

Towards a Resource Efficient Ireland

A National Strategy to 2020

*incorporating Ireland's National Waste
Prevention Programme*



Foreword

Since its inception in 2004, Ireland's National Waste Prevention Programme has successfully delivered solutions for individuals and organisations that recognise the costs of wasteful consumption (both excess purchasing and final disposal charges); along with the critical need to manage our finite natural resources to maintain our quality of life into the future. Over the years the programme has evolved beyond an initial focus on preventing generation of solid wastes to a broader view of preventing wastage across materials, energy and water (primarily because of the integrated nature of relationships between each). The title of this document, the fourth iteration of the programme, is intended to reflect this broad approach and to highlight the key role for the programme in delivering on national priorities on competitiveness and green growth. It sets out the programme aims for the period to 2020.



Towards a Resource Efficient Ireland

Within the EPA, we implement our activities on resource efficiency through a programme of work that has grown from the National Waste Prevention Programme (NWPP) – which commenced in 2004. This document presents the next phase of the evolution of the programme, “Towards a Resource Efficient Ireland” which runs to 2020.

Vision

“Living better, using less”

Implementation

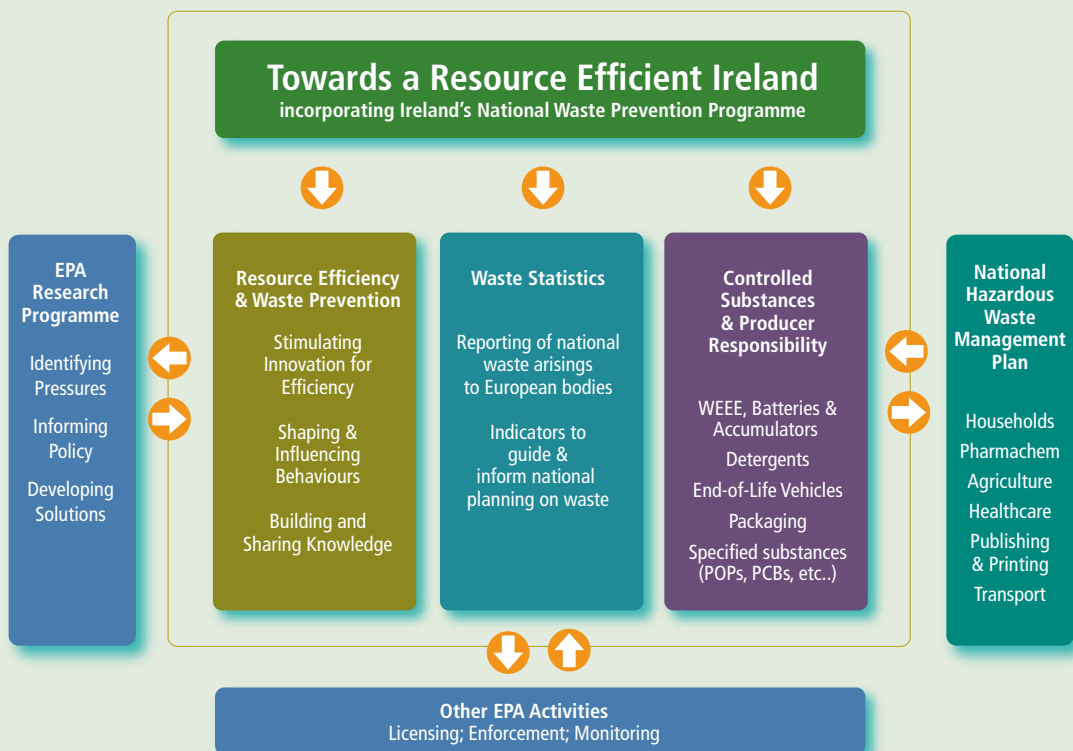
Oversight and direction for the programme will continue to be provided by the EPA Board of Directors and the ministerially-appointed **National Waste Prevention Committee**. This committee includes public sector, business & NGO representatives and provides strategic direction to the programme. To outline our planned work for each year (including identifying new priorities and activities), we will prepare an annual **implementation plan**, in consultation with the National Waste Prevention Committee. An **annual report** will also be published, and presented to the Minister for the Environment, Community & Local Government to record our highlights and achievements in the previous year.

The structure of the programme is shown in the diagram below, along with linkages to other relevant EPA activities. Further detail on each of three major strands of the NWPP, plus hazardous waste prevention, are presented in the following sections.

Objectives of Towards a Resource Efficient Ireland

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, we will:

- ▶ Reduce wasteful consumption of material, water and energy resources by changing behaviours in businesses, 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.



Towards a Resource Efficient Ireland

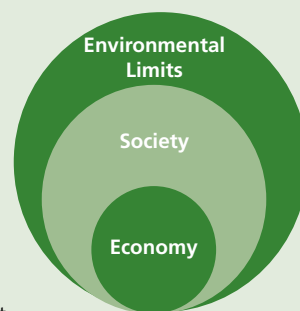
The earth's natural resources (water, soils, metals, minerals, fuels and biodiversity) provide our food & energy plus the shelter & goods we use to survive and develop. In the recent *Resilient People, Resilient Planet* report, the UN noted that our planet is under unprecedented stress; driven by strong population growth and rapidly rising numbers of middle-class consumers. In less than 20 years, it estimates that the world will need 50% more food and 45% more energy. In the face of this increasing demand, our resources remain finite and are being consumed at an ever quicker rate. The outcome of this situation is overloading of the planet's carrying capacity, and consequent shortages of raw materials and foodstuffs.



Resource Efficiency offers a means towards achieving balance between allowing current generations in Ireland & worldwide to prosper & develop while safeguarding a future for those coming after us. Through preventing unnecessary and inefficient consumption of materials; recovery of residual resources from waste streams; and clever re-use of end-of-life goods, we can make a significant difference to the scale and rate at which we are drawing-down the Earth's natural capital.

Environment and economy are often seen in conflict however resource efficiency actually boosts business competitiveness by reducing costs and increasing productivity. This fact is clearly recognised in the *Europe 2020* strategy which highlights resource efficiency as key to securing growth and jobs for Europe.

Resource efficiency offers a clear win-win scenario: improved performance in reducing wastage also delivers real savings. It is a critical component of the 'circular economy' whereby we reduce our dependency on finite raw materials without compromising future development. The nested sustainability model (*shown, right*) offers a useful view of how economic activity occurs within our societal model, which in turn can only function within the finite limits of our environment. Transforming an economy onto a resource-efficient path brings increased competitiveness and new sources of growth, through cost savings from improved efficiency; commercialisation of innovations; and better management of resources. This requires policies that recognise the interdependencies between the economy, wellbeing and natural capital and the removal of barriers to improved resource efficiency. A key policy driver in this area is the *Waste Framework Directive* (2008/98/EC) which requires each Member State to establish a waste prevention programme and sets out suitable structures and approaches. Ireland has had a waste prevention plan in place since 2004, and our activities in these areas are well aligned to the legislation - as illustrated by analysis of the example measures given in the directive (below)¹.



From a national perspective, following recession, Ireland is now pursuing economic recovery. With growing global demand and competition for resources, costs and competitiveness are more critical than ever. Our future growth is also set against a backdrop of increasing global populations which are also seeking to prosper into the future. Pursuing resource efficiency in manufacturing & services will build competitive businesses and secure existing jobs; while also fostering innovative approaches that can create new employment.

Efficient energy, agriculture and transport will be central to Ireland achieving a resource-efficient & low-carbon economy; though all sectors will be involved in this transition. Given their importance across the national economy, successfully engaging SMEs will be essential for a successful transformation. Overall, the challenge lies in changing the consumption patterns and waste management behaviours of both producers and their customers.

Recent research estimates that if Ireland achieved a target of a 2% reduction in domestic material consumption per annum, this would yield savings of about €928 million in the first year and increased annual savings thereafter². By 2020 this could lead to a 25% improvement in resource efficiency, yielding a total saving of approximately €7 billion over that period.

Resource efficiency is about **living better** while **using less** – and for Ireland, this ambition has never been more relevant.

Towards a Resource Efficient Ireland (incorporating National Waste Prevention Programme)	Waste Prevention Measures, per 2008/98/EC
Resource Efficiency projects (business)	4, 5, 7, 8, 9, 10, 13, 14, 16
Resource Efficiency projects (public sector)	1, 3, 5, 6, 8, 12, 15
Resource Efficiency projects (communities)	3, 12, 16
Waste Reporting & Statistics	3
Controlled Substances & Producer Responsibility	1, 4, 5, 8, 9, 11, 12
Hazardous Waste Prevention	2, 4, 5, 14
EPA Research Programme & other EPA activities	2, 3, 4, 5, 6, 12, 15

¹ Further detail regarding alignment of Ireland's NWPP to the Waste Framework Directive is available at www.epa.ie/pubs/reports/waste/prevention

² Coakley T. et al.; 2014; *Roadmap for a National Resource Efficiency Plan for Ireland*, EPA Research Programme.

Resource Efficiency & Waste Prevention

This section represents the major part of the resource efficiency and waste prevention activities as funded through the Environment Fund. Our work in this area is focused on a series of measures that comprise a cost-effective programme of **funded-activities & projects** that supports communities & businesses in making well-informed choices on waste prevention and resource efficiency; and b) providing **leadership & advocacy** on waste prevention and resource efficiency to support national environmental, social and economic resilience.



Generally, the emphasis will be on those activities with greatest potential to reduce waste and deliver savings – based on review of project performance in association with the National Waste Prevention Committee. Additionally, we will continually seek to identify new opportunities & sectoral partners to promote resource efficient behaviours. Our work will focus on four thematic priorities:

- ▶ Promoting Efficient Use of Resources in Business (Water, Material, Energy)
- ▶ Minimising Food Waste and Promoting Efficient Water Use in Homes and Communities
- ▶ Maximising Re-use & Recovery of Resources and Preserving Natural Capital
- ▶ Encouraging Behaviour Changes to Normalise Resource Efficiency

Innovations and Developments in the programme include:

- ▶ Establishment of a research fellowship dealing with behaviour change challenges and solutions
- ▶ Securing sectoral co-funding for support of resource efficiency programmes - Advocacy for the development of a national Raw Material Strategy
- ▶ Working with facilities regulated by the EPA to adopt resource efficient behaviours
- ▶ Increased emphasis on re-use activities to preserve natural capital
- ▶ Expansion of the 'whole of activity' Smart Farming programme
- ▶ Transition of well-developed projects from grant-aid funding to self-sustaining programmes
- ▶ Funding research to build knowledge in support of implementation
- ▶ Examining new business models to stimulate a circular economy and achieve resource efficiency
- ▶ Working in partnership with the newly-established Waste Management Planning Regions
- ▶ Promoting a 'help people to help themselves' approach through sectoral champions/ambassadors

Over the course of this programme, we will advance our objectives by applying our own knowledge and experience; by engaging specialist technical expertise; and by using a partnership approach (with businesses and societal organisations). Specifically, we will do this by implementing an integrated suite of activities across three strands:

Stimulating Innovation for Efficiency by...

Providing expertise and financial backing for existing successful initiatives to support resource efficiency & waste prevention in businesses and in public sector organisations - including *Green Business*; *the Local Authority Prevention Network*; and the *Stop Food Waste* programme.

Developing projects to engage priority sectors, building on successful activities such as *Green Healthcare*; *Green Hospitality*; and *Smart Farming*.

Horizon scanning to identify novel approaches for achieving our objectives - including a focus on efficient production processes to prevent loss of raw materials in processing through the *Green Enterprise* programme.

Transitioning well-developed projects from grant-aid funding to self-sustaining programmes.

Articulating case studies and demonstrations to actively promote cost savings and environmental benefits.

Formulating new business models and protocols for social enterprises and SMEs undertaking re-use operations.

Reviewing our project portfolio regularly to ensure an agile response to emerging and priority sectors such as those identified in national recovery planning (e.g. tourism and agrifood).

Shaping and Influencing Behaviours by...

Engaging stakeholders, including national authorities, NGOs & the general public, on the formulation & delivery of the programme through a systematic communications plan.

Communicating through the National Waste Prevention Committee and other bodies on resource efficiency and waste prevention, to mainstream best practices.

Outreaching to householders on issues including food waste and water saving through community networks; local champions; schools; and through traditional media (local radio, newspapers).

Maintaining effective dissemination of resource efficiency and waste prevention messages, including through the internet and developing media.

Recognising the value of networking with other sectors and organisations that interact with the environment and using the strong links with national and international networks built-up over the past number of years.

Engaging with national strategies and actions aimed at delivering a resource efficient Ireland including Green Public Procurement; and eco-design (for re-use or re-manufacture).

Building and Sharing Knowledge by...

Developing indicators (both quantitative & qualitative) for waste prevention & resource efficiency.

Generating metrics for re-use and industrial symbiosis activities.

Funding desk-based research to deliver the theory and evidence to underpin practical activities.

Exploring the social impacts associated with resource efficiency behaviours.

Establishing a research fellowship dealing with challenges and solutions for achieving the behaviour changes associated with sustainable consumption & production choices.

Focusing on peer-to-peer learning through networks, workshops and training - directly through NWPP activities and also through sponsorship of sectoral leaders.

Waste Statistics

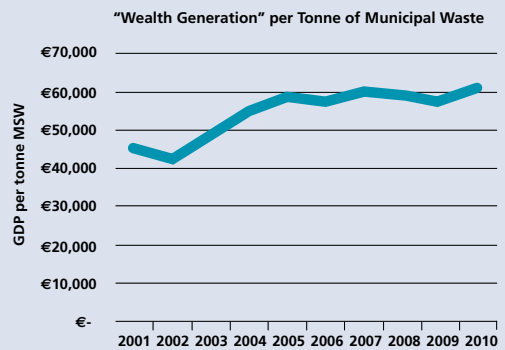
It is critical to know the quantities and types of waste arising in order to provide the context for the prevention programme. While resource efficient behaviours and waste prevention can generally be difficult to measure, there are a number of indicators that can give a direct measure of, or good 'proxy' for, the 'wastefulness' of society. Waste generation – compared to economic activity – is considered to be the closest approximation to measuring quantitative waste prevention. Four useful indicators in this context are:

- ▶ Household waste generation per person
- ▶ Societal wealth generation and waste (*shown, right*)
- ▶ Total national waste per person
- ▶ Industrial economic productivity and waste generation

The EPA's annual National Waste Report series provides information on municipal waste generation and management, as well as information on waste streams subject to Producer Responsibility Initiatives (packaging, waste electrical and electronic equipment, end of life vehicles and batteries), hazardous waste and construction & demolition waste. The provision of accurate and timely information on waste arisings is critical to the effective management and prevention of waste on a national and regional basis. This enables these efforts to be effectively targeted at the prevention, recycling and management of priority waste streams. A critical part of this process is waste characterisation to profile waste arisings especially from smaller sources (e.g., households and small business).

Over the course of this programme, we will continue to service national and international reporting needs - providing a robust and current information-base to support evidence-based decision-making. We will pursue efficiencies through collaboration with other government bodies; increased use of e-reporting; and by making our data available in-line with the principles of Open Access.

In parallel with reporting of waste arisings and trends, we will work to develop robust and informative metrics for waste prevention, material re-use & more generally, resource efficiency. We will work with the European Environment Agency, Eurostat, and others on the development of suitable indicators that effectively report progress in this area. At a macro-level, these statistics need to accommodate particular attributes of our economy; including significant agriculture & mining sectors, and the influence of multinational profit-flows on GDP. On a micro level, our metrics need to be accessible and meaningful for those using them, such as small business operators and local authorities.



Waste Prevention & Resource Efficiency

Waste Prevention is a critical part of resource efficiency and addresses not just 'waste' but wastage of resources in the broadest terms. Reducing inefficient or inappropriate use of raw materials and resources clearly offers a more sustainable path to prosperity and reduces environmental impact. Prevention of waste is at the pinnacle of the waste hierarchy and may be achieved through reducing the overall demand for goods and services and/or by imposing production efficiency through using less (or at least less harmful) materials throughout the life-cycle of a product or service.

The *Waste Management Act* (No. 10 of 1996) requires that persons conducting any activity of an agricultural, commercial or industrial nature shall have due regard to the need to prevent or minimise the production of waste. Building on this, the *Waste Directive Regulations* (SI 126 of 2011) include an obligation on the EPA to establish a waste prevention programme. Published by the Department of Environment, Community and Local Government (DECLG) in 2012, *A Resource Opportunity* provides a roadmap for the future of waste management in Ireland. The guiding principles of this policy include waste prevention & minimisation and re-use, recycling and recovery of materials. This policy approach is further incorporated into regional waste planning through requirements to prevent or minimise the production [and harmful nature] of waste; and to encourage and support the recovery of waste.

Controlled Substances and Producer Responsibility

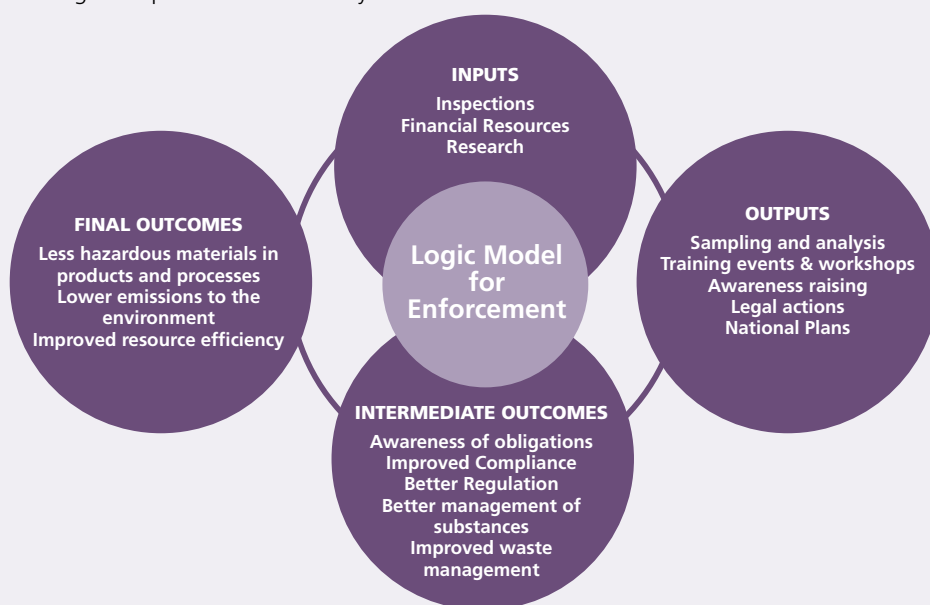
Operating within the envelope of the NWPP, the Controlled Substances and Producer Responsibility unit has responsibility for a wide variety of enforcement functions. This work impacts a large diffuse population of industrial, commercial, farming and retail enterprises; and the general public. The work is broad-ranging and includes **Producer Responsibility Initiatives (PRIs)** under the WEEE and Batteries Regulations. In addition the unit regulates and reports on **controlled substances**:

- ▶ Ozone Depleting Substances (ODS) and Fluorinated Greenhouse Gases (F-gases)
- ▶ Coal Bagging Operators and Fuel Suppliers
- ▶ Paints, Varnishes, Vehicle Refinishing Products and Activities
- ▶ Polychlorinated Bi-phenyls (PCBs)
- ▶ Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment
- ▶ Persistent Organic Pollutants (POPs)

In addition to its own enforcement functions we also provide guidance to local authorities in relation to certain aspects of enforcement (e.g. guidance on WEEE and batteries enforcement).

In terms of the objectives of this programme, we will work with the DECLG and business groups to promote and develop PRIs in priority areas including End of Life Vehicles; Tyres; and Agri-chemicals. We believe that future development of PRIs should place significant emphasis on prevention in the design and operation of all schemes. In particular, compliance schemes should incentivise their members to place products on the market that have an extended service life and that then facilitate re-use, or easy recycling, after this.

In terms of the controlled substances we will continue to pursue a targeted enforcement strategy that combines inspections & sanctions with guidance & awareness raising (*shown, below*). With respect to POPs, we have prepared a National Implementation Plan in line with Ireland's obligations under the Stockholm Convention. As competent authority for ODS and F-gases, we will seek to eradicate Halon use; promote leak checking and certification of contractors to reduce emissions to the atmosphere of ODS and F-gases to limit climate change and protect the ozone layer.



Delivering Value from Resource Efficiency Investment

In 2012 a review was undertaken by EPA to examine the relevance, efficiency and value of the NWPP activities in the period 2004 to 2012. This review found that NWPP programmes identified over €40m repeatable savings for participant businesses and other organisations whilst at the same time significantly reducing the environmental footprint of participant enterprises and activities. These substantial savings for Irish businesses contribute to boosting competitiveness and securing jobs. The programme also champions waste prevention at county and household levels, through programme of activities delivered with local authorities, NGOs and community groups.

The programme has had a significant impact on national policy as seen from direct references to NWPP in key government documents such as; *A Resource Opportunity; Delivering Our Green Potential; Supporting Economic Development and Jobs – Locally* and *Our Sustainable Future*. Internationally, the EPA NWPP programme is recognised in the EU as a 'market leader' in terms of its approach and the results achieved.

Hazardous Waste Prevention

Hazardous waste is generated by all parts of society; from large industry, to small businesses, farms and households. Prevention is a key objective of the National Hazardous Waste Management Plan (NHWMP) which promotes the reduction in the generation of hazardous waste in the sectors identified as a priority for continued action. These sectors are shown below:

Sector	Typical wastes
Pharmachem	Solvents, other industrial hazardous waste
Agriculture	Waste oils, oily wastes, paints, pesticides, animal healthcare wastes
Healthcare	Healthcare hazardous waste (e.g. dressings, contaminated medical products and other general hazardous waste)
Households	Paint, pesticides, pharmaceuticals, batteries, fluorescent tubes
Publishing & Printing	Ink and varnish waste
Transport	Waste oils, oily sludge, lead acid batteries

Hazardous waste prevention activities under the NHWMP form an important part of Ireland's National Waste Prevention Programme. Using the sectoral approach, we will determine material usage and waste generation profiles; and utilise expert knowledge and financial supports to propose solutions for improved management practices.

Households individually produce small amounts of hazardous waste, such as solvent-based paints, garden chemicals and unused medicines. Cumulatively, amounts can be significant and are often discarded with general household waste or poured down the drain. We will engage householders through the Green Home initiative and through local authorities' awareness activities to make it as easy as possible to legally dispose of household hazardous waste. For **business**, achieving hazardous waste prevention offers a clear route to better compliance with regulation. Key engagement channels for this work will be through the EPA's own licensing teams; government agencies; industry representative groups; and via the Local Authority Prevention Network - which facilitates contacts to small businesses. **Agriculture** is another critical sector and our work here will include the development of bring-centres for farm hazardous waste and the inclusion of hazardous waste in the *Smart Farming* programme - to enable farmers to take steps to reduce use of hazardous materials, while maintaining productivity.

Working with Others

The principal stakeholders in this area represent a broad range of backgrounds and interests. Collaboration is central to the programme successfully influencing behaviours. We will continue to work through partnerships to support actions for sustainable enterprise and lifestyles in Ireland (e.g. Tidy Towns, Green Schools, SEAI).

On the output side, we will use innovative and persuasive communications to engage our target audiences. Our messages will be underpinned by carefully prepared materials that support and guide those adopting new practices and behaviours.

We will work with PRIs to deliver on Ireland's waste prevention obligations. In particular, we will promote an increased focus on the prevention of waste within compliance schemes, for the current priority streams (e.g. packaging, WEEE) and for those identified in future.







BeGreen brings together all of the guides and programmes that have been developed by the EPA and our partners to promote waste prevention and resource efficiency. www.epa.ie/BeGreen

Further reading on the NWPP - including our Annual Reports and annual Implementation Plan are available to download at <http://www.epa.ie/waste/nwpp>



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