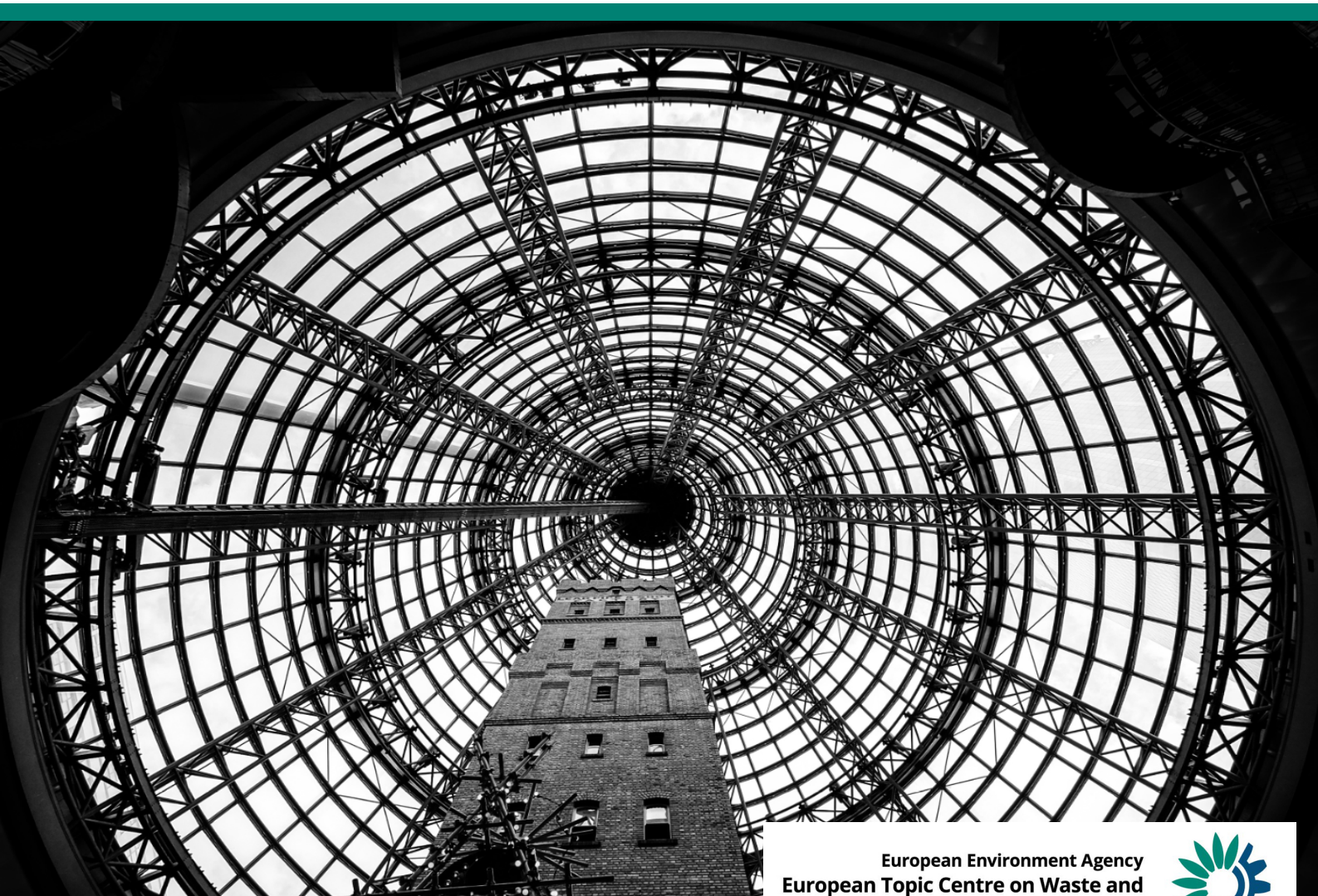


Resource efficiency and circular economy in Europe – even more from less

An overview of policies, approaches and targets of Ireland in 2018



European Environment Agency
European Topic Centre on Waste and
Materials in a Green Economy



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European Topic Centre on Waste and Materials
in a Green Economy
Boeretang 200
BE-2400 Mol
Tel.: +14 33 59 83
Web: wmge.eionet.europa.eu
Email: etcmwge@vito.be

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Acknowledgements

This country profile is based on information reported by the Eionet network and, in particular, the National Reference Centres on Resource Efficiency and Circular Economy. The information is current as of March 2019, when members of Eionet verified the content of this profile.



This country profile was prepared as part of the 2019 EEA review of material resource efficiency, circular economy and raw material supply policies, which aimed to collect, analyse, and disseminate information about experience with the development and implementation of these policies in EEA member and cooperating countries.

At the time of writing, a summary report is being finalised. The report reflects on trends, similarities and differences in policy responses, showcases selected policy initiatives from member countries and identifies possible considerations for the development of future policies.

These country profiles were compiled and finalised by members from the European Topic Centre on Waste and Materials in a Green Economy, namely Bart Ullstein, Bettina-Bahn Walkowiak, Jeroen Gillabel, Margareta Wahlström, Jutta-Laine Ylijoki, Dirk Nelen, Theo Geerken, Veronique Van Hoof and Evelien Dils. The responsible EEA project managers for the work were Pawel Kazmierczyk and Daniel Montalvo.

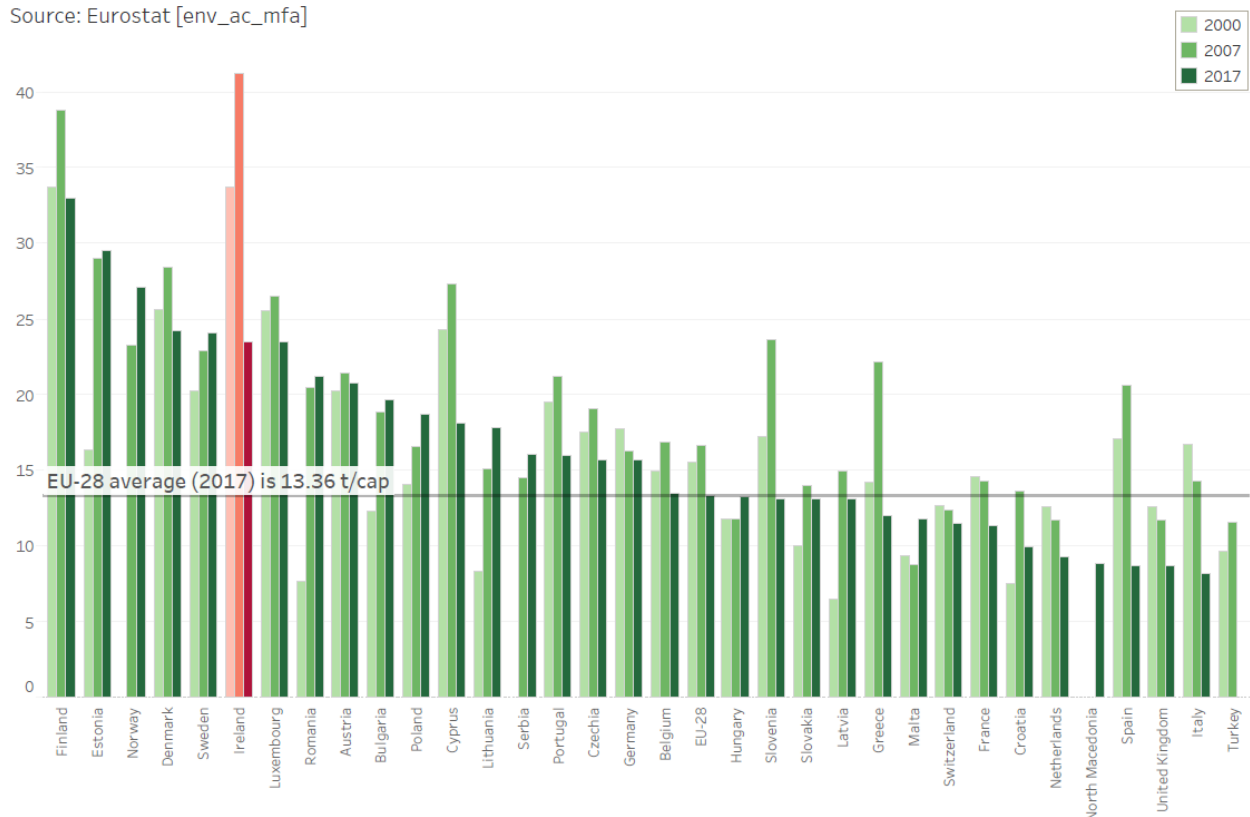
Ireland, facts and figures

Note: data in this section was sourced from Eurostat databases, except where noted otherwise

| | |
|---|--|
|  | GDP: EUR 294.1 billion (1.9 % of total EU28 in 2017) |
|  | Per capita GDP: EUR 61,200 (purchasing power standard) (203.9 % of EU28 average per capita figure in 2017) |
| | Use of materials (domestic material consumption (DMC)) 112.8 million tonnes DMC (1.7 % of EU28 total in 2017) 23.5 tonnes DMC/capita (175.6 % of EU28 average per person in 2017) |
| | Structure of the economy: agriculture: 1.2 % industry: 38.6 % services: 60.2 % |
| | Surface area: 70.6 thousand square kilometres (km ²) (1.6 % of total EU28) |
| | Population: 4.8 million (0.9 % of EU28 total in 2017) |

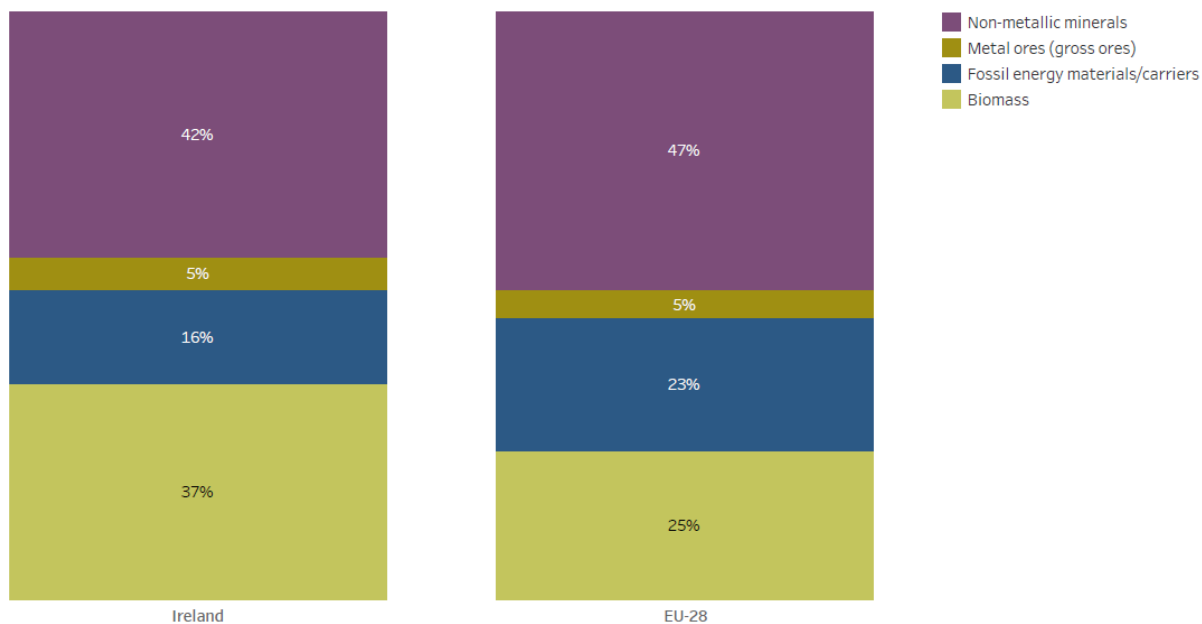
Use of materials (DMC) per person in Europe, 2000, 2007 and 2017, tonnes DMC per capita.

Source: Eurostat [env_ac_mfa]



Ireland & EU-28. Domestic Material Consumption by material category, 2017.

Source: Eurostat [env_ac_mfa]



Note: The domestic material consumption categories 'other products' and 'waste for final treatment and disposal' are excluded from the figure.

Ireland. Trends in domestic material consumption by category, 2002-2017.

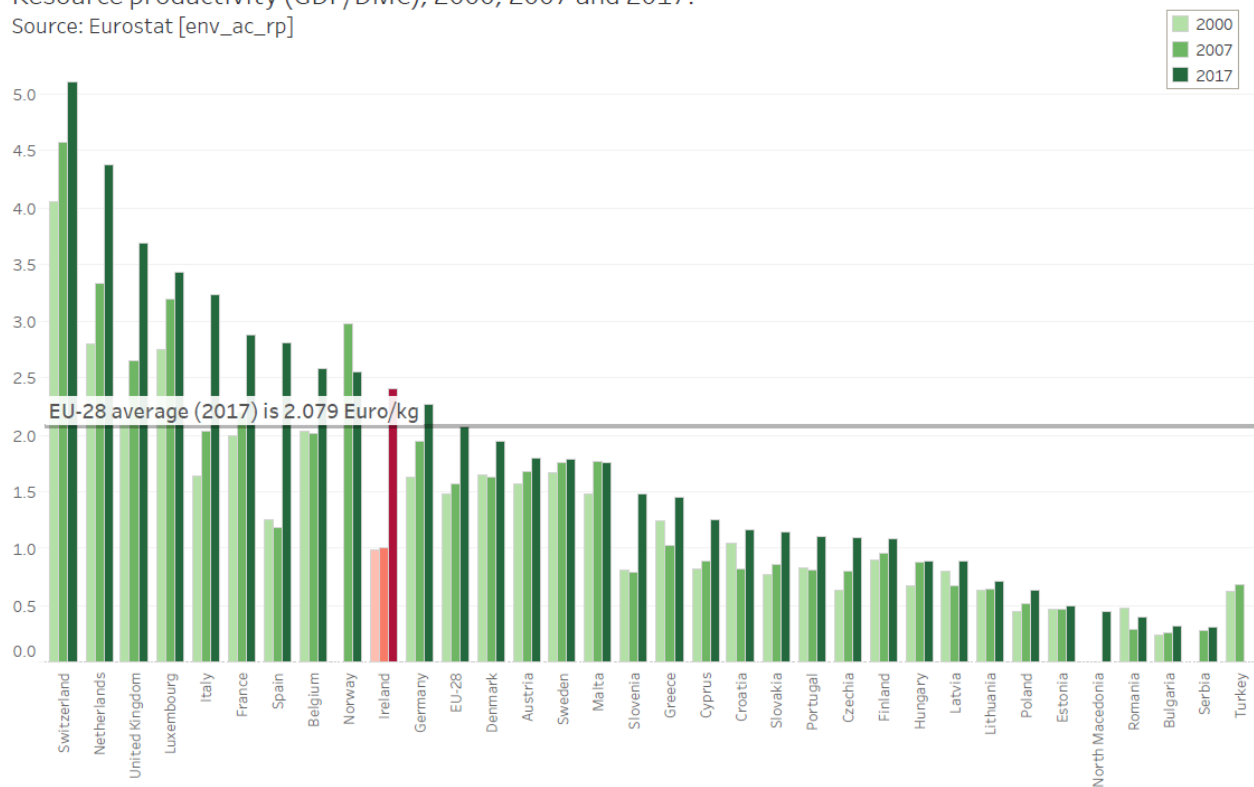
Source: Eurostat [env_ac_mfa]



Note: The domestic material consumption categories 'other products' and 'waste for final treatment and disposal' are excluded from the figure.

Resource productivity (GDP/DMC), 2000, 2007 and 2017.

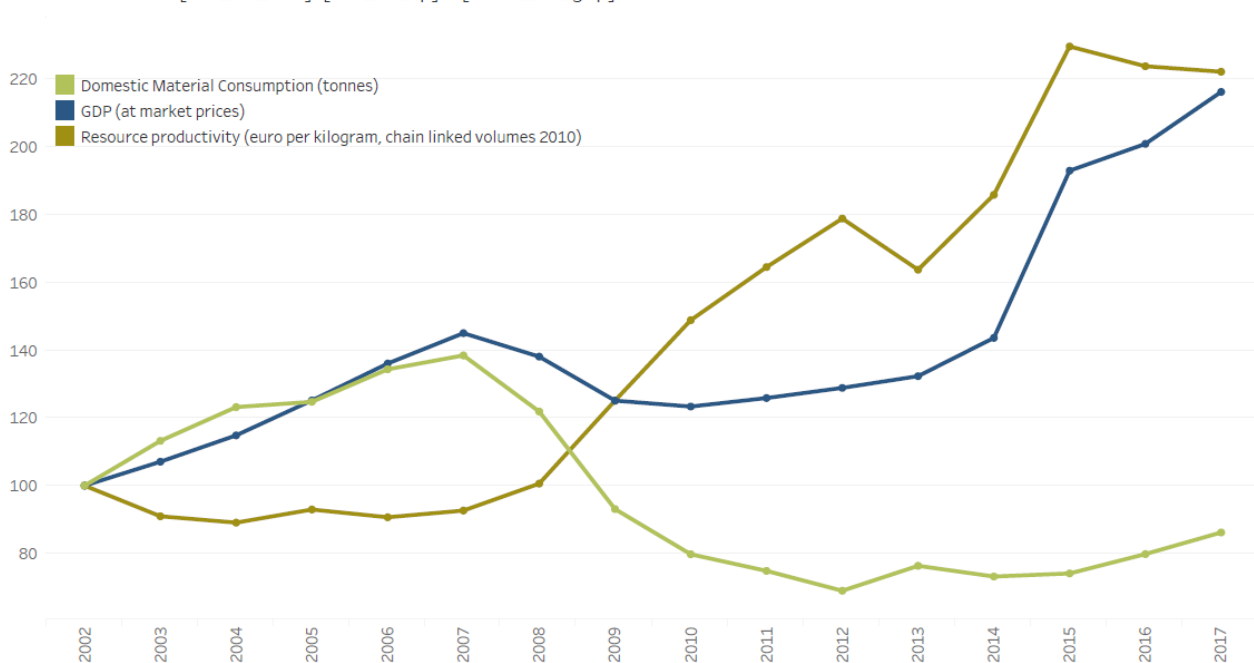
Source: Eurostat [env_ac_rp]



Note: GDP expressed in chain linked volumes 2010.

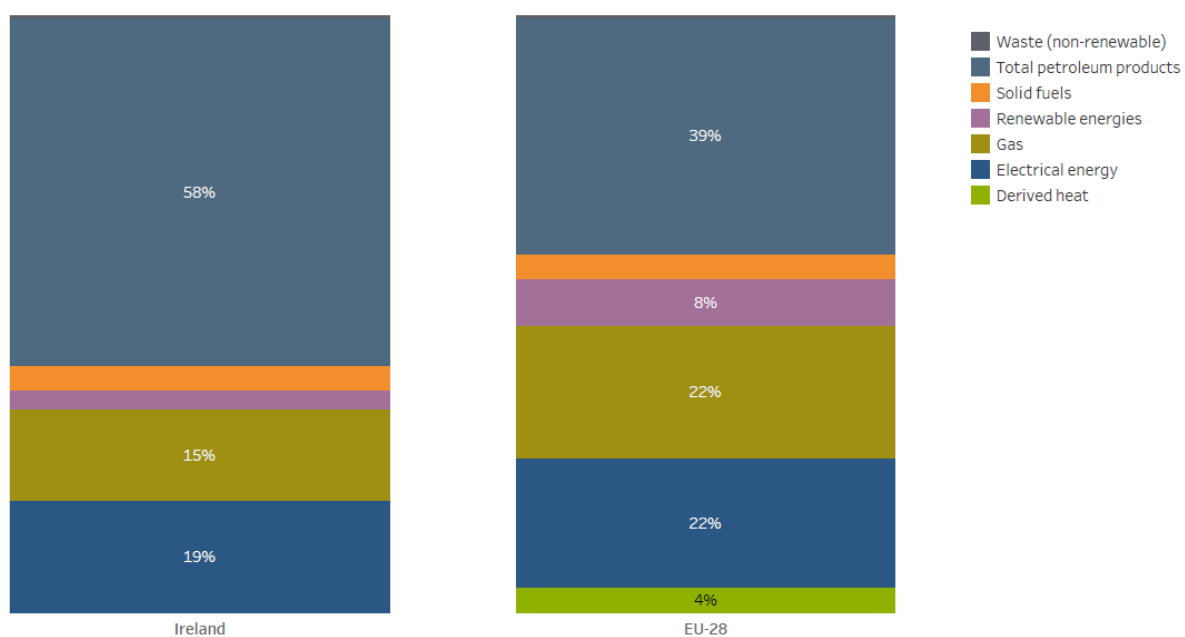
Ireland. GDP, DMC and resource productivity trends, 2002-2017, index 2002=100.

Source: Eurostat [env_ac_mfa], [env_ac_rp] & [nama_10_gdp]



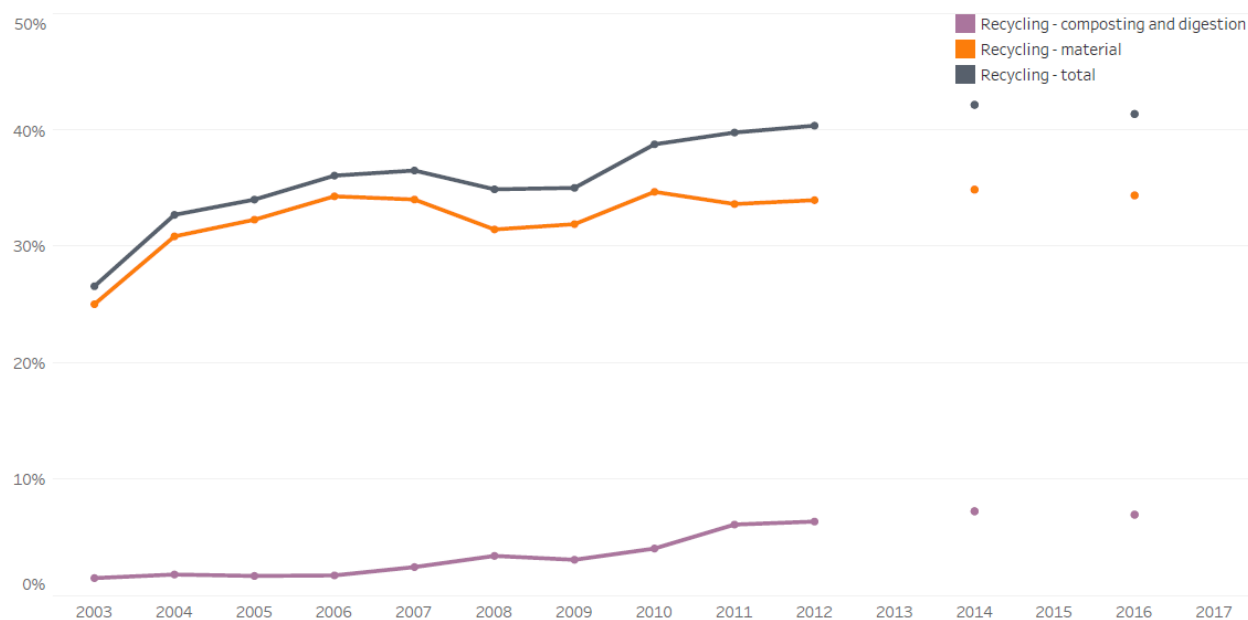
Ireland & EU-28. Primary energy consumption by energy product, 2016.

Source: Eurostat [nrg_100a]



Ireland. Recycling of municipal waste, 2003-2017, as share of total waste treatment.

Source: Eurostat [env_wasmun]



Note: The amount of municipal waste treatment is reported for the treatment operations incineration (with and without energy recovery), recycling, composting and landfilling.

Policy framework

Driving forces for material resource efficiency and circular economy

Ireland recognises that the long-term viability of our lifestyles is questionable and that serious attention is needed to ensure that Europeans live in a manner that leaves our nations and the world in good shape for future generations. Ireland is a highly open economy with a growing manufacturing sector, the sustainable availability of raw-materials is a significant factor for continued prosperity. As an island nation, the transport costs associated with importing raw materials are significant and can impact on competitiveness. As an example of this: Ireland's energy policy is characterised by three primary objectives: *security of supply*, *environmental protection* and *cost competitiveness*.

In addition, it is clear that strategic goals and regulatory requirements (mostly originating from EU) have been an influential foundation to resource efficiency approaches – for example, the Circular Economy Package.

For the Environmental Protection Agency (EPA), resource efficiency is addressed through its National Waste Prevention Programme (NWPP). The inclusion of requirements for continuous improvement in the industrial licensing system drives efficiency improvements across a range of production sectors.

Other government bodies have initiated resource efficiency related initiatives (described later under Institutional setup and stakeholder engagement) related among others to food and fish production, sectoral initiatives, and energy.

Dedicated national strategies or roadmaps for material resource efficiency and a circular economy

Ireland currently does not have a dedicated national resource efficiency strategy or a roadmap. The current National Waste Prevention Programme¹ is, however, titled Towards a Resource Efficient Ireland and will run from 2014 to 2020. It looks beyond waste prevention to also address the broader concept of resource efficiency. The overarching objective is to implement EU and national policy on resource efficiency to break the link between economic growth and environmental impact. More specifically, the strategy aims to:

- reduce wasteful consumption of material, water and energy resources by changing behaviours in business, households and the public sector;
- enhance competitiveness and reduce business costs by delivering programmes that stimulate resource efficiency and the circular economy;
- support sustainable growth and employment in the green economy – including re-use enterprises;
- minimise generation of hazardous wastes through efficient practices and use of safer alternatives;
- manage hazardous substances in products through efficient regulation;
- inform and influence evidence-based decision-making by compiling and publishing high quality data on waste.

In 2014, an EPA-funded research project assessed the current situation in Ireland with regard to resource efficiency and to prepare a Roadmap for a National Resource Efficiency Plan for Ireland². The final report has been published although it has not been formally adopted.

There is no dedicated strategy on Circular Economy in place at this time. However, work is expected to start very soon on the preparation of a national circular economy strategy – which will be led by the

¹ <https://www.epa.ie/pubs/reports/waste/prevention/TowardsAResourceEfficientIreland.pdf> (English)

For a more detailed summary of key measures relevant to resource efficiency and updates see the NWPP annual reports: <http://www.epa.ie/pubs/reports/waste/prevention/reports/> (English)

² http://www.epa.ie/pubs/reports/research/waste/Research_128_web.pdf (English)

Ministry of the Environment. As written, the Towards a Resource Efficient Ireland strategy is closely aligned to circular economy principles and a mid-term review of the programme, currently underway, will further strengthen this alignment.

Overview of dedicated national or sectoral strategies for raw materials

Ireland does not have a dedicated strategy for raw materials at the moment. There also is no national critical raw materials list. A recent EPA Research call for proposals includes a project to identify the mineral and non-mineral raw materials that are critical to Irish industry, excluding energy raw materials.

Bio-based raw materials are identified in some national strategies, such as the Harnessing Our Ocean Wealth and Food Wise 2025 strategies (see also the section on Policies which include elements of material resource efficiency); energy materials are identified in national reserves plan (oil)³ and besides the above, Ireland's Central Statistics Office also compiles national material flow accounts, but not projected demand.

Policies which include elements of material resource efficiency

National Planning Framework Ireland 2040⁴

The recently published National Planning Framework (Ireland 2040) includes a section on a sustainable future which explicitly addresses resource efficiency; transition to a low carbon economy; and conserving natural capital. National ambitions in this area are expressed in such documents as *Adopting the principles of the circular economy to enable more sustainable planning and land use management of our natural resources and assets*. Some of the policy objectives in the document speak directly to the circular economy:

- support the circular and bio economy including in particular through greater efficiency in land management, greater use of renewable resources and by reducing the rate of land use change from urban sprawl and new development (National Policy Objective 53);
- sustainably manage waste generation, invest in different types of waste treatment and support circular economy principles, prioritising prevention, reuse, recycling and recovery, to support a healthy environment, economy and society (National Policy Objective 56).

A Resource Opportunity⁵ was published in 2012 and provides a roadmap for waste management in Ireland. The policy covers the full spectrum of waste management, compliance and enforcement, taking into account the principles set out in the Waste Framework Directive (2008/98/EC), especially the regard of the five tiers of the EU waste hierarchy. The guiding principles behind the strategy include:

- prevention and minimisation at the heart of waste policy;
- maximum value to be gleaned from waste by re-use, recycling and recovery.

Running to 2020, the policy integrates its aims with other strategic priorities such as sustainable development, the green economy, and green public procurement.

Our Sustainable Future⁶: a joined-up approach to policy making on sustainable development with 70 measures targeted to improve quality of life for current and future generations. Published in 2012, the document describes measures, responsibilities and timelines, in areas such as economic resilience, natural resources, agriculture, climate change, transport, etc.

A progress report⁷ was published in 2015.

³ www.nora.ie (English)

⁴ <http://npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf> (English)

⁵ <https://www.dcae.gov.ie/en-ie/environment/publications/Pages/A-resource-opportunity.aspx> (English)

⁶ <https://www.dcae.gov.ie/documents/Our%20Sustainable%20Future%20-%202012.pdf> (English)

⁷ <https://www.dcae.gov.ie/documents/2015%20OSF%20Progress%20report%20-%20Final+1.pdf> (English)

Sustainable Development Goals National Implementation Plan 2018 - 2020⁸ (also see section on Seeking synergies with other policy areas)

This was published in 2018 and provides a whole-of-government approach to implement the 17 Sustainable Development Goals (SDGs). The Plan identifies four strategic priorities to guide implementation:

- awareness: raise public awareness of the SDGs;
- participation: provide stakeholders opportunities to engage and contribute to follow-up and review processes, and further develop national implementation of the SDGs;
- support: encourage and support efforts of communities and organisations to contribute towards meeting the SDGs, and foster public participation; and
- policy alignment: develop alignment of national policy with the SDGs and identify opportunities for policy coherence.

Green Public Procurement – Guidance for the Public Sector⁹ (2014) was developed with input from a number of State Agencies and Government Departments. This guidance document was developed to assist the public sector to implement and maintain procedures for green public procurement. This document is a practical resource tool designed to assist procurers to build green criteria into public tenders. It covers eight sectors:

- road transport vehicles and services;
- energy;
- construction;
- food and catering services;
- cleaning products and services;
- textiles and uniforms;
- office information technology (IT) equipment;
- paper.

Regional Waste Management Plans¹⁰: For the purposes of national waste management planning, Ireland is divided into three regions, Southern, Eastern-Midlands and Connacht-Ulster, with a similar waste management plans developed for each region. The plans identify measures to develop a circular economy where waste management initiatives stop being confined to treating and disposing of waste, instead supporting initiatives that value waste as a resource or potential raw material. All three plans contain similar objectives relating to resource efficiency and waste prevention, including a specific target relating to household waste: 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan (2015–2021).

The EPA's Research Programme 2014-2020¹¹ is designed to identify pressures, inform policy and develop solutions to environmental challenges through the provision of strong evidence-based scientific knowledge. The overall goal is to support research that will deliver solutions for more efficient use of resources, water and materials.

In June 2017, Ireland launched its second **National Plan on Corporate Social Responsibility**. The Plan articulates a vision for Ireland to adopt responsible and sustainable business practices that benefit local communities and the environment. (for more, see the section on Seeking synergies with other policy areas)

⁸ <https://www.dccae.gov.ie/en-ie/news-and-media/publications/Pages/SDGs-National-Implementaion-Plan.aspx> (English)

⁹ <http://www.epa.ie/pubs/reports/other/corporate/olg/GreenPublicProcurementfinalwebv2.pdf> (English)

¹⁰ <https://www.dccae.gov.ie/en-ie/environment/topics/waste/waste-management-and-policy/Pages/Regional-Waste-Management-Plans.aspx> (English)

¹¹ For publications relating to resource efficiency/circular economy see <http://www.epa.ie/pubs/reports/research/waste/> (English)

Food Wise 2025¹² was published in 2015 and sets out a 10-year plan for the agri-food sector. It underlines the sector's unique and special position within the Irish economy. Food Wise 2025 has new ambitions for the sector for further growth, growth which is sustainable – economically, socially and environmentally – by identifying smarter and greener ways to deliver sustainable growth so that it can contribute to our ongoing recovery.

Harnessing Our Ocean Wealth¹³ (2012) is an Integrated Marine Plan (IMP), setting out a roadmap for the government's vision, high-level goals and integrated actions across policy, governance and business to enable our marine potential to be realised. Implementation of this Plan aims to see Ireland evolve an integrated system of policy and programme planning for our marine affairs.

Institutional setup and stakeholder engagement

For the Environmental Protection Agency (EPA), resource efficiency is addressed through its National Waste Prevention Programme (NWPP) – see below. In addition, the inclusion of requirements for continuous improvement in the industrial licensing system drives efficiency improvements across a range of production sectors.

In addition to the EPA, other government bodies have targeted resource efficiency. Bord Bia (Irish Food Agency) is implementing its Origin Green scheme and the Irish Seafood Development Agency (Bord Iascaigh Mhara (BIM)) has the Green Seafood Programme for fishermen and fish processors. Other national agencies such as Sustainable Energy Agency of Ireland (SEAI), Enterprise Ireland (EI), and the Industrial Development Authority (IDA) are also supporting resource efficiency related programmes. Some of these take a sectoral approach, so that companies can learn from business peers and the issues that face same-sector businesses are often consistent. Other programmes are topic focused – for example, Sustainable Energy Authority of Ireland supports are energy-related.

Ireland's National Waste Prevention Programme (NWPP) is led by the Environmental Protection Agency (EPA) in association with the Environment Ministry (Department of Communications, Climate Action and the Environment (DCCAE)).

The NWPP is funded through an Environment Fund, managed and controlled by the Minister for the Environment. Revenues from the levies on plastic shopping bags and the landfill of waste are paid into the Fund, which may be used for a range of activities including :

- schemes to prevent/reduce waste;
- research and development (R&D) into waste management;
- development of producer initiatives to prevent/reduce waste arising from their activities;
- initiatives undertaken by community groups and others for protection of the environment.
-

The **National Waste Prevention Committee** (NWPC) provides strategic direction for the EPA in implementing the programme and includes a broad stakeholder group. The committee meets twice per year and includes representatives from government and the business sectors. Its Terms of Reference and memberships are available in the appendices of the NWPP Annual Reports¹⁴.

Waste management nationally is now organised on the basis of splitting the country into three regions. Each of these has a modest staff and works with municipalities and county-level authorities to implement activities including those on waste prevention and resource efficiency. A steering group advises the three regions from a national perspective which includes representation from EPA and DCCAE.

¹² <https://www.agriculture.gov.ie/foodwise2025/> (English)

¹³ <https://www.ouroceanwealth.ie/about-plan> (English)

¹⁴ <http://www.epa.ie/pubs/reports/waste/prevention/reports/>

There is also a cross-government committee established to oversee and promote implementation of Ireland Sustainable Development strategy, Our Sustainable Future. This group is chaired by DCCAE and includes high-level representatives from all government ministries. The same ministry has responsibility for leading Ireland's responses on the SDGs.

National procurement is led by the Office of Government Procurement who sit on a implementation group with the environment ministry, EPA and others to promote green public procurement.

Monitoring and targets

Targets for resource efficiency and circular economy

At this time, specific targets have not been developed in Ireland for a resource-efficient circular economy. The area is under review and these will be developed in the near future. Ireland will integrate with indicator and reporting approaches being developed at EU level, including the imminent methodology for measuring food waste.¹⁵

At a regional level, Ireland's three waste management plans include a target of a 1 % reduction of household waste generated per person per year.

Indicators to monitor progress towards a resource-efficient circular economy

Although there is not yet an agreed set of indicators to track progress towards a resource-efficient circular economy, the national comparator indicators published by Eurostat, DMC, resource productivity, etc., are based on data compiled by Ireland's Central Statistics Office.

The national Sustainable Development Indicator Set contains environmental indicators including: Recovery of packaging waste; Total primary energy requirement; Domestic Building Energy ratings; Domestic water supply sources.¹⁶

National Waste statistics and Ireland's progress towards EU waste targets are reported by the EPA¹⁷.

Resource efficiency, circular economy and the 2030 Sustainable Development Goals

In 2018, Ireland published a **National Implementation Plan for achievement of the UN Sustainable Development Goals**¹⁸ This document directly identifies Ireland's NWPP as the national response to eight targets within the set of goals; while a number of other targets are relevant to the work of the NWPP. The SDG targets directly associated with Ireland's NWPP are 8.4; 9.4; 11.6; 11b; 12.1; 12.2; 12.3; 12.5.

The EPA is currently leading a series of collaborative activities to progress Ireland's commitments to SDG 12.3 on reducing food waste.

- The NWPP's **Stop Food Waste**¹⁹ campaign has been at the forefront of food waste prevention since 2009 and has been promoting behavioural change through provision of information, training, local champions and peer example.

¹⁵ <http://emwr.ie/>; <http://southernwasteregion.ie/>; <http://www.curwmo.ie/> (English)

¹⁶ <https://www.cso.ie/en/releasesandpublications/ep/p-sdii/sustainabledevelopmentindicatorsireland2017/> (English)

¹⁷ <http://www.epa.ie/pubs/reports/waste/stats/> (English)

¹⁸ <https://www.dccae.gov.ie/en-ie/environment/topics/sustainable-development/sustainable-development-goals/Pages/National-Implementation-Plan-2018---2020.aspx> (English)

¹⁹ <http://stopfoodwaste.ie/> (English)

- Ireland's **Food Waste Charter**²⁰, launched in March 2017, is a collective industry commitment to reduce food waste along the entire supply chain. It is a call for all actors to align with SDG 12.3. In 2018, five major retailers signed the Food Waste Charter (representing 70% of Irish grocery market). The retailers pledged to work towards a common and long-term approach to tackling food waste in the sector. The companies have agreed a common methodology for the collection of food waste data within their businesses. This will provide a solid evidence base for prevention measures and monitoring progress in implementing change. The Charter will be further rolled out across the food supply chain using a sectoral-based approach.
- Forum on Food Waste – the national platform for organisations to work together to measure, improve and communicate the issues relating to food waste. This biennial event brings together food businesses, national organisations, international experts and interested individuals to discuss the issues associated with, and solutions to, food waste in Ireland.

An Irish social enterprise, Foodcloud²¹ have been actively developing a solution in the form of support infrastructure to facilitate the rescue of surplus food suitable for human consumption from the supply chain and distribute to charities. Surplus food in the retail sector can be matched and donated to local charities through the Foodcloud app; larger volumes of surplus food from the production sector can be distributed through Foodcloud Hubs which has created necessary infrastructure around Ireland to facilitate this.

Examples of innovative approaches and good practice

Examples of good practice and innovative approaches

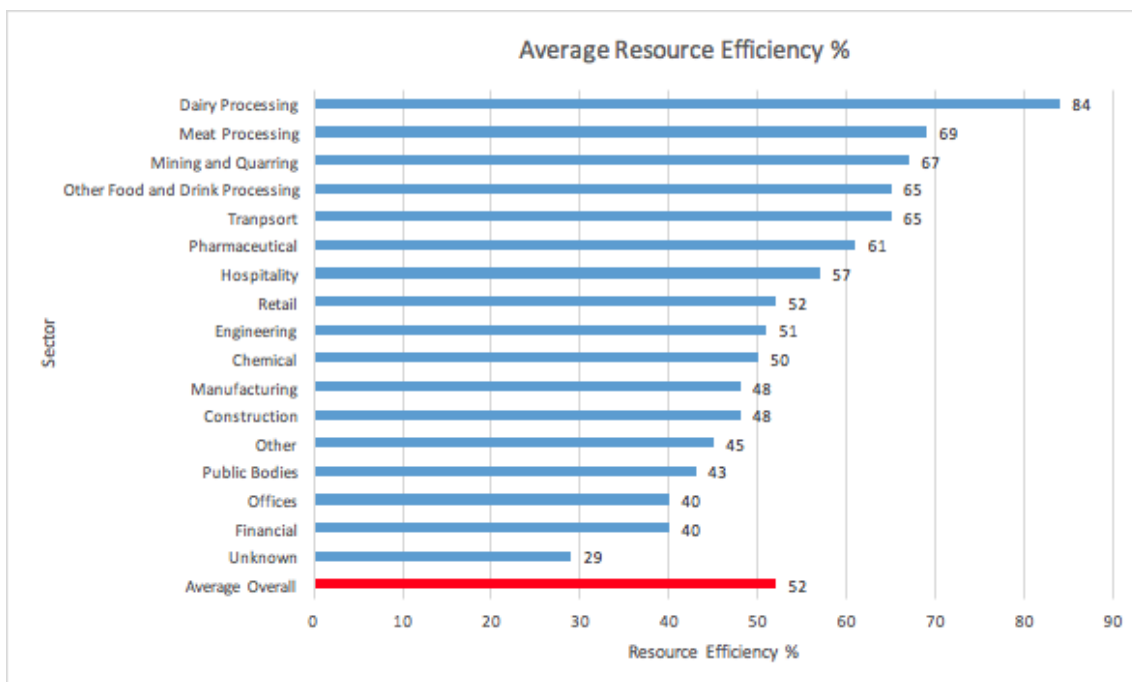
Tool for Resource Efficiency (TREE)²²

This online tool allows businesses of all sizes to obtain a resource efficiency score and receive an action plan tailored for their business. In 2017, 260 companies completed the on-line survey and achieved an average resource efficiency score of 52 %. The chart below shows the average resource efficiency scores obtained by various business sectors using TREE. The scores suggest that there is room for improvement in all business sectors. There has been growing interest in the TREE tool among various business sectors and government organisations. Ireland's food agency (Bord Bia) are now requiring the usage of TREE for new members of their successful Origin Green sustainability programme to drive initial actions towards resource efficient production.

²⁰ <http://foodwastecharter.ie/> (English)

²¹ <http://food.cloud> (English)

²² <http://greenbusiness.ie/sme-efficiency-and-cost-reduction-questionnaire/> (English)



Green Office Guides²³: Prepared through the EPA-funded Green Business programme, these resources were launched during 2018 and include:

- a) the *Green Office* information booklet;
- b) a handbook with 60 actions towards greener offices designed for management; and
- c) a Green Your Office wall chart with 50 top tips for staff.

Smart Farming²⁴, a voluntary on-farm resource efficiency initiative that focuses on improving farm returns and enhancing the environment through better resource management, continues its national roll-out. The Smart Farming initiative is an example of the partnership approach adopted by NWPP. It is led by the Irish Farmers Association in conjunction with the EPA. It brings together the knowledge and expertise of Teagasc, University College Dublin, Sustainable Energy Authority of Ireland, Clean Technology Centre, and others to demonstrate the financial and environmental benefits of better resource management on farms. The website includes a number of case studies of Irish farmers, who have realised significant financial savings while also reducing their resource consumption and lowering greenhouse gas emissions. A novel aspect of this programme is the requirement for each farmer who receives in-depth guidance to then share their experience and knowledge with neighbouring farmers building an effective peer-to-peer learning network.

The **Resource Efficiency Toolkit**²⁵ was developed as a guide for municipalities and other organisations to implement waste prevention programmes. The toolkit was developed using the experiences and materials already produced by participants of the EPA-led Local Authority Prevention Demonstration (LAPD) and Local Authority Prevention Network (LAPN) programmes²⁶. It provides a step-by-step approach to resource efficiency and gives tips and links to the materials in the LAPN Project Catalogue along the way.

Repair Directory As participants in the Local Authority Prevention Network (also see Resource efficiency, circular economy and the 2030 Sustainable Development Goals), a number of municipalities developed repair directories listing businesses in the locality offering repair services²⁷ for different types of goods,

²³ <http://greenbusiness.ie/resources/>

²⁴ <http://smartfarming.ie>

²⁵ <http://toolkit.localprevention.ie/index.html>

²⁶ <http://repository.localprevention.ie/>

²⁷ <http://repository.localprevention.ie/wp-content/uploads/2016/01/Web-Kilkenny-RD.pdf> (English)

including clothes, electrical and electronic equipment, furniture, musical instruments. Drawing on this project, a national on-line repair directory²⁸ and app have been developed to support small businesses that offer repair services in their local community.

Starting as a pilot in 2010, **SMILE Resource Exchange**²⁹ is a free nationwide industrial symbiosis service for businesses that encourage the exchanging of resources between members in order to save money, reduce waste going to landfill and to develop new business opportunities. Potential exchanges are identified through networking events, an online exchange facility and through direct contact from SMILE technical advisors.

In terms of quantifying Ireland's industrial symbiosis activity, the following figures provide some details.

- SMILE recorded 80 successful synergies in 2017, representing cost savings of EUR 541,667 and 2,943 tonnes of material actually diverted to reuse/recycling.
- Three hundred and three new potential synergies were identified and progressed throughout 2017; and to date, SMILE have directly supported 1,862 synergies – 958 through the SMILE website; 904 identified by the SMILE team and technical support consultants.
- Many of the successful synergies are ongoing ones and year on year this equates to an overall diversion of 35,253 tonnes of materials from landfill and an associated economic benefit of EUR 6.4m from the period 2010–2017.

The **Green Enterprise Programme** is designed to provide grant support to develop sustainable products, services or to raise awareness. A number of projects completed recently had interesting results or significant achievements:

- Heads-Up (ReCreate)³⁰ worked with Trinity College, Dublin, to investigate the effectiveness of learning outcomes through creative play, using re-used play materials. ReCreate work with local and national businesses to collect unwanted and surplus items, for use in early childhood education, schools, colleges, special needs groups and community centres, and by individuals for art, craft, theatre and creative projects of all kinds. This helps local businesses produce less waste, helps schools and communities to stretch their budgets and their imagination, and helps the environment by reducing waste and our carbon footprint. The results were extremely encouraging and are outlined in a beautifully presented final report booklet.
- Inisbofin – A new type of tourism³¹ aimed at getting a collection of tourism businesses on the island of Inisbofin certified, and the island marketed as a low impact destination.
- One of the projects commenced in 2017 was the Green Teams Recognition Project, which developed formal accredited training forming part of continuing professional development, in various environmental, operational and business-related disciplines appropriate to green teams. By developing a formal structure and accreditation, company green team members are trained to become more effective and to build recognition for green team actions within their own organisations. The project is delivered by a combination of workshop and on-line learning, and is currently being rolled out to over 100 participants over the next three years.

The **Stop Food Waste Challenge**³² is a facilitator led, participant driven programme that introduces householders to all aspects of food waste prevention in the home. The programme involves four 1-hour meetings held over four to six weeks and employs a range of activities, tools and media to train and support participants. The Stop Food Waste Challenge was developed by EPA and its contractors. Since its development and trialling in 2014, it has continued to be promoted throughout the country. Over 1,000 households have participated with food waste reductions levels of between 25–50 % typically measured. Based on average reductions of about 2 kilograms per week, this equates to annual food waste reductions

²⁸ www.RepairMyStuff.ie (English)

²⁹ <http://www.smileexchange.ie/> (English)

³⁰ <http://recreate.ie/heads-up-project/> (English)

³¹ <http://www.ecotourismireland.ie/inishbofin/> (English)

³² <http://stopfoodwaste.ie/> (English)

of around 100 tonnes for those households involved to date. The project is ongoing, with a focus on finding innovative ways to increase the roll out of the challenge to more communities across the country.

The **Green Healthcare**³³ programme has produced best practice guidelines for efficient water use in the healthcare sector. This guide covers benchmarks for water use in both acute and community hospitals, leak detection, daily use profiles, surveying main users, as well as recommended best practice for fixtures and fittings. This guide has been developed through consultation with various individuals working towards efficient water use within the sector.

Further gathering of data is ongoing to benchmark water use in acute and community hospitals in terms of litres of water per bed-day. If the top acute hospitals users in the group of hospitals for which data was gathered could reach the Irish Average of 730 litres of water per bed-day, there would be savings approaching EUR 600,000 per year.

Building on previous work to prevent food wastage in healthcare settings, Green Healthcare is developing self-assessment tools for catering staff to help identify measures for food waste reduction. This tool could then be rolled out across all catering departments in all hospitals to self-assess in relation to reducing food waste.

The EPA has supported or funded several **mattress recycling/reuse projects** across the country. These are Eco-Mattress Recycling in Dublin, Boomerang in Cork and Galway Traveller Movement in Galway. Mattresses are a significant bulky waste stream and one that might lend itself to a more formalised mechanism of collection/treatment. Between 400,000 and 800,000 mattresses are disposed of per annum in Ireland representing up to 20,000 tonnes of material. Consideration is now being given to a producer responsibility type approach, whether a legislatively backed system or an industry led or voluntary approach for end-of-life mattresses would be appropriate.

Boomerang Mattress Recycling³⁴ is a social enterprise based in Cork, who recycle and re-use mattresses. End-of-life mattresses are difficult to manage as they are not welcomed by incinerator operators and take-up considerable space in landfill. The main aim of the project is to encourage the diversion of these bulky items from landfill and recover the materials in each mattress in an environmentally friendly manner. Boomerang provides local employment for a project manager and for a minimum of six community work placement workers. Boomerang also provides for the up-skilling and training of its employees, while researching means to reuse and recycle fabrics. The project is managed by Cork Environment Forum and supported by the EPA, Cork City Council and others.

ReCreate³⁵ is a social enterprise making art materials and educational supplies accessible and affordable to every sector of the community for all kinds of creative purposes. They work with local and national businesses to collect unwanted and surplus items, for use in early childhood education, schools, colleges, special needs groups & community centres, and by individuals for art, craft, theatre and creative projects of all kinds. This helps local businesses produce less waste, helps our schools and communities to stretch their budgets and their imagination, and helps the environment by reducing waste and our carbon footprint. During 2016, ReCreate received funding from EPA to conduct the Heads Up project which adopted an 'artist in residence' model to work within educational and community-based groups. Heads Up demonstrated that clean materials salvaged from industry encouraged greater flexibility and creativity in arts and crafts for young people and adults with diverse learning needs.

³³ <http://www.greenhealthcare.ie/> (English)

³⁴ <http://boomerangenterprises.ie/> (English)

³⁵ <https://recreate.ie/> (English)

Producer Responsibility Initiatives³⁶ (PRIs) have been developed for a number of waste streams, based on the producer pays principle. These PRIs are focused on ensuring that the waste management costs arising during the life of a product are internalised in the price charged to consumers. The sectors involved are packaging; waste electrical and electronic equipment (WEEE); batteries; tyres; end-of-life vehicles (ELVs) and farm plastics. Some of the PRIs also include work on prevention, for example the Prevent 7 save programme of REPAK, the packaging PRI.

Seeking synergies with other policy areas

Origin Green³⁷ is an initiative of Ireland's food agency (Bord Bia). Launched in 2012, Origin Green is Ireland's food and drink sustainability programme. The vision is that through Origin Green, Irish food and drink becomes the first choice globally because it is sustainably produced. It helps Ireland produce more food from less resources. It brings together the entire food industry – from farmers to food producers, retailers to foodservice operators – with a common goal of sustainable food production. The aim is to achieve the production of safe, nutritious food that simultaneously protects and enhances the natural environment and the local community. Before becoming a verified member of Origin Green, a manufacturer, retailer or food-service operator must sign up to the relevant Sustainability Charter and prepare a sustainability plan including targets identified as part of the plan. At present, Origin Green includes 332 companies with independently verified and annually monitored sustainability plans. These members represent 90 % of total Irish food and drink exports.

In June 2017, Ireland launched its second **National Plan on Corporate Social Responsibility**³⁸. The Plan articulates a vision for Ireland to adopt responsible and sustainable business practices that benefit local communities and the environment. In particular, the strategy notes that in a world of finite resources it has never been so important for businesses to evolve to ensure they become sustainably competitive. It urges organisations across Ireland to become more resource efficient in how they operate their business and to minimise any negative impact on the environment

Resource efficiency and circular economy policy initiatives from subnational to local level

Regional Waste Management Plans

For the purposes of national waste management planning, Ireland is divided into three regions – Southern, Eastern-Midlands and Connacht-Ulster. The three waste management planning offices are now well established and have begun implementing the adopted regional waste management plans (RWMPs 2015–2021). These share a common approach, placing emphasis on both resource efficiency and waste prevention. The plans identify measures to develop a circular economy where waste management initiatives stop being confined to treating and disposing of waste, instead supporting initiatives that value waste as a resource or potential raw material.

The regional plans all contain the same specific target relating to household waste: 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan (2015–2021). Projects of interest include **Reuse Month** initiated in 2016 with coordinated events and activities taking place during October includes fashion and furniture upcycling workshops, local information events, fashion shows with local charity shops. **The Upcycle Challenge**³⁹ is a centre-piece of Reuse Month and looks to raise awareness of reuse and to highlight what can be done with items typically discarded. The competition encourages people to take part in reuse activities countrywide and typically receives over 150 upcycled projects - highlighting the growing reuse and upcycling community in Ireland.

³⁶ <https://www.repak.ie/for-business/members/current-repak-members/prevent-and-save/> (English)

³⁷ <http://www.origingreen.ie/> (English)

³⁸ <http://www.csrhub.ie/Ireland-s-National-Plan-on-CSR/> (English)

³⁹ <https://www.freetradeireland.ie/The-Upcycle-Challenge-2017.html> (English)

Many municipalities are also piloting reuse initiatives at Civic Amenity Centres such as paint and furniture reuse initiatives. An innovative **Reuse Cottage** was established by Limerick City & County Council to promote the reuse of household goods.

Towards Zero Waste Cashel, Co Tipperary⁴⁰

In 2016 VOICE, a member-based Irish environmental NGO, developed a proposal to pilot an Irish Zero Waste community. A number of communities were identified as being suitable and after an initial round of interviews Cashel, Co Tipperary was chosen. Funding for this 18-month pilot has been secured from the EPA Green Enterprise Programme & the Department of Communications, Climate Action and the Environment. Project concepts were developed early in 2016 and this involved consulting widely with the local community to gather support and interest in pursuing the following initiatives:

- set a goal of waste reduction of 25% within one year;
- engage and work together with local groups/businesses/schools/households;
- organise town meetings/school assemblies to instil the importance of zero waste;
- establish sharing and reuse enterprises;
- plan repair and upcycling workshops; and
- educate on effective recycling and composting.

The Rediscovery Centre⁴¹ is the national centre for the circular economy. Established through LIFE Programme funding, it is a creative space connecting people, ideas and resources. We bring together the skills and expertise of artists, scientists, designers and craftsmen united in a common purpose of sustainability through resource efficiency and reuse. The Rediscovery Centre supports the development of the circular economy and advocates for a more resilient, equitable society. The Centre has four reuse social enterprises Rediscover Furniture, Rediscover Fashion, Rediscover Paint and Rediscover Cycling. These enterprises use waste and unwanted materials as a resource and raw material for new product design. The Rediscovery Centre is also home to an Education department that provides a variety of exciting and interactive workshops for children.

Part of the NWPP, the **Local Authority Prevention Network (LAPN)⁴²**, which started as a pilot in 2005, is now a well-established network involving all local authorities (municipalities) in Ireland. LAPN provides funding, training, technical support and networking to local authority staff with a view to supporting sustainability and waste prevention initiatives at the local level. The wide scope of activities undertaken by LAPN participants work towards creating more sustainable communities in Irish society.

The **Resource Efficiency Toolkit⁴³** was developed as a guide for municipalities and other organisations to implement waste prevention programmes. The toolkit was developed using the experiences and materials already produced by participants of the EPA-led Local Authority Prevention Demonstration (LAPD) and Local Authority Prevention Network (LAPN) programmes. It provides a step-by-step approach to resource efficiency and gives tips and links to the materials in the LAPN Project Catalogue along the way⁴⁴.

Repair Directory⁴⁵ As participants in the Local Authority Prevention Network, a number of municipalities developed 'repair directories' listing businesses in the locality offering repair services for different types of goods, including clothes, EEE, furniture, musical instruments. On foot of this project, a national on-line

⁴⁰ <http://www.zerowastecashel.ie/> (English)

⁴¹ <http://www.rediscoverycentre.ie/> (English)

⁴² <http://localprevention.ie> (English)

⁴³ <http://toolkit.localprevention.ie/index.html> (English)

⁴⁴ <http://repository.localprevention.ie/> (English)

⁴⁵ <http://repository.localprevention.ie/wp-content/uploads/2016/01/Web-Kilkenny-RD.pdf> (English)

repair directory (and app) has been developed to support small businesses that offer repair services in their local community⁴⁶.

Other resources

Examples of policies which go beyond “material resources”

Ireland’s **Community of Practice for Large Water Users**⁴⁷ is comprised of over 120 of the largest production and service facilities across Ireland along with key national stakeholders and development agencies with a focus on addressing the challenges of sustainable water management at their sites. The focus is large water users as a catalyst for change in terms of water management practices along the supply chain and the collaborative development of specialised management tools and Water Stewardship roadmaps. The membership is drawn from the food and beverage, pharmaceutical and other key sectors. The establishment and ongoing operation of the initiative is managed by Central Solutions, an Irish firm recognised internationally as a leader in the area of water stewardship programmes and tools for both public and private sector clients. In 2016, under various project strands member firms identified €2.5 million in potential water and related resource efficiency savings across their sites and successfully delivered EUR 1 million in verified savings in the first six months of the year. Over 25 member firms completed water stewardship training and member firm ABP became the first beef processor in the world to achieve gold certification status under the EWS international water stewardship standard.

The recently published National Planning Framework⁴⁸, Ireland 2040, includes a section on a Sustainable Future which explicitly addresses Resource Efficiency; Transition to a Low Carbon Economy; and Conserving Natural Capital. National ambitions in this area are expressed in the documents as *Adopting the principles of the circular economy to enable more sustainable planning and land use management of our natural resources and assets*. Some of the policy objectives in the document speak directly to the circular economy and include elements beyond material resources. An example is the objective to support the bio- and circular economies including in particular through greater efficiency in land management, greater use of renewable resources and by reducing the rate of land-use change from urban sprawl and new development (National Policy Objective 53).

The way forward

Reflections on future directions of policies on resource efficiency and circular economy

From a government point of view, implementation of the circular economy requires a response across policy areas beyond environment - including enterprise, community development and social protection. Current policy approaches can be disjointed and there is overlap and disconnect between the various related policies prepared by different government departments.

The NWPP in Ireland is supporting the development of the low-carbon economy and must continue to be innovative in responding to emerging policy challenges.

The engagement and collaboration of relevant public bodies, including local and regional authorities, is critical. The strong partnership approach, led by the NWPP demonstrates how this can be achieved, though this is not without challenges! It is essential to maintain strong relationships and good channels of communication.

⁴⁶ www.RepairMyStuff.ie (English)

⁴⁷ <https://www.central-solutions.com/sustainability-programmes/community-of-practice/> (English)

⁴⁸ <http://npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf> (English)

Additionally, the introduction of the SDGs, especially SDG 12, has brought an additional dimension to these policies. These seem to have motivated a business response in Ireland and many companies, through their corporate and social responsibility (CSR) activities, are including measures to meet SDGs⁴⁹.

A strong focus is needed on messaging, so that the public and business operators think about 'resource efficiency' in the same way that thinking about 'energy efficiency' has now become natural.

Other challenges include the long-term nature of these projects means slow progress and some projects can be difficult to measure, especially those involving behaviour change, making them hard to justify to project funders.

⁴⁹ For example <http://www.bitc.ie/join-the-network/sustainable-development-goals/> (English)

European Topic Centre on Waste and Materials
in a Green Economy

Boeretang 200

BE-2400 Mol

Tel.: +14 33 59 83

Web: wmge.eionet.europa.eu

Email: etcwmge@vito.be

The European Topic Centre on Waste and Materials
in a Green Economy (ETC/WMGE) is a consortium
of European institutes under contract of the
European Environment Agency.

