it should be brought to a vehicle recycling facility (ATF) to ensure it can be properly recycled.
- For more info on ELVS see here

Find out more here: End-of-Life Vehicles | Environmental Protection Agency (epa.ie)

Hazardous Waste

- A waste is hazardous when it can harm human health or the environment. Industrial facilities remain the largest source of hazardous waste in Ireland followed by the construction and demolition sector and then municipal sources.
- Ireland generated **467,000** tonnes of hazardous waste in 2021, a decrease of 16% from 2020.
- **148,575** tonnes of hazardous waste was treated to become non-hazardous in 2021. Waste types treated included used motor oil, healthcare wastes, sludges, laboratory and chemical waste, contaminated soils and hazardous household waste from civic amenity sites.
- In 2021, **52%** of hazardous waste was treated in Ireland, either onsite or in cement kilns. This marks the first time that more hazardous waste was treated in Ireland than exported for treatment.
- Hazardous waste demands our attention to prevent environmental pollution and protect human health. To achieve this, action is required on-site at licensed industrial facilities, off-site at local treatment centres and collaboration with international facilities.

Find out more here: Hazardous | Environmental Protection Agency (epa.ie)

Other Waste Statistics

Waste Oils

- The Waste Framework Directive requires Member States to report on waste oils for each calendar year. This is a new reporting obligation which is still in development at EU and IE level.
- The categories of waste oils that fall within the scope of this reporting include any mineral or synthetic lubrication or industrial oils which have become unfit for the use for which they were originally intended e.g. engine oils, oils for turbines and hydraulic oils.
- CSO Trade Statistics estimate that approximately **28,000 tonnes** of oils, namely mineral and synthetic lubrication and industrial oils were placed on the market in Ireland in 2021.
- Approximately **19,000 tonnes** of waste oil was separately collected in Ireland in 2021. When adjusted for imports and exports, over **21,000 tonnes** of waste oils were finally treated in Ireland and used for energy recovery in 2021.

Find out more here: Waste Oils | Environmental Protection Agency (epa.ie)

Compost and Anaerobic Digestion

- Compost waste is the treatment of organic waste material such as domestic food waste from the brown bin through aerobic composting at a waste facility.
- Anaerobic digestion (AD) is the conversion of organic waste such as food processing waste and livestock slurry by micro-organisms in the absence of oxygen into biogas and liquid digestate.
- **590,000** tonnes of waste was accepted for treatment at composting and anaerobic digestion facilities in 2021. This is a minor decrease from 597,000 tonnes in 2020.
- 28% of waste treated by composting/ anaerobic digestion took place in Northern Ireland.
- Ideally all organic waste should be segregated at source and collected separately in a brown bin system so it can be treated by composting or anaerobic digestion rather than disposal at landfill.

Find out more here: Composting & Anaerobic | Environmental Protection Agency (epa.ie)

BMW

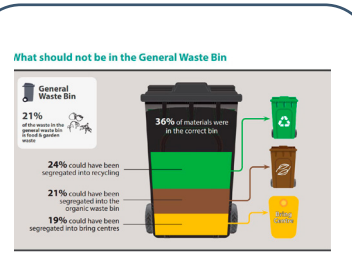
- Biodegradable municipal waste (BMW) comprises elements of municipal waste that will rot or degrade biologically e.g. food waste, garden waste and waste paper and cardboard.
- The Landfill Directive (1999/31/EC) sets targets for the diversion of BMW from landfill.
- **109,400 tonnes** of BMW was disposed to landfill in 2021 which is well within Ireland's current limit of 427,000 tonnes.
- However, there has been a slight increase in BMW disposed to landfill in 2021.

Find out more here: Biodegradable Municipal Waste | Environmental Protection Agency (epa.ie)

Spotlight 01: Municipal Waste Characterisation Study

- In September 2023, the EPA published the 2022 national Municipal Waste Characterisation Report. See here: LINK
- A municipal waste characterisation study looks at the composition of all waste that we put into our bins, either at home or in a commercial setting (e.g. businesses, schools and healthcare facilities).
- This data is used to compile accurate national waste statistics, inform circular economy policies and enable effective waste management planning.
- **Key findings:**
  - Overall, there has been little change in the composition of Ireland's municipal waste since 2018.
  - Incorrect segregation of waste is still common across all households and business sectors with 65% of all collected municipal waste still collected in the residual (general) waste bin.
- **What is in our Household bins?**
  - Organic waste (food and garden waste) is the most prominent material accounting for 30% of all household waste.
  - Most organics (63%) were found in general waste bins, with only 32% in the correct organic brown bins.
  - Plastics (16%), paper (10%), and cardboard (6%) accounted for over 30% of household waste. The majority of these materials were found in the general bins rather than recycling bins.
  - Contamination of packaging in the recycling bin caused by food residues, cross-contamination or rain-ingress, is a significant issue and accounted for approximately 7% (80,000 tonnes) of household waste.
- **What is in Commercial bins?**
  - Organic waste is the most prominent waste material accounting for 33% of commercial waste.
  - The majority of organics (70%) were found in the general bin, with only 25% collected in an organic / brown bin services.
  - Paper (20%), plastics (15%) and cardboard (7%) accounted for over 40% of commercial waste. As with household waste, the majority of these materials were found in the general bin rather than correct recycling bin.
  - A review of segregation found poor segregation practices across the commercial sector. 69% of items in the residual bins should be in the recycling or organic waste bin.
  - 24% of items found in the recycling bins should have been in the residual or organic waste bin.

Click to view graphs



Click to view graphs

Spotlight 02: Single-Use Plastics Directive

- Single-use plastics (SUPs) are plastic products that are used once, or for a short period of time, before being disposed of. Monitoring across the EU has revealed that 10 single-use plastic items, including fishing gear, make up 70% of all marine litter on European beaches.
- The Single-Use Plastics Directive (SUPD) was adopted by the EU in 2019 and introduces a range of measures, controls, and targets to deal with these plastic products, including:
  - Market restrictions: The following single-use plastic products can no longer be placed on the market in Ireland: Cotton bud sticks, Cutlery, Plates, Stirrers, Balloon sticks, Straws, Expanded polystyrene single use food and beverage containers and all oxo-degradable plastic products.
  - Consumption reduction: Measures will be introduced to support consumption reduction for beverage cups and food containers by 2026.
  - Extended producer responsibility: Producers of tobacco products containing plastic cannot place these products on the market in Ireland unless they are a member of an Extended Producer Responsibility (EPR) scheme. The same applies to producers of balloons and wet wipes from 31st December 2024.
  - Separate collection: A Deposit Return Scheme (DRS) has been set up to help achieve the separate collection target for beverage bottles with a capacity of up to 3 litres.
  - Design obligations: By 2024 all beverage containers up to 3 litres in size must have its cap or lid attached to main part of the container. By 2025 PET bottles must contain at least 25% recycled content.
  - By 2030 Beverage bottles must contain at least 30% recycled content.
  - Labelling obligations: From 2021, producers of wet wipes, tobacco products containing plastic, sanitary items and beverage cups must ensure there is a marking on the packaging or product which signifies there is plastic in the product.
- The EPA will report on a range of SUP products as part of waste statistics from 2022 onwards, including: report on a range of SUP products including:
  - Annual placed on the market data on beverage cups and food containers to demonstrate consumption reduction.
  - Fishing gear containing plastic placed on the market and waste fishing gear collected.
  - Data on the recycled content and the separate collection rate of beverage bottles demonstrate the achievement of separate collection targets (from 2023).
  - Annual data on the post-consumption waste of tobacco products with plastic filters (from 2023).

Spotlight 03: Reuse and Repair

- The EPA Circular Economy Programme is supporting the development of the reuse and repair sector in Ireland through a number of initiatives:
  - **Delivering through Partnerships:** The EPA's Circular Economy Programme works with with other national organisations to deliver programmes and solutions for the circular economy in Ireland, including:
    - Community Resources Network Ireland and www.repairmystuff.ie
    - CIRCULÉIRE the national platform for circular manufacturing
    - The Rediscovery Centre as the National Centre for the Circular Economy
  - **Innovation & demonstration:** The EPA is supporting the development of grassroots circular economy initiatives and green social enterprises:
    - Green IT at University of Limerick
    - Cashel, Towards Zero Waste
    - Service models for bulky item reuse
    - Reuse quality mark
    - Rezero: research & implementation of deposit-return system
  - **Behavioural Insights:** EPA's Circular Economy Programme is delivering a behavioural insights series which is gathering information on public sentiment and behaviour towards reuse and repair.
  - The survey on behaviours & attitudes to textiles (2021 fieldwork) found that just 23% of people bought a second-hand item of clothing in the last 12 months.

Repair: attitudes & behaviours national survey 2022

A recent EPA survey of repair activities in Ireland showed that:

National repair skills

69% of people sew or stitch to repair clothes, and 64% do small home DIY repairs.

National appetite for repair

65% of people would like to acquire at least one new repair skill.

Circular acquisitions

38% of people have rented, leased or purchased secondhand at least one of the selected products.

Time required is the biggest challenge with self-repair

37% of those who self-repair say the length of time is the main difficulty

Top products rented, leased or bought second hand

1 in 3 young people have rented, leased or purchased a second hand coat/jacket or mobile phone.

Market for repair skills development

78% of people are repairers who indicate they could improve at least one of their repair skills.

What can I do?

We all are responsible for generating waste and have a role to play in reducing both the amount of waste generated in Ireland and improving our reuse, repair and recycling rates.

Businesses / Industry

- Commercial business, public buildings and apartment complexes need to significantly improve waste segregation on their premises. See the infographic below for tips on how this can be done.
- Food sector businesses should sign up for the national food waste charter LINK
- C&D waste can be prevented by employing best practice circular construction activities. This includes designing out waste, increase application of By-products Regulation 27 and maximising the use of resources in line with the EPA's Best Practice Guidelines for the Preparation of Resource Management Plans for Construction & Demolition Projects.

Waste Industry

The waste industry needs to:

- Provide organic waste bins to all commercial and household customers to make food waste segregation easier.
- Use targeted awareness campaigns to educate and motivate householders waste to segregate food waste.
- Implement transparent waste collection charging to incentivise and reward waste segregation and reduction.

Local Government

Local Government needs to:

- Enforce the roll-out of organic waste bins to all houses, apartments and commercial premises to improve segregation and increase recycling of municipal waste.
- Undertake compliance checks of food waste segregation, initially in the food services sector and then across all sectors.
- Improve enforcement of the construction and municipal waste sectors at all stages of the waste cycle (source, collector and facility).
- Improve access to recycling infrastructure, such as civic amenity sites and bring banks, to make it easier for householders to support segregation of special, bulky and hazardous wastes.

What the Commercial Sectors can do Improve Waste Segregation

Use different coloured bin/bags for each waste stream.

All external bins should be placed in a well designated, accessible location.

Have clear consistent signage on all bins (internal and external).

Highlight problematic wastes and provide guidance and training on how to improve/ avoid contamination.

What can I do?

Individuals

- As per the waste management hierarchy, focus first on waste prevention - reduce the amount of waste you generate as an individual and within your household.
  - Be mindful when purchasing items of the amount of packaging that product contain and whether these can be readily recycled or not. Avoid products with unnecessary and excessive packaging.
  - Where possible, buy food and other items loose (unpackaged) or through a refill service.
  - Plan your weekly meals to limit the amount of food waste that is generated in your household. See https://stopfoodwaste.ie/ for more tips.
  - Choose to reuse, repair or buy secondhand items before buying new products. See https://www.repairmystuff.ie/ to find a local repair service.
- Secondly, maintain good waste segregation practices within your household to enable effective recycling and recovery of your waste.
  - Place clean, dry and loose recyclable materials in your recycling bin. To find out what items can be recycled visit What can I recycle? | Repak
  - Place food and other organic waste in your brown bin. If your household does not have a brown bin, sign up for a service when it becomes available across the country from 2024 onwards.
  - Bring items suitable for reuse to a local charity shop or other reuse outlet. See https://crni.ie/reuse-directory/ to find a reuse outlet near you.
  - Bring bulky waste, WEEE, batteries, textiles and hazardous waste items to your local bring bank or civic amenity center.
  - All other waste should go in your general bin.
- Find out more about how to recycle your end-of-life vehicle and the location of your nearest vehicle recycler through your local authority or at elves.ie or mywaste.ie.
- Visit https://www.weeeireland.ie/household-recycling/ for information on how to dispose of and recycle Waste Electricial and Electronic Equipment.
- And lastly, if you vape, please dispose of your used vapes in WEEE Ireland battery recycling boxes!

Choose to reuse, repair or buy secondhand items before buying new products.

Bring items suitable for reuse to a local charity shop or other reuse outlet.

Actions and Updates

Read about:

The draft National Waste Management Plan for a Circular Economy

As can be seen in the data presented in this report, increasing levels of waste generation and poor levels of waste segregation continues to be a core issue that is preventing Ireland from meeting upcoming EU targets and moving towards a circular economy. In the 2021 National Waste Statistics Report, the EPA published a series of actions aimed at tackling rising waste generation and to improve the management of waste being generated. The table below gives an update on the progress of these actions from the implementation leads identified.

A new national waste management plan, co-ordinated by the Regional Waste Management Planning Offices, is due to be published in 2024. This plan aims to drive Ireland's transition to a Circular Economy, with over 80 targeted actions to achieve this over a six-year period.

No.	Circular Economy Actions	Implementation Lead	Update	Progress
1	Introduction of mandatory incentivised charging for the collection of non household municipal waste.	DECC	The Waste Management (Collection Permit) (Amendment) (No. 2) Regulations 2023 came into effect on 1 July 2023. Since then, there has been an obligation on waste collectors to provide all their commercial customers with a mixed dry recycling, biowaste and residual waste bin, and to charge fees which incentivise waste segregation as customers contracts come up for renewal.	
2	Rollout of brown bins to rural areas with no population exemptions and businesses who are currently not on a collection service.	DECC & Industry	DECC are in process of finalising legislation, which will be introduced before the end of 2023, to deliver this measure.	
3	Targeted and co ordinated awareness and education campaigns focused on improving the capture of food waste from businesses and households.	Local Government and Industry	The Local Government sector is working on a number of DECC-funded initiatives to raise awareness and improve the capture of food waste. This includes the establishment of the annual "Food Waste Recycling Week" and the distribution of over 100,000 Food Waste recycling packs to households and businesses around the country at public events, civic amenity sties and by waste collectors.	
4	Targeted enforcement campaigns to lower contamination rates in the recyclable bin.	Local Government	Working collaboratively with key stakeholders, the Local Government sector has an enforcement programme in place aimed at reducing contamination in residual and mixed dry recycling streams by driving high level of compliance amongst households and ensuring that three-bin systems are in place and being utilised appropriately at all commercial sites.	
5	A review of the effectiveness of the waste charging system to householders to incentivise and reward waste reduction and recycling.	DECC	The National Waste Collection Permit Office, with support from DECC, are commencing this review, conduct this review, which is expected to be completed by mid-2024.	

Complete In progress Little progress

Actions and Updates

No.	Circular Economy Actions	Implementation Lead	Update	Progress
6	Accelerated implementation and monitoring of the impact of eco fee modulation for the production of high quality recyclable plastic packaging.	REPAK	Eco-Fee modulation was successfully introduced for plastic packaging placed on the Irish market by Repak members in 2021.This was extended to all materials in 2022. Eco-modulated material fees are now reviewed annually.	Complete
7	Setting recycling subsidies to incentivise the collection of plastic packaging rewarding waste collectors to improve the rates of recycling of these materials.	REPAK	Funding subsidies dedicated solely to recycled plastic packaging, was increased by €2m in 2021 and recycled plastic packaging continues to attract the highest subsidy payment per tonne.	In progress
8	Examining the potential for fiscal measures to incentivise increased manufacturing and use of reusable plastic packaging and other packaging products.	REPAK	Repak and its Members incentivise reuse and recycling on the island of Ireland where possible, ahead of recycling outside the jurisdiction. In addition, Repak funds approximately €1m for plastic reprocessing for Irish based operations.	In progress
9	Targeted and co ordinated awareness and education campaigns on improving the separate capture of plastic packaging materials from businesses and households.	REPAK	In conjunction with MyWaste.ie, Repak promotes best practices for collection, separation, and recycling of packaging waste through targeted funding & media campaigns, Team Green Ambassadors, Plastic Pledge,Prevent & Save site audits and the national environmental awards – Pakman Awards – sponsored by the waste industry.	In progress
10	Completion of the national waste treatment capacity register to allow for monitoring and tracking of the capacity market.	NWCPO & EPA	EPA & LA sector are progressing the development of the national capacity register, first phase of project due for completion in 2023.	In progress
11	Assessment of the biological treatment capacity and current market to improve Ireland's self sufficiency and minimise the loss of biowaste resources to export markets.	EPA & DECC	The EPA compiles and publishes annual data on the quantity of municipal biowaste and other waste treated through composting and anaerobic digestion (AD) in Ireland. This includes the proportion of waste exported for treatment through composting or AD. The EPA are part of the national Anerobic Digestion / Biomethane working group which is chaired by DECC & DAFM.	Little progress
12	Complete business continuity and contingency assessment for the management of hazardous wastes.	EPA & DECC	The EPA has recently commenced a project to undertake a business continuity assessment for at-risk hazardous waste streams.	In progress
13	Identify opportunities to develop circular economy solutions and build resilience for the recovery of non hazardous and hazardous waste.	EPA & DECC	The EPA has delivered a national End-of-Waste decision for recycled aggregates and national by-product decision for site-won asphalt (road planings) and are progressing a national by-product decision for greenfield soil & stone. The EPA has contributed to the DECC/DAFM led National Bioeconomy Action Plan, including through research such as the EPA-funded Fast Track to Policy report titled 'Circular Bioeconomy Outlook Study 2030-2050'. DECC is currently evaluating a proposal to develop a National Centre of Excellence for Circular Innovation. The Centre would support industry to scale up circular implementation and stimulate circular innovation, thereby eliminating waste streams and reducing carbon emissions.	In progress
14	Progress work on the national contingency treatment facility	Local Government	The Local Government sector is continuing to work towards the provision of a publicly owned contingency facility and has recently completed a detailed feasibility study for this project.	In progress

Complete In progress Little progress

Access Data and Information

National Waste Statistics | Environmental Protection Agency (epa.ie)

EUROSTAT

REPAK

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