

A to Z of Waste Statistics

Anaerobic Digestion

The process of [anaerobic digestion](#) is the breakdown of organic matter by micro-organisms and enzymes in an anaerobic (oxygen-free) environment. It involves placing organic material such as food waste, sewage sludge, crops, crop waste and manure into an air-tight vessel or covered lagoon known as a digestion tank or a reactor. The organic matter is typically heated and sometimes mixed to create the optimum environment for micro-organisms to break down the organic content. The end products are biogas and digestate residue. Biogas is composed predominantly of methane (CH₄) and carbon dioxide (CO₂) – it can be used for heat and/or electricity or upgraded to biomethane and injected into the natural gas grid. Digestate residue, or simply, digestate, is composed of solid and liquid portions, and can be used as fertilizer, animal bedding, and in the production of bioplastics. Find out more [here](#).

Basel Convention-Transboundary Movement of Hazardous Waste

The Basel Convention aims to control transboundary movements of [hazardous waste](#) and to protect human health and the environment against the adverse effects resulting from the generation, management, transboundary movements and disposal of hazardous and other wastes. It was negotiated in answer to public outcry about “toxic trade” in hazardous waste that led to dumping of hazardous waste from developed countries in developing countries.

Circular Economy

In a circular economy, the materials are maintained in use for as long as possible; waste generation resource use and pollution are minimised, and when a product has reached the end of its life, it is easily used again and again to create further value.

The 2020 EU Circular Economy Action Plan focuses on accelerating the transition of Europe’s economy towards a more circular model. Ireland’s new national waste policy was published in 2020: [A Waste Action Plan for a Circular Economy](#)

The Ellen Mc Arthur Foundation has information on Circular Economy, Climate Change and the impacts of waste on our Climate: [Ellen MacArthur Foundation](#).

Circular Material Use Rate

The circular material use rate (CMUR) is the share of used material resources which came from recycled waste materials. This means that less [primary materials](#) are extracted. Ireland’s current CMUR is low and is reported by Eurostat [here](#). It is government policy to increase Ireland’s CMUR to the European average by 2030.

Composting

[Composting](#) is the breakdown of the organic (anything that was once living) waste material by micro-organisms in controlled, aerobic (oxygenated) conditions into a dark crumbly and earthy smelling material called compost. Compost is a nutrient-rich soil conditioner. Composting facilities control the oxygen and temperature of organic waste to optimise the composting process.

Construction & Demolition

The [Construction and Demolition](#) sector in Ireland generates millions of tonnes of waste each year. When correctly separated the constituent materials - soil, stone, brick, cement, tile, wood, metal, plastic – can be reused or recycled. The EPA may determine if material is a [by-product](#) and can be used elsewhere.

D Codes

[Disposal codes](#) categorize the various types of waste disposal. These codes are used by the National Waste Statistics team at the EPA to track and report on the treatment of waste in Ireland.

End-of-life vehicles (ELVs)

[End-of-life vehicles \(ELVs\)](#) currently refer to cars or light commercial vehicles weighing less than 3.5 tonnes that are no longer suitable for use and are discarded as waste. Proposed EU ELV regulations plan to gradually include vehicles such as lorries, buses, and motorcycles into the scope of ELV.

End of Waste

End of Waste is the point at which a waste material is treated to such an extent that it meets the criteria to be used as a secondary material. The use of [secondary material](#) in place of [primary raw materials](#) extracted from the earth is key to Ireland's transition to a climate neutral circular economy. Click [here](#) for more information on end of waste criteria.

Energy Recovery

Energy recovery means that when waste is burned the heat generated is captured and used as a form of energy.

Food Waste

Food waste is a global problem that has environmental, social and economic consequences. More than one quarter of food produced is wasted [globally](#). Growing, processing, and transporting food uses significant amounts of resources. Food waste is estimated to account for 8-10% of total anthropogenic greenhouse gas emissions. The urgency and challenge of addressing food waste is highlighted at international level and EU level through the UN Sustainable Development Goals and the Circular Economy Package.

The [EU aims to reduce food waste](#) by 50% by 2030 and Ireland will be required to report to the EU on food waste generated at each stage of the food supply chain from 2020. Ireland's Climate Action Plan also includes food waste as a priority waste stream and aims for a 50% reduction. The EPA aims to raise awareness of food waste and target behavioural change through its Stop Food Waste programme and Food Waste Charter. Click [here](#) for Irish Food Waste statistics.

Hazardous Waste

A waste is hazardous when it can harm human health or the environment because it is explosive, oxidising, flammable, irritant, toxic, carcinogenic, corrosive, infectious, mutagenic, sensitising, or eco-toxic. [Hazardous waste](#) is controlled by strict regulations to protect against the threat to people and the environment.

Household Waste

Household waste includes residual waste, recyclable waste and organic waste collected directly from households and it includes waste brought by householders to waste collection centres such as bring banks, civic amenity sites, pay to use compactors and landfills. Check out [Household Waste Statistics for Ireland](#) for the latest figures on household waste generated, managed and unmanaged.

Material Consumption

According to the Government's Waste Action Plan for a Circular Economy ([here](#)), at the current rate of material consumption, we will need three planets to meet our resource demands by 2050. [Secondary raw materials](#) offer an alternative to taking more products from nature and is often cheaper, better for the environment and uses less energy.

To reduce consumption, the EU's Circular Economy Action Plan ([here](#)) addresses how we consume materials and resources, how we design the products that households and businesses use, how we prevent waste generation and resource consumption and how we extend the productive life of all goods and products.

Municipal Waste

Municipal waste means household waste as well as commercial and other waste that is similar to household waste because of its nature or composition. It excludes municipal sludges and effluents. Check out [Municipal waste statistics for Ireland](#) for the latest figures on municipal waste.

Municipal Waste Characterization

Characterisation of municipal waste (household and non-household (commercial)) involves taking representative samples of each bin type and sorting the waste into different material types. The results of the most recent characterization study are available [here](#).

NTFSO

The National Trans frontier Shipment Office is the National Competent Authority for the export, import and transit of waste shipments to and from Ireland.

Organic Waste

Organic waste i.e., food and garden waste is collected in a source segregated waste brown bin collection system. The [EU Household Food Waste and Bio-Waste \(Amendment\) Regulations 2023](#) require all waste collectors to provide a brown bin for food/organic waste and garden waste and the [Waste Management \(Food Waste\) Regulations 2009](#) require separate collection of food waste from commercial premises.

Own resource tax

Each country which is a member of the European Commission will be charged based on plastic packaging waste that is not recycled. Currently each member country can choose to calculate this using placed on the market (POM) or waste generated data.

Packaging

Most of the products we buy for our homes and businesses are wrapped in packaging that protects them during transport and makes them look attractive on shop shelves. Once the goods are unpacked, the packaging becomes waste. Click [here](#) for the latest figures on packaging waste.

Packaging – Requirements on Producers

If you place more than 10 tonnes of packaging waste on the Irish market you are required to comply with [EU Packaging Regulations](#). [Repak](#) is the approved body under these Regulations.

Packaging - Essential Requirements

The Packaging Directive includes “Essential Requirements” for packaging including that packaging must be designed to be reusable and recoverable. The new Packaging Regulation will reinforce the essential requirements with the view to improving packaging design for refill and reuse and promoting high-quality recycling, as well as strengthening the enforcement of the essential requirements.

Plastic

Plastic Recycling

Plastic can be recycled; however there are a number of key [challenges](#) to high quality plastic recycling. Therefore, there tends to be a limit on the number of recycling loops it can go through because of cross contamination from the many different types of plastics and contamination due to product residues. This leads to plastic downcycling and loss to the recycling loop.

The energy demand from recycled PVC plastics, such as plastic pipes and their fittings, is typically between [45% to 90% lower](#) compared to its production from virgin raw materials. Recycling polyethylene terephthalates (PET) such as beverage bottles and similar plastics saves 83% of energy and 70% of CO₂ emissions compared to PET produced from virgin materials. Check out [Recycling List Ireland](#) for a complete list.

Plastic energy recovery

Plastic that is not recycled is sent for energy recovery. Energy recovery means that the heat from incinerating waste is captured to generate energy. Any increase in plastic going for incineration has implications for carbon emissions - for every tonne of plastic incinerated at energy recovery plants, 2.7t CO₂ is released into the atmosphere ([European Environment Agency](#)).

Furthermore, capacity for waste incineration has been mentioned as one (of many) barriers to the transition towards a more circular economy by the EEA State of the environment report 2015 (EEA, 2015) and the European Commission’s Circular Economy Action Plan (EC, 2015). See: [Plastics, the circular economy and Europe’s environment — European Environment Agency \(europa.eu\)](#).

Plastic Bag Tax

The plastic bag tax was a litter prevention initiative introduced in 2002. The levy, collected by the Irish Tax Office (Revenue), is charged at the till when a customer uses single use plastic carrier bags. Revenue pays the levy proceeds into the Circular Economy fund, which finances initiatives to reduce waste and promote the reuse and recycling of goods. The result was a 95% reduction in the consumption of single use plastic carrier bags. People now use lots of different types of reusable shopping bags. Further details [here](#).

Primary (Virgin) raw material

Virgin or primary raw material is anything extracted directly from nature without processing. Examples of virgin raw materials are timber, coal, natural gas, and metal ores. The world is using many more virgin materials than it can replenish. See [secondary raw materials](#).

R Codes

[Waste Recovery codes](#) to describe the various types of waste recycling and recovery.

Recovery

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. 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 a fuel (other than in direct incineration) or other means to generate energy) and biological recovery (e.g. composting).

Recycling

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.

Information on recyclable waste is available on [mywaste.ie](#). Information on waste operators is available at [iwma.ie](#).

Recycling – Deposit Return Scheme

Ireland is in danger of missing the 50% plastic and aluminium packaging recycling rate required by the EU by 2025 and the 2030 targets of 55% for plastic and 60% for aluminium. To tackle the shortfall, the Department of Environment, Climate and Communications have launched a Deposit Return Scheme for plastic bottles of up to three litres in volume and for aluminium cans. Find out more on the [Re-turn website](#).

The Deposit Return Scheme should assist us in meeting the 2025 recycling targets. However, it should be remembered that these are percentage recycling targets. Thus, by 2025 we must recycle 50% of the aluminium packaging we generate regardless of whether we generated one million or ten million tonnes. There are emissions involved in the production, management and recycling of each tonne of materials and so to achieve true environmental benefit we should aim to reduce the overall amount of waste we generate.

Recycling - Metals

The benefit of aluminium recycling over plastic recycling is that aluminium is a pure stream and can be recycled over and over again because it is melted and reformed without any loss of quality. Contamination of aluminium packaging with food or other products is not difficult to manage because it burns off in the melting process. In addition, recycling aluminium saves about 95% of the energy used to make aluminium from raw materials. Visit [alupro Ireland](#) for more information.

We know from EPA's [Municipal Waste Characterisation Studies](#) that there is additional metal in the residual waste bins of households and businesses. Some material recovery facilities can identify and segregate certain types of metals in the residual waste bin and then send it on for recycling.

Reusable packaging

Overall, the best packaging choice is to incentivise the use of reusable packaging by offering an incentive for customers to return and refill and reuse packaging.

Reuse

Reduce, Reuse, Recycle! While reducing consumption (and thus reducing waste) should be our main priority, reusing products instead of throwing them out is also a very important step in reducing waste. Reusing and re-purposing products will encourage a shift toward more conscious consumption and encourage companies to produce more durable and long-lasting products that can endure as many cycles as possible. To learn more about the reuse sector, check out [Research 405: Qualifying and Quantifying the Reuse Sector in Ireland](#) and the [Clean Technology Centre Q2REUSE](#).

Secondary raw (post-consumer) materials

Secondary raw materials are recycled materials that have undergone all necessary checking and sorting (i.e., [End-of-Waste](#)) to ensure they can be used in manufacturing processes in place of and fulfilling the same role as a non-waste derived primary raw materials.

Examples include glass cullet from recycled glass bottles and jars, and recycled road plannings that can be used to resurface roads. The Irish government have a [Waste Action Plan for a Circular Economy](#) which includes plans to increase the use of secondary materials, thereby increasing Irelands circular material use rate.

Textiles

The EPA analyze the amounts and types of municipal waste collected at kerbside. The percentage of textiles included in municipal waste can be seen [here](#).

Tyres

The latest Waste Tyre release which can be found [here](#).

Waste Characterisation Studies

The EPA carries out regular waste characterisation studies to provide up-to-date information on the composition of the waste we generate in Ireland. The outputs from EPA Characterisation Studies can be found on the [EPA website](#).

WEEE - Waste Electrical Electronic Equipment

[Waste electrical and electronic equipment \(WEEE\)](#) is one of the fastest growing waste streams worldwide, and one of the most hazardous if not managed properly. It includes everything from discarded household appliances (such as fridges) to electronic devices (such as computers and mobile phones). The WEEE Directive (2012/19/EC) aims to ensure that WEEE is collected and managed in an environmentally friendly way. Reuse and recycling targets for WEEE are set by the [EU WEEE Directive](#).