# PROGRESS REPORT

on the implementation of the

## National Hazardous Waste Management Plan 2014 - 2020


OES Sustainable Production and Consumption Programme

epa
Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

# ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency (EPA) is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

## The work of the EPA can be divided into three main areas:

Regulation: *We implement effective regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.*

Knowledge: *We provide high quality, targeted and timely environmental data, information and assessment to inform decision making at all levels.*

Advocacy: *We work with others to advocate for a clean, productive and well protected environment and for sustainable environmental behaviour.*

## Our Responsibilities

### Licensing

We regulate the following activities so that they do not endanger human health or harm the environment:

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

### National Environmental Enforcement

- Conducting an annual programme of audits and inspections of EPA licensed facilities.
- Overseeing local authorities' environmental protection responsibilities.
- Supervising the supply of drinking water by public water suppliers.
- Working with local authorities and other agencies to tackle environmental crime by coordinating a national enforcement network, targeting offenders and overseeing remediation.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE), Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Prosecuting those who flout environmental law and damage the environment.

### Water Management

- Monitoring and reporting on the quality of rivers, lakes, transitional and coastal waters of Ireland and groundwaters; measuring water levels and river flows.
- National coordination and oversight of the Water Framework Directive.
- Monitoring and reporting on Bathing Water Quality.

### Monitoring, Analysing and Reporting on the Environment

- Monitoring air quality and implementing the EU Clean Air for Europe (CAFÉ) Directive.
- Independent reporting to inform decision making by national and local government (*e.g. periodic reporting on the State of Ireland's Environment and Indicator Reports*).

### Regulating Ireland's Greenhouse Gas Emissions

- Preparing Ireland's greenhouse gas inventories and projections.
- Implementing the Emissions Trading Directive, for over 100 of the largest producers of carbon dioxide in Ireland.

### Environmental Research and Development

- Funding environmental research to identify pressures, inform policy and provide solutions in the areas of climate, water and sustainability.

### Strategic Environmental Assessment

- Assessing the impact of proposed plans and programmes on the Irish environment (*e.g. major development plans*).

### Radiological Protection

- Monitoring radiation levels, assessing exposure of people in Ireland to ionising radiation.
- Assisting in developing national plans for emergencies arising from nuclear accidents.
- Monitoring developments abroad relating to nuclear installations and radiological safety.
- Providing, or overseeing the provision of, specialist radiation protection services.

### Guidance, Accessible Information and Education

- Providing advice and guidance to industry and the public on environmental and radiological protection topics.
- Providing timely and easily accessible environmental information to encourage public participation in environmental decision-making (*e.g. My Local Environment, Radon Maps*).
- Advising Government on matters relating to radiological safety and emergency response.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

### Awareness Raising and Behavioural Change

- Generating greater environmental awareness and influencing positive behavioural change by supporting businesses, communities and householders to become more resource efficient.
- Promoting radon testing in homes and workplaces and encouraging remediation where necessary.

### Management and Structure of the EPA

The EPA is managed by a full time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiological Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet regularly to discuss issues of concern and provide advice to the Board.


# Progress Report

on the implementation of the

## National Hazardous Waste Management Plan 2014 - 2020

OES Sustainable Production and Consumption Programme

August 2018

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil
P.O. Box 3000, Johnstown Castle Estate, County Wexford, Ireland, Y35 W821
Telephone: +353 53 916 0600
Email: info@epa.ie
Website: www.epa.ie
LoCall: 1890 33 55 99



Published by the Environmental Protection Agency, Ireland

Design by Yellowstone

August 2018

ISBN: 978-1-84095-791-4

## ACKNOWLEDGEMENTS

This Progress Report on the implementation of the revised National Hazardous Waste Management Plan (NHWMP) (2014-2020) was prepared by the Environmental Protection Agency (Project Team: Jane Kenneally, Patrick Geoghegan (lead) and Martin Doyle).

The Project Team wishes to thank their colleagues, Dr. Eimear Cotter, Dr, Tom Ryan, Dr. Shane Colgan, Dr. Maria Martin and cross-office teams for their assistance in preparing this report.

The EPA wishes to similarly acknowledge the following organisations for their contribution to the development and implementation of the current National Hazardous Waste Management Plan and for their input into this progress report:

- Department of Communications, Climate Action & Environment (DCCAE) for providing advice and guidance
- Members of the Regional Waste Planning Offices
- The members of the National Waste Prevention Committee hazardous waste sub-group 2015-2017 representing; Biopharmaceutical Ireland, Health Service Executive, DCCAE, Irish Waste Management Association, Engineers Ireland, Southern Waste Region Management Office and EPA colleagues who willingly gave up their time and provided their expertise to assist with the progression of specific tasks within the plan.

Cover Images: Jane Kenneally: one-day waste collection events (various)
Stephen Tracey: waste containers

# Table of Contents

# EXECUTIVE SUMMARY

This report sets out the progress on the implementation of the revised National Hazardous Waste Management Plan (NHWMP) (2014-2020). The recommended actions (27) were identified as priorities upon publication of the Plan in 2014 and should be undertaken within the lifetime of the Plan.

The priorities and actions are centred on administrative arrangements, prevention, collection of hazardous waste, infrastructure and self-sufficiency, regulatory measures, legacy issues, North-South initiatives, guidance & awareness and Plan implementation.

The principal owners responsible for implementation and monitoring of the revised Plan are the Department of Communications, Climate Action and Environment (DCCAE), the Environmental Protection Agency (EPA) and Local Authorities, each with distinctive roles and responsibilities.

Considerable progress has been made on the implementation of the NHWMP with 23 of the 27 recommended actions in progress or completed, and most of the remaining actions on-track to be progressed within the timeframe of the plan. Areas of note include:

- the successful farm hazardous waste collections;
- the introduction of collection days for household hazardous waste;
- completion of the inventory of the national hazardous waste recovery and
- disposal capacity and guidance for the management of household hazardous waste at civic amenity sites.

The EPA continues to promote the use of cleaner technologies and waste prevention under the activities of the National Waste Prevention Programme such as Green Healthcare, Green Business, Local Authority Prevention Network (LAPN) and Smart Farming. In the area of waste collection, producer responsibility initiatives have led to increased collections of WEEE and batteries and one-off collections. In addition, household and farm waste have resulted in controlled management of specific hazardous waste streams. In the regulatory area, the EPA led market surveillance campaigns carried out in the period 2014-2017 has increased compliance with the RoHS, POPs and REACh[1] directives and regulations.

However, this report identifies the need for greater focus on the recommended actions that remain at risk;

(i) developing a network of collection and transfer facilities to suit user needs to capture small-scale quantities of legacy wastes (e.g. asbestos arisings from DIY and small contracting jobs -Action item No. 10(ii)

(ii) providing increased hazardous waste collection facilities and appropriate awareness raising for households and small businesses-Action items No. 10(i) & 11

(iii) the development of new producer responsibility obligations or initiatives for certain hazardous waste streams (e.g., take back schemes) - Action item No.12

(iv) increasing Ireland's level of capacity for self-sufficiency with regard to the treatment and management of hazardous waste- Action item No. 14(ii).

(v) Carry out a study to evaluate and recommend an appropriate regulatory mechanism and relevant guidance for the management and disposal of spent sheep dip-Action item No. 25.

(vi) Greater development of waste stream and sector specific indicators-Action Item No. 26

1 Registration, Evaluation, Authorisation and Restriction of Chemicals.

In particular, it is important that the management of significant quantities of hazardous fly ash from waste-to-energy plants and the associated infrastructural capacity needs are prioritised in the context of Ireland's self-sufficiency.

# 1. INTRODUCTION

This report sets out the progress on the twenty-seven (27) recommended actions within the revised National Hazardous Waste Management Plan (NHWMP) (2014-2020). These actions were identified as priorities upon publication of the Plan in 2014 and should be undertaken within the lifetime of the Plan.

The purpose of these actions is to improve the management of hazardous waste, taking account of the progress made since the previous plan and the waste policy and legislative changes that have occurred in the interim.

The NHWMP's recommended actions are centred on: the prevention of hazardous waste; improved collection of certain categories of hazardous waste; the steps required to improve Ireland's self -sufficiency in the management of hazardous waste and the continued identification/regulation of legacy issues.

The Plan also includes ten (10) targets as management indicators; environmental indicators which are subject to external drivers such as market forces; legislative and policy developments and technical innovations. Progress on these indicators are listed in Appendix 2.

The development of this progress report involved a collaborative approach with contributions from relevant organisations such as DCCAE, local authorities and the National Waste Prevention Programme. The SEA Directive requirements do not apply to this progress report as no changes are being proposed to the current NHWMP and no new recommendations are being introduced.

## 2. CONTEXT OF HAZARDOUS WASTE GENERATION AND MANAGEMENT

The EPA National Waste Reports and more recently, the Agency's web resources, provide data on Ireland's waste generation and management including hazardous waste. The largest quantity of hazardous waste is generated by Irish industry (waste management, construction, mining and households) and includes materials such as solvents, waste oils, industrial sludges, thermal treatment residues and chemical wastes. Households, small businesses, farms and the healthcare and construction sector also generate quantities of hazardous waste. Figure 1 below shows the top four (4) hazardous waste types managed at Irish waste facilities, the total of which accounts for 64% of all hazardous wastes managed in Ireland during 2016. The remaining 36% consists of other chemicals wastes, waste paint, contaminated packaging and sludges[2].

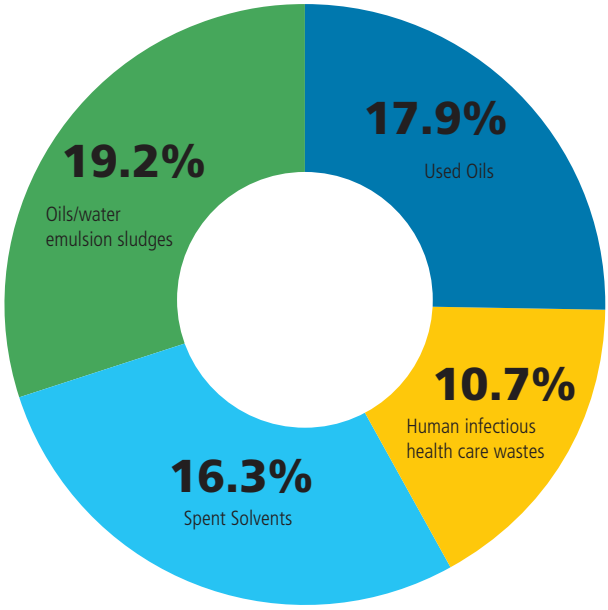



Figure 1: Hazardous waste managed at Irish commercial[3] facilities, 2016

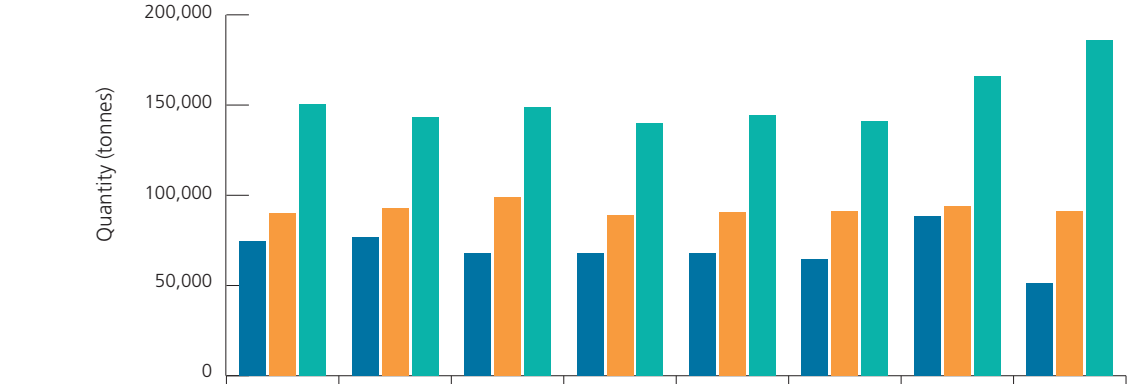
In a European context, the European Environment Agency (EEA) report on *'Prevention of hazardous waste in Europe-the status in 2015'* indicates that approximately 4% of the 2.5 billion tonnes of waste generated in the EU-28 in 2012 is classed as hazardous. In Ireland, the average generation of hazardous waste per person is 62kg[4], well below the EU average of 200kg per person. The largest volumes of hazardous waste are generated by the waste management, construction, and mining and quarrying sectors, as well as households.

2 Refer to Figure 2 for further breakdown of total hazardous waste managed

3 Commercial operator is one who accepts waste from third parties for treatment (as opposed to an industrial activity with facilities for the treatment of waste arising from their own processes, such as on-site incineration).

4 Average hazardous waste figure is derived from both commercial and household sectors.

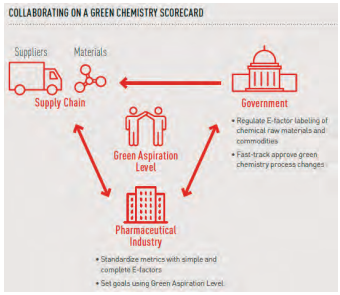
In Ireland, in 2016, 371,000 tonnes of hazardous waste was generated[5], with 409,000 tonnes of hazardous waste managed in Ireland. Almost 186,000 tonnes[6] was exported which is an increase of 11 % on 2015 and 6% on 2014. This is mainly due to a large increase in the export of cement kiln dust and healthcare waste. Figure 2 below sets out trend data for hazardous waste treated on-site, off-site within Ireland and exported outside of Ireland.




| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| On-site at industry (t) | 74,668 | 76,655 | 67,772 | 68,100 | 68,100 | 64,752 | 88,121 | 51,013 |
| Off-site in Ireland (t) | 89,992 | 93,048 | 98,838 | 88,866 | 90,401 | 91,256 | 93,778 | 91,083 |
| Exported | 150,395 | 143,180 | 149,037 | 139,872 | 144,321 | 141,126 | 165,920 | 186,000 |

Figure 2: trend data for hazardous waste treated on-site, off-site within Ireland and exported outside of Ireland.

In terms of waste disposal, almost 64,000 tonnes (34%) of exported waste went for disposal while 122,000 tonnes (66%) went for recovery. 90% of the total exported waste was transported to Great Britain, Germany or Belgium[7], a similar trend to previous years.




Solvents accounted for 37% of exports, followed by waste electrical and electronic equipment (13%) and batteries and accumulators (9%). The UK accepts hazardous waste from Ireland for both high temperature incineration and disposal under exception to their import ban on hazardous waste for disposal[8] due to Ireland's deficit in hazardous waste final treatment infrastructure. However, there remains some uncertainty surrounding what impacts there will be post Brexit and any future trade agreements[9].

Waste solvent generation has been in general decline since 2006, falling by ca. 11.4% in the period 2006-2014. Recent statistics confirm this downward trend in solvent waste generation is continuing[10]. CSO data show production volumes and turnover in the pharmaceutical industry are increasing. This would suggest that a shift from solvent-based chemistry to water-based chemistry in the biopharma industry, is the main contributor to the reduced quantities of solvent waste being generated (see appendix 1 for details of Eli Lilly case study in solvent waste reduction).

5 Hazardous waste generated figure discounts (a) hazardous waste partially treated waste for export, (b) onsite treatment with recovery (R2) code and (c) waste imported for treatment. Generated (rather than managed) figure is reported for Ireland under Basel Convention requirements.

6 Figure includes contaminated soil. Exclusion of contaminated soil brings exports to 50% of total hazardous waste managed in Ireland.

7 Great Britain & Northern Ireland, 51%, Germany 21% & Belgium 17%

8 UK Plan for Shipments of Waste, 2010: *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69546/pb13770-waste-shipments.pdf*

9 *https://ec.europa.eu/info/publications/withdrawal-united-kingdom-and-eu-rules-use-eu-waste-law_en*

10 *http://www.epa.ie/nationalwastestatistics/hazardous/*

The quantities of contaminated soil generated in Ireland have increased tenfold since 2012. The tonnage of contaminated soil managed increased from 8,000 tonnes in 2012, to 20,000 tonnes in 2015 to 81,000 tonnes in 2016 attributed to the upturn in the construction industry. Less than 1,000 tonnes was treated in Ireland and the rest was exported for final treatment. Over 90% was exported to Belgium and Germany. The Construction Industry Federation "Outlook on the Construction Sector", in 2016 predicts that the average annual growth rate for the sector in the period 2016-2020 is projected at 9.1%.

## Treatment of hazardous waste

The routes of treatment for hazardous waste have been relatively stable over time and there will continue to be a requirement to export some hazardous wastes for treatment where there is no or limited existing capacity in Ireland, e.g. treatment of hazardous waste batteries and accumulators, asbestos and mercury wastes and thermal treatment residues.

Authorised hazardous waste treatment in Ireland is carried out either on-site at the industrial facility where the waste was generated (under the relevant conditions of an EPA licence) or offsite at authorised waste treatment facilities. Approximately half of the total waste managed is exported for treatment. The other half is managed onsite or transferred offsite for disposal/recovery within Ireland. In terms of hazardous waste arising in Ireland, a comparison between 2012 and 2016 data is included in Figure 3 below, showing overall increases in hazardous waste arising, hazardous waste exports, offsite treatment in Ireland and a decrease in onsite treatment in Ireland.

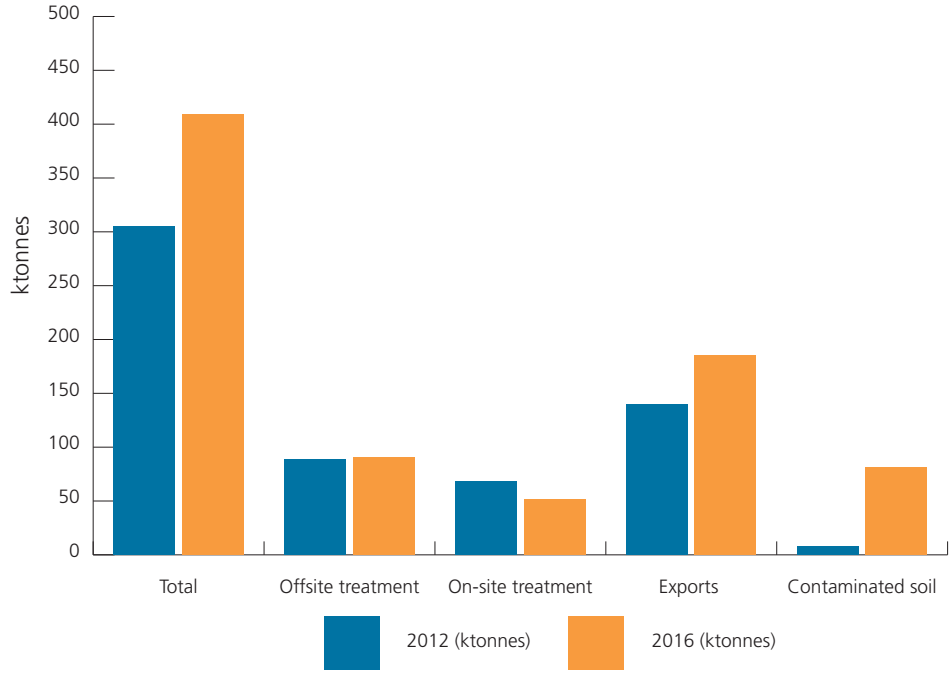
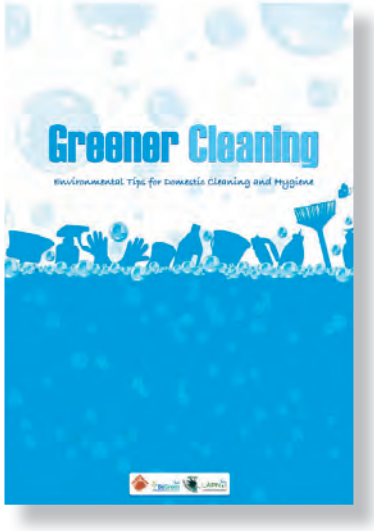



Figure 3: Comparison of hazardous waste managed (off site & onsite), exported and contaminated soil, 2012 and 2016.

## Hazardous waste prevention

Ireland's National Waste Prevention Programme has developed a suite of programmes that have been put in place by the EPA, Local Authorities and other partners to promote waste prevention, resource efficiency & behavioural change through the provision of various resources (e.g case studies, factsheets and guidance). These programmes provide homes, business and other sectors of society with ways in which they can participate in making Ireland a more sustainable country while saving themselves money. Hazardous waste prevention has been highlighted as part of two recent projects:





## Local Authority Prevention Network (LAPN)[11]

LAPN continue to deliver useful waste prevention resources for industry, small business and the communities. Two recent publications, Greener Gardening and Greener Cleaning guides demonstrate how to make environmentally friend cleaning and gardening products, thus reducing hazardous substances often contained in these types of products.

## Green Healthcare

Green Healthcare identified that 34% of the healthcare risk waste was non-contaminated clean material. Factsheets to assist with the correct disposal of healthcare risk waste have been produced and are available at *www.greenhealthcare.ie*

11 *http://southernwasteregion.ie/publications*

# 3. PROGRESS ON IMPLEMENTING PLAN RECOMMENDATIONS

The 27 recommended actions made in Section 8.1 of the revised National Hazardous Waste Management Plan (NHWMP) are presented in summary below. These actions arise from the analysis and considerations included in the revised Plan and are centred on administrative arrangements, prevention, collection of hazardous waste, infrastructure and self-sufficiency, regulatory measures, legacy issues, North-South initiatives, guidance & awareness and Plan implementation.

The principal implementation and monitoring bodies for the revised Plan are the Department of Communications, Climate Action and Environment (DCCAE), the Environmental Protection Agency (EPA), and Local authorities, each with distinctive roles and responsibilities.

For the purposes of this progress report, a colour coded tracker (below) has been developed to outline indicative progress against each of the recommended actions:

| | |
|---|---|
| On track | 23[12] |
| Not yet commenced | 2 |
| At risk | 3 |

## Administrative Arrangements

1. **Local authorities should consider the information provided in this revised Plan and, in accordance with Sections 22(8) and 26(6) of the Waste Management Act 1996, as amended, take relevant recommendations of this revised plan into account in their revision and implementation of the regional waste management plans, as well as regional planning guidelines and regional and area development plans.**

   *Responsible: Local Authorities*

   In 2012, the Government's blueprint for a circular economy, as set out in '*A Resource Opportunity- Waste Management Policy In Ireland*', established a new framework for the provision of effective and efficient waste management services through the establishment of three new waste management planning regions. The three regions produced management plans in 2015 with the objective of setting out a framework for the prevention and management of waste and hazardous waste for their defined regional areas. The overarching policy objectives set out in the plans include the promotion of prevention of hazardous wastes to households, communities and small businesses and ensuring better segregation of hazardous waste and non-hazardous wastes at the point of collection from households and small businesses.

   On track

2. **Public bodies should be aware of this revised Plan and take its provisions and recommendations into account in their execution of their environmental protection, industrial development and other functions, with the objective of improving their own hazardous waste management and that of their clients, customers and stakeholders.**

   *Responsible: All public bodies*

   This general recommendation is an enabling one, set out in Section 26(5) of the Waste Management Act, as amended, seeking the support of all public bodies generally in the implementation of the NHWMP. To optimise efforts, further prioritisation of hazardous waste

12 Recommended action #10 contains two parts 10 (i) & 10 (2)

prevention should be considered at the work planning stage for all relevant stakeholders. The EPA continues to assist and support other Government bodies where appropriate. For example, the dissemination of the Green Public Procurement guidance was targeted at stakeholders within relevant Government bodies including Department of Public Sector & Reform, Association of Chief Executives of State Agencies, Office of Government Procurement and Local Government Strategic Procurement Office to assist with the effective roll out and use of guidance document[13].

On track

## Prevention

The EEA examined waste prevention measures across EU member states[14] and found that most of the measures in programmes are linked to production regulations, including bans on toxic materials. The prevention of hazardous waste was mostly covered by the national waste prevention programmes, although some countries, including Germany, preferred to deal with it separately. In general, the study found that prevention of hazardous waste at national or regional level lags behind its management in terms of political priority or support.

In term of recommended actions in the NHWMP the following prevention actions are set out below (actions 3-9):

3. **Continuously engage with priority sectors (pharmaceutical, health, agricultural, household, transport and publishing & printing) and communities (e.g. via the Local Authority Prevention Network) on hazardous waste prevention activities as detailed in the revised plan.**

   *Responsible: EPA, local authorities and relevant sectoral organisations*

   The EPA National Waste Prevention Programme (NWPP) considers the NHWMP recommended actions and integrates these within all relevant prevention projects. These projects include the Green Business, Local Authority Prevention Network and Green Healthcare (see NWPP Annual Report 2017). Further to recent farm and household hazardous waste collections, paint waste remains to be a problematic hazardous waste for both households and business. Currently most paint waste is managed and reported as hazardous waste which is at odds with circular economy ambitions considering many paint formulations such as emulsions are generally non-hazardous. However, there are some new initiatives on prevention of paint waste such as Rediscover Paint[15] which collects and re-distributes non-hazardous paint to community groups, and the Southern Waste Region have completed some significant work on the prevention and management of paint waste[16] and such progressive work should be considered for roll out nationally.

   On track

13 DCCAE, Press release, December 2017 *https://www.dccae.gov.ie/en-ie/news-and-media/press-releases/Pages/Government-spending-has-potential-to-deliver-on-climate-change.aspx*

14 Prevention of hazardous waste in Europe-the status in 2015, European Environment Agency (EEA)

15 http://www.rediscoverycentre.ie/rediscover-paint

16 Guidance developed for households provides a ready reckoner and an aid to differentiate between hazardous v non-hazardous waste paint *http://southernwasteregion.ie/content/are-you-paint-squirrel*

4. **Incorporate the prevention of the generation of hazardous waste into the National Waste Prevention Programme and the implementation measures within the Regional Waste Management Plans.**

   *Responsible: EPA, Local authorities*

   The current National Waste Prevention Programme (NWPP) builds on the strengths and achievements of the previous programmes. A number of successful actions on hazardous waste have been progressed through the NWPP and Local Authority Prevention Network (LAPN) – most notably the *Farm Hazardous Waste Collections*; but also some other important outputs such as the *Smart Garage Guide*; *Greener DIY*; and the twin *Greener Cleaning* and Greener Gardening guides[17].

   The three Regional Waste Management Plans include some relevant measures on hazardous waste prevention as follows:

   - Harmonise prevention activities in the region to link with the NHWMP, producer responsibility operators and other related programmes (such as litter, sludge and water).
   - Investigate the opportunity to establish and expand management schemes for particular hazardous and non-hazardous waste streams including (but not limited to) paints, medicines, mattresses, other bulky wastes, agricultural & horticultural chemicals and waste oils (where technically, environmental, and economically practicable).

   On track

5. **Engage with businesses towards achieving hazardous waste prevention, cleaner technology and better compliance with regulation.**

   *Responsible: EPA, Local Authorities*

   EPA licences include conditions to provide for the efficient use of resources for all site operations through the implementation of appropriate Environmental Management Systems. Improvements are self-reported as part of the licensees Annual Environment Report (AER).

   The EU REACh Regulation requires companies to substitute substances of very high concern with less hazardous substances or technologies. The Health and Safety Authority (HSA), EPA and the Minister for Agriculture Fisheries & Food have been designated under the Chemicals Act 2008 as the competent authorities for the implementation of the REACH Regulations. The EPA runs an internal market surveillance programme under which obligations under REACh, Persistent Organic Pollutants, and Restriction of Hazardous Substances (RoHS) Regulations are monitored.

   In 2017, the EPA investigated 27 Rapid Alert (RAPEX) notifications (18 POPs related, 3 REACh and 5 RoHS related) involving inspections of economic operators' premises. Twenty additional samples (general household items) were tested for compliance under relevant provisions of the REACh Regulations. The EPA continues to carry out surveillance to ensure compliance with the respective obligations and participates in an Inter Departmental Government/Agency group on chemicals, chaired by Department of Business, Enterprise & Innovation. As the lead competent

17 Further details on Greener Gleaning and Greener Gardening can be found in the Hazardous Waste Prevention Section of this report or on *www.lapn.ie*

authority under REACh, the HSA also operates a dedicated helpdesk to assist industry in fulfilling its obligations under REACH[18]. Further information on EPA's market surveillance projects can be found in Table 3. Work under this recommended action is ongoing.

On track

6. **In implementing the Green Public Procurement Action Plan provide for the substitution or reduction in use of hazardous materials and products in public procurement (eco-design).**

*Responsible: All public bodies*

The DCCAE engages with the Office of Government Procurement to promote the implementation of Green Public Procurement. The EPA provides support to the DCCAE in these contacts. Progress to date in this area has been slow.

In 2014, the EPA published a guidance document to assist the public sector to implement and maintain procedures for green public procurement. The guidance encourages the purchase of goods and services with a reduced impact on the environment throughout their life-cycle – including the avoidance and/or appropriate management of hazardous substances.

The DCCAE has become a partner in GPP4Growth[19] along with 8 other public authorities across the EU member states. Over the next two years the project will help to identify best practice, improve training and raise awareness to help increase the green spend. In 2018, DCCAE plan to hold a number of stakeholder events across the country and will also host a study visit for all project partners focusing on best practice examples of GPP in Ireland.

On track

7. **Carry out waste characterisation studies, via the National Waste Prevention Programme, to profile hazardous waste content of arisings from smaller sources (e.g., households and small business).**

*Responsible: EPA*

The EPA initiated a characterisation study of municipal waste in late 2016, results of which will be reported in the latter half of 2018. As part of the scope of the study, the composition and quantity of household hazardous waste will be examined. Characterisation studies on waste arising from small businesses will be undertaken in the remaining period of the plan. Characterisation studies undertaken should, where possible, be aligned with the need for sectoral indicators to assist with monitoring of waste stream specific indicators (Refer to recommended action #26).

On track

18 *http://www.hsa.ie/eng/Chemicals/REACH/*

19 GPP4Growth, initiative of Interreg Europe, bringing together nine partners from nine countries, to exchange experiences & practices and improve capacities on implementing resource efficiency policies that promote eco-innovation and green growth through Green Public Procurement (GPP).

8. **With support from producer responsibility initiatives, carry out studies on relevant waste streams, (e.g. packaging, WEEE), to determine if product-based legislation is having its desired effect and the hazardousness of related waste streams is reducing.**

   *Responsible: EPA, in collaboration with other organisations (e.g. Producer Responsibility Initiative stakeholders)*

   Hazardous waste can be prevented by reducing the "hazardousness" or hazardous components/ ingredients in products during design and production. The revised Waste Framework Directive includes within its definition of actions for prevention "the content of harmful substances in materials and products".[20] The EPA are planning a sampling campaign, as part of a framework agreement, in 2018 to assess the level of hazardousness of products/substances against applicable legislation The EPA plans to sample specific categories electrical and electronic equipment (EEE) with the support from PRI stakeholders to check if waste EEE is less hazardous since the introduction of RoHS Regulations in 2006.

   On track

9. **Assist relevant Departments and Agencies to examine the feasibility of alternatives to the current diesel fuel marking system that can help eliminate illegal diesel laundering operations and prevent the generation of hazardous waste and associated environmental clean-up costs arising from such activities.**

   *Responsible: DCCAE, in consultation with relevant stakeholders (e.g. Office of the Revenue Commissioners)*

   Enforcement in relation to illegal diesel laundering activities is primarily a matter for the Revenue Commissioners from the point of view of avoiding loss of revenue to the Exchequer. The DCCAE assists local authorities in carrying out their role as competent authorities under waste legislation, which is to take the necessary measures, on behalf of the State, to ensure that any waste generated and left abandoned by the diesel launderers is disposed of without endangering human health and without harming the environment, in particular without risk to water.

   Since 2008, there have been over 1,000 cases of waste dumping as a result of diesel laundering. The Department has provided funding of €7.65 million to local authorities for the substantial costs associated with such disposal over the period 2008-2016. The majority of the clean-up operations have taken place in Louth and Monaghan.

   Regulatory authorities have in recent years implemented a comprehensive strategy to tackle the illegal fuel trade, including the introduction of stringent new supply chain controls underpinning a rigorous programme of enforcement action and supported by a joint initiative to find a new fiscal marker for use in marked fuels, which was introduced in Ireland and the United Kingdom from April 2015.

   These measures have been successful in curtailing fuel laundering in Ireland and have consequently reduced the volumes of fuel laundering waste being illegally deposited. An analysis of the fuel marker undertaken by Revenue[21] indicates that the wide-ranging programmes of action taken against fuel fraud have had a significant impact on illegal activity.

   On track

20 *https://echa.europa.eu/-/inspectors-find-phthalates-in-toys-and-asbestos-in-second-hand-products*

21 *Comptroller & Auditor General Annual Report, 2015 (Chapter 12)*

## Collection of Hazardous Waste

Since 2015, the DCCAE has administered a grant scheme enabling Local Authorities to provide one-day collections for small-scale quantities of hazardous waste. The scheme is facilitated through the three Regional Waste Management Offices and is linked in to an objective of the 2015-2021 Regional Waste Management Plans to ensure better segregation of hazardous wastes at the point of collection from households and small businesses.

It is estimated that 30,000 tonnes of hazardous waste from households, small businesses and farms go unreported and untreated in Ireland every year (EPA, 2014) .The fate of this waste is unknown, but it is possibly mixed with general household waste, discharged to the environment, presenting an environmental risk. For example, if discharged to water, a single drop of herbicide can breach the drinking water limit in a small stream for 30 km.[22] Furthermore, backyard burning or burning of waste in household fires or stoves is a confirmed method of exposing those nearby and the householders themselves, both indoors and outdoors, to health-threatening amounts of toxic fumes. Burning domestic waste in backyards and in household stoves and fires accounted for 20% of all dioxin emissions in Ireland[23]. However, the magnitude of risks as outlined in the examples above must be considered. There are to date, limited studies on the risk assessment of chemical, chemical mixtures, combined and cumulative exposures. A multi-stakeholder approach is required to assess and advise on risk of environmental and human exposure to hazardous waste. The National Waste Enforcement Steering Committee, currently chaired by DCCAE, are planning to commission a report on a 'Study & Analysis on the Cost of Waste Crime in Ireland' which should assist with the gathering of additional information on unreported waste in Ireland.

Producer responsibility initiatives dealing with WEEE and Batteries are leading to increased collections of these materials some of which are hazardous. There are currently 130 (94 public sector and 36 private sector) civic amenity sites in Ireland[24]. Notwithstanding the once-off household hazardous waste collections, only some of these civic amenity sites are authorised to accept hazardous waste on an on-going basis. The use of civic amenity site infrastructure remains very important for the continued acceptance of household and small scale hazardous waste.

10. **(i) Plan and make provision for resourcing local authorities to develop adequate collection facilities for small-scale quantities of hazardous waste from households and small businesses (e.g. at civic amenity sites, mobile special collections). This could include resourcing through sectoral agreements and the development of potentially new producer responsibility obligations for certain hazardous waste streams.**

    **(ii) Consider the establishment of a network of collection and transfer facilities to capture small-scale quantities of legacy wastes (e.g. asbestos arisings from DIY and small contracting jobs) for environmentally sound management, having regard to the 'polluter pays' and 'waste producer' principles. Engage with stakeholders on the development of appropriate operational conditions for such facilities.**

    *Responsible: DCCAE, Local authorities*

    (i) In response to recommendation 10(i), the DCCAE issued circular WP09.14 to local authorities. The circular focused on one-day collections of small-scale quantities of hazardous waste generated as a consequence of consumption patterns in homes, farms and small businesses.

22 *http://www.epa.ie/pubs/advice/drinkingwater/sourceprotectionleaflets/01987_EPA_PesticidesUse_leaflet_Proof_02.pdf*

23 20% in 2015, covering a variety of emission sources: domestic bonfires, burning of household waste, open burning of wood on construction sites, accidental fires – vehicles, accidental fires – buildings. Update of Inventories of Persistent Organic Pollutants (POPs) in Ireland 2006 - 2015

24 State of Environment report, 2016 *http://www.epa.ie/pubs/reports/indicators/irelandsenvironment2016.html*

In 2015, the DCCAE issued circular WP16.15 notifying local authorities of a grant scheme which provided funding towards the costs associated with running one-day regional collections of hazardous waste. There was substantial take-up of the grant scheme in the first year, with funding totalling €126,761.

Following a review of the scheme, a coordinated approach to the administration of the scheme was adopted in 2016, with the three regional waste management offices overseeing the scheme. The scheme was also improved to facilitate the return of data from the collection days which provided an overview of the type and quantity of products presenting at the collections. Funding for the 2016 scheme totalled €68,943. Analysis of the data returned shows that the largest volume of waste arising at the collections in 2016 and 2017 was paint.

Funding of €100,000 was provided for the continuation of the grant scheme in 2017 and the DCCAE continues to liaise with the three regional waste management offices to enhance and develop the scheme further. In 2017 the collections were held in civic amenity sites and a list of hazardous waste material for collection was developed. This comprised of adhesives, aerosols, anti-freeze, herbicides, household detergents, medicinal waste, mixed fuels, oil, oil filters, paints, pesticides and varnishes. Batteries and WEEE collected at the events will utilise the existing structures within the Civic Amenity Sites system in association with the battery and WEEE compliance schemes. A further one day hazardous waste collection scheme is planned for 2018.

On track

In response to recommendation 10(ii) the DCCAE & National Waste Prevention Programme will consider the progression of recommendation 10(ii) through on-going discussions with the construction industry in terms of C&D waste arising in the State. However, it is acknowledged that further significant work is required to progress the establishment of a network of collection and transfer facilities to suit user needs to capture small-scale quantities of legacy wastes (e.g. asbestos arisings from DIY and small contracting jobs).

At Risk

**11. Continue to carry out awareness raising and enforcement to ensure improved hazardous waste collection from small–scale hazardous waste streams (e.g. waste oils from garages).**

*Responsible: Relevant sectoral organisations, Local authorities*

The EPA and Local authorities continue to engage in enforcement and awareness activities in this regard (e.g. targeted inspections and awareness via national and sector advertisements (e.g. car garages)). The *Smart Garage* guide is to be reviewed, updated and re-circulated to garages. The Network for Ireland's Environmental Compliance and Enforcement (NIECE) continues to be utilised as an appropriate means of co-ordinating concerted actions, guidance, procedures and protocols[25].

25 More information on enforcement activities can be found on the EPA website: *http://www.epa.ie/pubs/reports/enforcement/OEEFoEE2014_8th%20FINAL%20PROOF.pdf* & *http://www.epa.ie/pubs/reports/enforcement/performanceframework/Focus_on_Local_Authority_Environmental_Enforcement_2014-2016_Performance_Report.pdf*

Although tyres are not classified as hazardous, they negatively impact air quality when disposed of via illegal burning. The Waste Management (tyres and waste tyres) Regulations came into effect in September 2017, which impose a new regulatory framework for the environmentally sound management of waste tyres.

On track

12. **Assessment and development of potentially new producer responsibility obligations for certain hazardous waste streams (e.g., a take back scheme for unused or expired human medicines), on foot of the recently established review of producer responsibility initiatives and detailed studies into priority hazardous waste streams.**

*Responsible: DCCAE*

The development of any new PRI obligations should be aligned with all relevant government departments. DCCAE have a role under the current NHWMP of ensuring Government bodies fulfil their roles in the delivery of the Plan objectives. The review of the producer responsibility initiatives published in 2014 identified the following hazardous waste streams for future assessment of suitability for the establishment of a PRI: *Animal remedies & human medicines; Plant Protection Products; Paint & paint packaging; Ink & ink containers;* and *Waste oils & oil filters*.

Under the provisions of current European Union legislation, Article 127b of Directive 2004/27/EC (relating to medicinal purposes for human use), as amended, requires all Member States: "to ensure appropriate collection systems are in place for medicinal products that are unused or expired".

It has been suggested that human medicines should be considered on foot of this review. In assessing if a producer responsibility approach should be applied to waste streams the OECD recommends that the costs of operating a PRI be weighed against the benefits of reduced social costs of waste management including the various externalities associated with landfilling or incineration and the environmental risks associated with "doing nothing" by maintaining existing practices.

The DCCAE is of the view that there is currently insufficient data available to progress this recommendation in so far as it refers to human medicines at this point in time and awaits the outcome of the work of the Hazardous Waste sub-group of the National Waste Prevention Committee (NWPC) in respect of how to progress it. Further research and due regard to the new extended producer responsibility requirements under the revised Waste Framework Directive would also be required before any other PRI could be considered. The EPA has undertaken to investigate and collate further information in this regard.

At Risk

13. **Complete a farm hazardous waste collection pilot project and publish pilot project research findings and recommendations.**

*Responsible: EPA, in collaboration with relevant bodies*


Farm hazardous waste has the potential to cause harm to farmers, livestock and environment due to the nature of their properties such as being toxic, irritant, flammable, carcinogenic, and ecotoxic. The safe disposal of farm hazardous waste is important for every farmer in producing quality assured products for consumers and in supporting the green and smart ambitions[26] of the farming sector.

Since 2013, the FHW collection campaign is a collaborative project led by the Environmental Protection Agency (EPA) working with a cross-government team that includes Teagasc, Department of Agriculture, Food and the Marine (DAFM), Department of Communications, Climate Action and Environment (DCCAE) and local authorities and supported by the Irish Farmers Association (IFA), Bord Bia, hazardous waste contractors, local livestock marts, agri-businesses and rural development groups.


**Figure 4:** Poster map outlining the locations and dates for 2017 Farm Hazardous Waste collections

A total of 9,000 farmers used the 46 collection centres over five years. The total quantity of hazardous and potentially hazardous waste collected was almost 1,000 tonnes. Among the pesticides collected were substantial quantities of highly toxic and persistent substances such

26 Food Harvest 2020; Food Wise 2025

as DDT, Lindane and Endosulfan which are recognised as posing serious risks to both human health and the environment. The main farm hazardous waste types presented by the farmers on a weight basis at the bring centres were as follows:

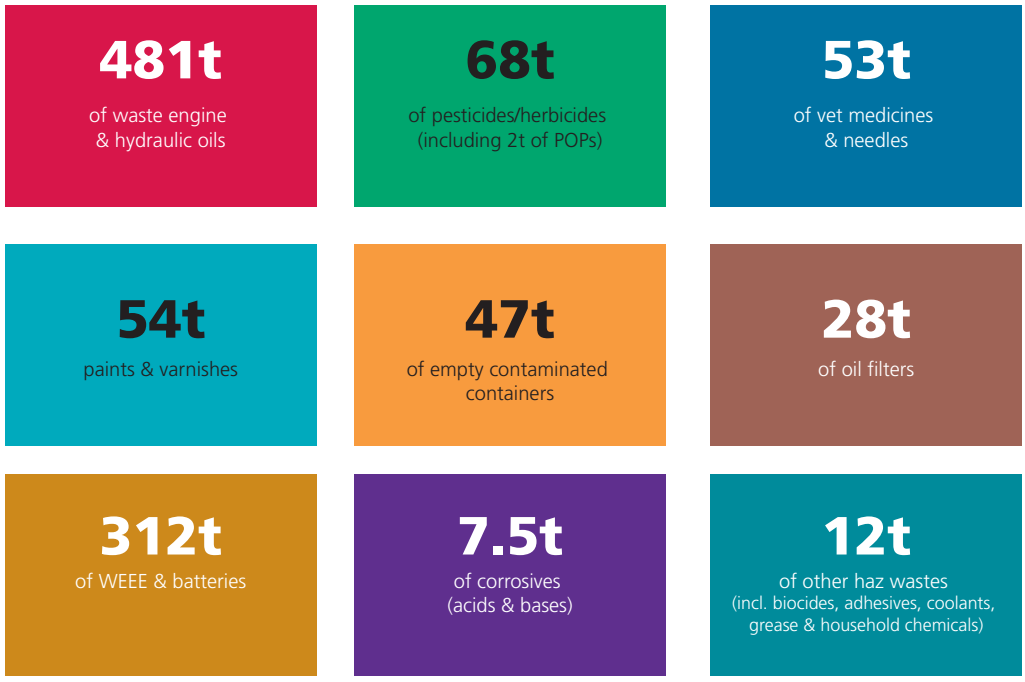



**Figure 5:** Quantities of waste (tonnes) collected during Farm Hazardous Waste Collection days 2013-2017

On track

The CSO carried out analysis on the waste types that were presented by each farm type and farm size. The quantities and waste type that each farmer from each farm type and farm size was recorded to allow analysis to assist in estimating the amount of potentially hazardous wastes that are currently stockpiled on Irish farms. A comprehensive report on the operation of the pilot project 2013-2016 is due for publication in 2018. The pilot project steering group are currently assessing the most suitable way to establish a suitable, sustainable, equitable and affordable national scheme for the collection of farm hazardous waste.

## Infrastructure and self- sufficiency

In keeping with the proximity principle, the NHWMP has an objective of increasing Ireland's level of self-sufficiency regarding hazardous waste management. In particular, the plan includes an ambition to minimise exports where it is environmentally preferable, and feasible from a technical and economic point of view.

14. (i) Keep under review the provision and facilitation of hazardous waste treatment capacity and make recommendations on the appropriate economic or other instruments necessary for such capacity to be provided, either by the private or public sector.

    (ii) Develop national policy or guidance to direct the control of hazardous waste shipments in order to facilitate self-sufficiency in hazardous waste treatment where this is technically, economically, strategically and environmentally advisable.

*Responsible: DCCAE, in consultation with relevant stakeholders*

In response to 14(i) & (ii), hazardous waste destined for recovery and disposal is subject to an open and competitive waste market in the EU, and in that context Ireland faces challenges to achieve complete self-sufficiency given the range of specialist treatments that are required for certain hazardous waste streams. In addition to and in the context of an evolving European market, the lack of economies of scale in the quantities of hazardous waste generated is a challenge to the provision of economically viable hazardous waste treatment facilities in Ireland. The overreliance on any one export market for the treatment of hazardous waste is not advisable.

While the introduction of economic and other instruments to provide incentives to potential investors remains under consideration, Ireland's self-sufficiency for the environmentally sound management of hazardous waste is contingent upon commercial decisions taken by private sector service providers regarding the provision of infrastructure for hazardous waste. The cement industry could potentially provide options for the management of certain types of hazardous waste such as those from blending of solvents, to substitute for fossil fuels, which could assist in the delivery of a greater degree of self-sufficiency for specific waste streams in Ireland in the medium term.

On track

15. **Prepare and maintain, in consultation with various stakeholders, an inventory of national hazardous waste recovery and disposal capacity.**

*Responsible: EPA*

An inventory of our national hazardous waste recovery and disposal capacity was commissioned by the EPA in 2016. The scope of the inventory included the consideration of the availability of hazardous waste treatment facilities and the appropriateness of the available treatment by capacity and location. An important element of developing the inventory was the consideration of the design of a future inventory and how such an inventory could be updated, maintained and accessible to stakeholders in future years. The inventory report confirms the downward trend observed in the production of solvent waste and outlines the possibilities for utilising co-incineration for certain waste types. However, the overreliance on one export market for the treatment and disposal of hazardous waste remains to be a concern.

On track

16. **Consolidate and reform existing regulations where appropriate, and make provision for new hazardous waste regulations where the need becomes apparent during implementation of this revised Plan.**

*Responsible: DCCAE*

The DCCAE continues to keep the legislative framework under review and regulations continue to be consolidated where it is practical and feasible to so do.

On track

17. **Carry out a review of waste licensing and permitting legislation in order to establish a proportionate regulatory mechanism, including relief, to facilitate collection, transport, take-back and temporary storage of certain hazardous wastes arising from small sources.**

    *Responsible: DCCAE, in consultation with relevant stakeholders*

    The DCCAE continues to keep the legislative framework under review. On foot of policy decisions, amendments to the waste licensing and permitting legislation are undertaken where necessary. Relief from the full requirements of the licencing and permitting system continues to be given where it is appropriate to so do, e.g. the exemption provided to retailers under S.I. 149 of 2014, with respect to the transport and storage of WEEE under certain limits. The DCCAE may examine the possibility of an exemption for carriage of small quantities of waste as part of the next review of the Waste Collection Permit Regulations (e.g. transport of healthcare risk waste from small sources (home patients)).

    Subject to available resources, the DCCAE will endeavour to review the existing permit requirements for Preparation for Reuse (P4R) activities as currently, a waste permit is required (e.g. under WEEE), which may not be commensurate with the activity involved.

18. **Cooperate in enforcement activities concerning product based pollution prevention (e.g., Restriction of Hazardous Substances in Electrical and Electronic Equipment, Persistent Organic Pollutants (POPs)).**

    *Responsible: Relevant public authorities*

    Enforcement of this suite of regulations mostly lie with the EPA with some smaller provisions falling to the local authorities. EPA had 3 market surveillance campaigns carried out during period 2014 to 2017. The campaigns covered a total of 70 samples ranging from consumer electronics to general household goods. Except for battery samples, which were tested for substances prohibited under the Batteries Directive only, relevant components of all other samples were tested for substances restricted under the RoHS Directive, POPs and REACh Regulations respectively. Only one sample tested non-compliant, a keyboard, which was subsequently voluntarily withdrawn from the market by the economic operator. The EPA intends continuing with its market surveillance programmes under the relevant Directives and Regulations throughout the Plan's lifetime.

**Table 1:** Market Surveillance campaigns carried out during period 2014-2017

| Year | Sample Type: | Number of Samples: | Number of Non-compliances: |
|---|---|---|---|
| 2015 | Household items (general) | 20 | 0 |
| 2016 | Electrical & electronic equipment | 20 | 1 |
| 2016 | Batteries | 10 | 0 |
| 2017 | Household items (general) | 20 | 0 |

Additionally, the EPA's National PCB Inventory team has worked with relevant Local Authority personnel over the reporting period to ensure certain sites have been inspected under the PCB Directive to ensure any potentially PCB-contaminated equipment is identified. EPA continues to liaise with relevant public bodies on the implementation of the National Implementation Plan on Persistent Organic Pollutants.

On track

## Legacy Issues - Closed Landfills

19. **Identify, assess and, where necessary, remediate sites where hazardous waste was to a significant extent disposed of in the past. This action should conform to the Code of Practice prepared by the EPA's Office of Environmental Enforcement.**

*Responsible: Local authorities*

A web-based system to facilitate local authorities to register for historic waste disposal and recovery sites (under Sections 22 and 26 of the Waste Management Act 1996) was developed by the EPA in 2009. The Section 22 register has an inbuilt "Tier 1" risk assessment which indicates to the local authority whether the site is high, medium or low risk. Further Tier 2 and Tier 3 assessments are then carried out off-line by the local authority and their Qualified Person (as defined in the *EPA's Code of Practice*).

Twenty-nine (of 494) sites on the section 22 register[27] were indicated by local authorities as containing hazardous waste. From these 29 sites, five applications have been made for certificates of authorisation under the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations.

The three waste management regions have agreed a process for the investigation, authorisation and remediation of the remaining high priority sites over the lifetime of the regional plans. The EPA continues to monitor contaminated sites for Persistent Organic Pollutants (POPs) listed under the Stockholm Convention.

On track

## North-South initiatives

20. **Seek to establish, with the appropriate Northern Ireland authorities, a North-South co-operative group working on hazardous waste issues.**

*Responsible: DCCAE*

There are well established structures in existence that provide a forum to deal with a variety of cross border issues, including issues of waste management. The North South Ministerial Council meets in the Environment Sector in order to make decisions on common policies and approaches in a cross-border context in areas such as environmental protection, pollution, water quality management and waste management and is an effective forum to address waste management issues of mutual concern.

On track

27 Information accessed from internal database on 19th June 2018

## Guidance and awareness

21. **Conduct regular awareness and information campaigns (e.g., via social media), to pro-actively update and inform individuals and businesses of available hazardous waste collection services in their areas, as well as their legal obligations. Provide and disseminate practical guidance on the management of sectoral hazardous waste (e.g., household, commercial, farming).**

    Responsible: Local authorities and relevant public authorities and sectoral organisations (e.g.: Department of Agriculture, Food and the Marine)

    Awareness and information campaigns for management of both household and farm hazardous waste were run before, during and after the one day collection campaigns. Targeted social media such as twitter, website, email and text were used to advertise and provide guidance for persons attending these events. Information on prevention of generation of hazardous waste was provided to persons on the collection days. This work will continue and develop over the course of the NHWMP implementation.

    The CSO's Quarterly National Household Survey (QNHS) conducts special modules on different social topics on a periodic basis. In 2014, the CSO, in collaboration with stakeholders such as DCCAE, EPA and Sustainable Energy Authority of Ireland (SEAI) included an environmental module in the QNHS to gain more insight into household environmental behaviours. The results of the survey, released in 2016[28], identified poor management of hazardous and potentially hazardous wastes by householders. Figure 6 below sets out the percentages of household waste that are disposed of in general household waste; or in the case of portable batteries,27% are not availing of the free battery recycling regime:


**Figure 6:** Hazardous Waste or Potential hazardous waste incorrectly disposed of by households

On track

28 http://www.cso.ie/en/releasesandpublications/er/q-env/qnhsenvironmentmoduleq22014/

22. **Prepare up to date factsheets on each of the main hazardous waste streams including information on appropriate management options for such waste streams.**

*Responsible: EPA*

This work will be progressed, along with a website review over the course of the NHWMP implementation.

Not yet commenced

23. **Complete the code of practice/guidance document on the minimum operational and environmental standards for accepting hazardous waste at civic amenity sites and disseminate to local authorities and civic amenity site operators.**

Responsible: EPA

The EPA has published a document entitled "Guidance for the Management of Household Hazardous Waste at Civic Amenity Sites" which is available at www.hazardouswaste.ie. The guidance was developed by the EPA in cooperation with the Health and Safety Authority (HSA) to establish the environmental and operational standards required at CA sites for the acceptance and safe storage of the wide range of hazardous waste streams from households and small businesses. In addition, the EPA developed course materials to train CA site staff in these standards. The Local Authority Services National Training Group have developed training in this regard.

On track

24. **Continue to promote awareness and guidance on the correct management of healthcare hazardous waste (e.g. Green Healthcare Programme) to all HSE employees, as appropriate.**

Responsible: EPA, Health Service Executive

Thirty healthcare risk waste surveys and analysis have been carried out under the Green Healthcare Programme. The programme reviewed the contents of the healthcare risk waste bags to determine the type of materials being disposed; and provided detailed recommendations to the hospitals surveyed on how to reduce their costs relating to healthcare risk waste and to ensure a reduced level of general and recyclable waste entering this stream. The Green Healthcare Programme continues to provide this support to participating healthcare facilities. A 'How-to' guide for Private Nursing Homes and similar-sized Community Nursing facilities will be finalised in 2018.

On track

25. **Carry out a study to evaluate and recommend an appropriate regulatory mechanism and relevant guidance for the management and disposal of spent sheep dip.**

*Responsible: EPA, in consultation with relevant stakeholders*

This action is scheduled to be progressed in the second half of the NHWMP period.

Not yet commenced

## Plan Implementation

26. **Devise sectoral and waste stream specific indicators (e.g., industrial, farming, healthcare) to help monitor implementation of the revised Plan's objectives. Prepare and make available key hazardous waste data indicators at regular intervals.**

Responsible: EPA, in consultation with relevant bodies

While Enterprise Ireland completed some work devising sectoral specific indicators in the past, it has proven difficult to achieve comparable indicators for some sectors. However, it is acknowledged that quantitative indicators as well as qualitative indicators are required for benchmarking progress against targets and objectives. In the European Environment Agency (EEA) assessment of Ireland[29] it was noted that the EPA "continues to provide awareness of hazardous waste reduction initiatives for example via published case studies by industry and to promote and provide initiatives to reduce environmental impacts such as Green Business etc. In addition, the EPA continues to collect and report hazardous waste statistics on a national basis".

The EEA concluded that data quality issues are expected to create, in some Member States, discontinuity in time series of long-term trends, including on the generation of hazardous waste. This is likely to affect the setting of waste prevention targets and indicators, and it limits assessments of the effectiveness of implemented measures to qualitative terms at both European and national/regional levels".

The EPA, in consultation with relevant bodies, will further examine how quantitative indicators can be devised, collected and applied to appropriate sectors in order to assist with monitoring the implementation of the Plan.

At Risk

27. **Periodically report on the progress on the revised Plan's implementation.**

Responsible: EPA

The EPA has published this interim review in fulfilment of this recommendation.

On track

29 Prevention of hazardous waste in Europe-the status in 2015

# 4. CONCLUSIONS & PRIORITY ACTIONS

Overall, there has been a good level of implementation of the NHWMP with 23 of the 27 recommendations actions in progress or completed, and most of the remaining actions on-track to be progressed within the timeframe of the plan. Areas of particular note, include

- the successful farm hazardous waste collections;
- the introduction of one day collections for household hazardous waste;
- completion of the Inventory of the National hazardous waste recovery and
- disposal capacity and guidance for the management of household hazardous waste at civic amenity sites.

In the broader context of the plan targets, the picture is more mixed. A reduction in the use of hazardous substances by the biopharmachem industry appears to be offset by the increased generation of hazardous ash from Waste-to-Energy plants. It can be expected that this particular waste stream will increase over the coming years. Associated infrastructural capacity needs will need to be prioritised in the context of Ireland's self-sufficiency.

Hazardous waste can arise from a diverse range of sources, from large to small & medium sized businesses, households and farms and can be difficult to quantify. The development of sectoral specific indicators will be required to address this area. In addition, awareness campaigns accompanied by the establishment of appropriate collection routes are needed urgently to reduce the potential health and environmental impacts associated with the incorrect disposal of such substances.

Ireland has not moved significantly towards self-sufficiency (regarding hazardous waste management) since the publication of the last NHWMP. A lack of domestic infrastructure and the often more favourable cost option of treatment and disposal abroad have meant that export continues to be a significant treatment route for Ireland's hazardous wastes. Furthermore, there is an over reliance on one export market for disposal of hazardous waste. The impending departure of the UK from the European Union will have implications for hazardous waste export routes such as Northern Ireland and Great Britain. Within Ireland, the recently completed inventories infrastructure study should provide a valuable source of information for future policy and development decisions.

The continued implementation of existing statutory Producer Responsibility Initiatives should help reduce the hazardousness/hazardous components of specified products and assist with the collection/reduction of unreported hazardous waste. Similarly, ongoing implementation of regulations in relation to Persistent Organic Pollutants (POPs), REACh and Polychlorinated Bi-phenyls (PCBs) will increasingly eliminate these hazardous substances from products and processes.

The 27 recommended actions should continue to be prioritised and progressed by all relevant stakeholders over the remaining period of the plan.

In summary, the progress report identifies the need for greater focus and increased effort required on the following actions that remain at risk;

(i) developing a network of collection and transfer facilities to suit user needs to capture small-scale quantities of legacy wastes (e.g. asbestos arisings from DIY and small contracting jobs -Action item No. 10(ii)

(ii) providing increased hazardous waste collection facilities and appropriate awareness raising for households and small businesses-Action items No. 10(i) & 11

(iii) the development of new producer responsibility obligations or initiatives for certain hazardous waste streams (e.g., take back schemes) - Action item No.12

(iv) increasing Ireland's level of capacity for self-sufficiency with regard to the treatment and management of hazardous waste- Action item No. 14(ii).

(v) Carry out a study to evaluate and recommend an appropriate regulatory mechanism and relevant guidance for the management and disposal of spent sheep dip-Action item No. 25.

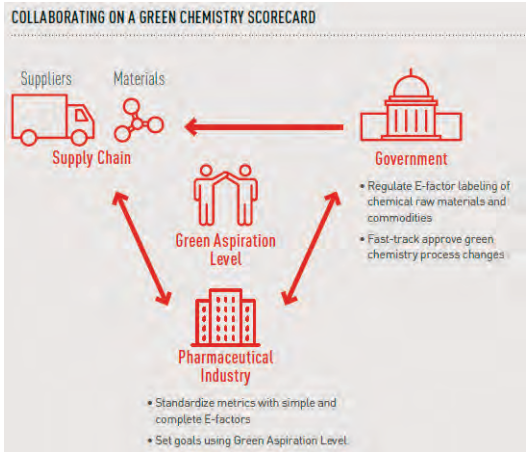
(vi) Greater development of waste stream and sector specific indicators-Action Item No. 26

The following activities are proposed as priority for the remainder of the NHWMP implementation, to build on the successful work to date and progress the actions still "At risk" or "not yet commenced":

**Table 2:** Activities proposed for progression of actions at risk

| Relevant to action item No(s) | Activities | Owner(s) |
|---|---|---|
| 10(i)10(ii), 11,12, 14(ii) & 26 | ◢ Continued engagement with all relevant stakeholders to ensure hazardous waste prevention remains a priority | All public bodies, EPA |
| 10(ii),14, 26 | ◢ Commissioning of a study to update on estimated unreported levels of hazardous waste & to identify major sources (e.g. C&D waste) | EPA |
| 12,26 | ◢ Establishment of a long-term solution for Farm Hazardous Waste Management | DAFM, DCCAE, Teagasc, EPA |
| 22, 25, 26 | ◢ Carry out a study to evaluate and recommend an appropriate regulatory mechanism and relevant guidance for the management and disposal of spent sheep dip-Action item No. 25. | EPA in consultation with relevant stakeholders |
| 10(i), 10(ii), 11 & 26 | ◢ Exploratory work on the collection and disposal of unused medicines and paint | EPA, DCCAE and relevant stakeholders |
| 10(i), 10 (ii), 11 & 26 | ◢ Development of household hazardous waste collection and improved collection facilities for these wastes at Civic Amenity Sites or other appropriate locations | DCCAE, Local Authorities, EPA |
| 10(i), 11 & 26 | ◢ Public awareness raising campaigns for specific hazardous waste streams (e.g. batteries, paints & medicines) | EPA and relevant stakeholders |
| 10(ii), & 26 | ◢ Support & enforcement for small businesses generating hazardous wastes (e.g. garages) | EPA and relevant stakeholders |

# APPENDIX 1: CASE STUDY: HAZARDOUS WASTE REDUCTION AT ELI LILLY & CO.




At Lilly, we strive to embed environmental innovation early in the product development life cycle through our focus on green chemistry. Our green chemistry initiatives include evaluating less-toxic chemical alternatives for use in manufacturing and exploring innovations that can lessen the negative outputs resulting from the production of medicine.

When we are developing a new human medicine at Lilly, green chemistry considerations are a complement to other criteria such as quality, cost, and speed to market. From the selection of candidate molecules, through the identification of manufacturing processes, our established business practices hold our development teams accountable for process efficiency, the type and quantity of materials used, and safety. At major milestones, we evaluate success and share feedback with development teams. Since we outsource a significant amount of product development, we share guidelines, such as the Lilly solvent selection guide, with our partners to ensure consistent objectives, processes, and outcomes.

Employing green chemistry and engineering, we have been able to enhance the safety profile of the manufacturing process by significantly reducing the risk scale of the most hazardous manufacturing steps. We are also focused on the adoption of greener and safer solvents where possible. We have replaced several hazardous solvents with safer alternatives, including significant, nearly carbon-neutral, efforts to limit the use of dichloromethane (a hazardous air pollutant and suspected carcinogen).

Lilly actively pursues wider industry collaborations to help advance green chemistry, through a combination of dialogue and leadership with peer companies, scientific partnerships, and

sponsorship of research. In 2016, Lilly worked with the IQ Green Chemistry Working Group to collaboratively develop and introduce the Green Aspiration Level (GAL) tool. Until now, the use of

green chemistry metrics among pharmaceutical companies has been hampered by the lack of an agreed-upon standard.

This new tool makes the development of objective goals, like process efficiency and mass intensity, easier. It uses industry benchmarks to create a unified scoring system for green chemistry formulations, and introduces a new green scorecard for use across the supply chain—including contract manufacturing. A paper about the new system was published in ***Green Chemistry*** in 2017.

## APPENDIX 2: PROGRESS ON PLAN TARGETS

The NHWMP also includes a set of targets which are wider in scope than the 27 recommendations within the plan. Successful implementation of the NHWMP should contribute to the achievement of these targets, but they are also subject to external drivers such as market forces; legislative developments; and technical innovations. The status of the targets at this mid-point of the NHWMP lifetime is reviewed below:

| Target for lifetime of plan | Status | NHWMP Actions | Notes |
|---|---|---|---|
| Initiate and implement hazardous waste prevention projects |  | 1, 2, 3, 4,5, 6 | Hazardous waste prevention projects have been initiated for householders and businesses. Government, EPA, Local Authorities, and industry all have role in the progression and management of these initiatives. |
| Reduce the generation of hazardous waste relative to production at targeted, participating or reporting organisations or sectors. Influence positive behavioural change by supporting businesses, communities and householders to become more resource efficient. |  | 2, 3, 4, 5, 10(i), 11, 21, 22, 26 | Hazardous waste prevention, collection and management being implemented through regulation, public awareness campaigns, ongoing projects and collection schemes.<br>Capturing and reporting reductions in hazardous waste generation is not possible below the granularity of national-level statistics at this time. Further work on suitable indicators and modelling is required to increase data availability for this issue. |
| Minimise the generation of unreported hazardous waste |  | 4, 5, 7, 8, 10(i), 10(ii), 23 | Novel collection initiatives for farmers and householders are clearly addressing this issue by providing practical collection routes.<br>The national waste characterisation study will also be a significant source of information on unreported hazardous wastes in commercial and household waste streams. Further research is required to update previous estimates on amounts and to identify significant sources. |
| Increase the deposit of household and small business hazardous waste at<br>civic amenity sites;<br>other static collection points; and<br>mobile services. |  | 5, 10(i), 10(ii), 11, 12, 13, 21, 22, 23, 24, 25 | A campaign of 10 one-day collections of small-scale quantities of hazardous waste generated from households carried out in 2017. A similar scheme ran in 2015 and 2016.<br>Guidance to assist civic amenity site operators to safely accept and store a full range of household hazardous waste from the public has been published. The aim of the guidance is to assist local authorities to accept a larger range of household hazardous waste types while at the same time offering guidance on the identification, assessment and management of any environmental, health and safety risks. |

| Target for lifetime of plan | Status | NHWMP Actions | Notes |
|---|---|---|---|
| Increase collection of waste oils from smaller sources (e.g. garages) |  | 5, 7, 11, 17, 21, 22 | Smart Garage guide to be reviewed, updated and re-circulated to garages. Site audits highlight that 30% of waste generated from garages is hazardous.<br>Other 'smaller sources' of hazardous waste to be identified and targeted for future awareness and enforcement actions. |
| Carry out farm hazardous collection pilot project to inform producer responsibility initiatives |  | 2, 3, 13, 8, 10 | Five years of pilot Farm Hazardous Waste collections have been operated. There is a clear requirement to put this initiative on a longer-term footing. |
| Increase on-site treatment of hazardous waste generated at IPPC/IED licensed facilities |  | 3, 4, 5, 17, 21, 26 | Although the quantities being treated are decreasing, there is evidence to show that less hazardous waste being produced on site. Solvent waste will continue to decrease as manufacturing practices change towards shorter campaign lengths and away from more solvent-intensive practices. There are 19 industrial licensed facilities currently treating hazardous waste on-site. The main activities in relation to quantity treated are landfill (D1)[30], incineration (D10), use of waste as a fuel for energy recovery (R1) and solvent recovery (R2). |
| Increase off-site treatment of hazardous waste in Ireland |  | 14(i), 14(ii), 15, 20, 23 | Waste to Energy plants have some capacity for treatment of hazardous waste, however, there will be an increase in generation of hazardous thermal residue, i.e. fly ash and boiler ash from waste to energy facilities. Some of Ireland's cement kilns have lodged applications for authorisation to use alternative fuels (e.g. Liquid recovered fuels) within their processes. The main hazardous waste types treated were used motor oils (21%), oil/water emulsion/sludges (20%), solvents (15%), waste electrical and electronic equipment (11%) and human infectious health care wastes (10%). |
| Reduce export of hazardous waste |  | 14(i), 14(ii), 15, 20, 26 | Lack of capacity within Ireland and market forces are ensuring that export remains a strong vector for Ireland's Hazardous Waste arising.<br>The EPA's Ireland's Environment 2016 report notes an infrastructure deficit for hazardous waste treatment in Ireland. It states that Ireland is 'vulnerable' in terms of hazardous waste management due to limited domestic treatment options. This conclusion is consistent with the findings of 'Ireland's hazardous waste treatment capacity inventory'. |

30 Landfill is exclusively due to landfilling of salt cake at Aughinish Alumina

| Target for lifetime of plan | Status | NHWMP Actions | Notes |
|---|---|---|---|
| Identify, assess and remediate as necessary all sites where hazardous waste to a significant extent was disposed of |  | 9, 17, 19, 20 | A web based system hosted by the EPA exists to allow local authorities register for such sites (under Sections 22 and 26 of the Waste Management Act 1996, as amended). The local authority regional waste management plans indicated a commitment to start working in 2018 on the higher priority sites. |

# AN GHNÍOMHAIREACHT UM CHAOMHNÚ COMHSHAOIL

Tá an Ghníomhaireacht um Chaomhnú Comhshaoil (GCC) freagrach as an gcomhshaol a chaomhnú agus a fheabhsú mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ó éifeachtaí díobhálacha na radaíochta agus an truaillithe.

## Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

Rialú: *Déanaimid córais éifeachtacha rialaithe agus comhlíonta comhshaoil a chur i bhfeidhm chun torthaí maithe comhshaoil a sholáthar agus chun díriú orthu siúd nach gcloíonn leis na córais sin.*

Eolas: *Soláthraímid sonraí, faisnéis agus measúnú comhshaoil atá ar ardchaighdeán, spriocdhírithe agus tráthúil chun bonn eolais a chur faoin gcinnteoireacht ar gach leibhéal.*

*Tacaíocht: Bímid ag saothrú i gcomhar le grúpaí eile chun tacú le comhshaol atá glan, táirgiúil agus cosanta go maith, agus le hiompar a chuirfidh le comhshaol inbhuanaithe.*

## Ár bhFreagrachtaí

### Ceadúnú

- Déanaimid na gníomhaíochtaí seo a leanas a rialú ionas nach ndéanann siad dochar do shláinte an phobail ná don chomhshaol:
- saoráidí dramhaíola (*m.sh. láithreáin líonta talún, loisceoirí, stáisiúin aistrithe dramhaíola*);
- gníomhaíochtaí tionsclaíocha ar scála mór (*m.sh. déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta*);
- an diantalmhaíocht (*m.sh. muca, éanlaith*);
- úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe (*OGM*);
- foinsí radaíochta ianúcháin (*m.sh. trealamh x-gha agus radaiteiripe, foinsí tionsclaíocha*);
- áiseanna móra stórála peitril;
- scardadh dramhuisce;
- gníomhaíochtaí dumpála ar farraige.

### Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil

- Clár náisiúnta iniúchtaí agus cigireachtaí a dhéanamh gach bliain ar shaoráidí a bhfuil ceadúnas ón nGníomhaireacht acu.
- Maoirseacht a dhéanamh ar fhreagrachtaí cosanta comhshaoil na n-údarás áitiúil.
- Caighdeán an uisce óil, arna sholáthar ag soláthraithe uisce phoiblí, a mhaoirsiú.
- Obair le húdaráis áitiúla agus le gníomhaireachtaí eile chun dul i ngleic le coireanna comhshaoil trí chomhordú a dhéanamh ar líonra forfheidhmiúcháin náisiúnta, trí dhíriú ar chiontóirí, agus trí mhaoirsiú a dhéanamh ar leasúchán.
- Cur i bhfeidhm rialachán ar nós na Rialachán um Dhramhthrealamh Leictreach agus Leictreonach (DTLL), um Shrian ar Shubstaintí Guaiseacha agus na Rialachán um rialú ar shubstaintí a ídíonn an ciseal ózóin.
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

### Bainistíocht Uisce

- Monatóireacht agus tuairisciú a dhéanamh ar cháilíocht aibhneacha, lochanna, uiscí idirchriosacha agus cósta na hÉireann, agus screamhuiscí; leibhéil uisce agus sruthanna aibhneacha a thomhas.
- Comhordú náisiúnta agus maoirsiú a dhéanamh ar an gCreat-Treoir Uisce.
- Monatóireacht agus tuairisciú a dhéanamh ar Cháilíocht an Uisce Snámha.

### Monatóireacht, Anailís agus Tuairisciú ar an gComhshaol

- Monatóireacht a dhéanamh ar cháilíocht an aeir agus Treoir an AE maidir le hAer Glan don Eoraip (CAFÉ) a chur chun feidhme.
- Tuairisciú neamhspleách le cabhrú le cinnteoireacht an rialtais náisiúnta agus na n-údarás áitiúil (*m.sh. tuairisciú tréimhsiúil ar staid Chomhshaol na hÉireann agus Tuarascálacha ar Tháscairí*).

### Rialú Astaíochtaí na nGás Ceaptha Teasa in Éirinn

- Fardail agus réamh-mheastacháin na hÉireann maidir le gáis cheaptha teasa a ullmhú.
- An Treoir maidir le Trádáil Astaíochtaí a chur chun feidhme i gcomhair breis agus 100 de na táirgeoirí dé-ocsaíde carbóin is mó in Éirinn

### Taighde agus Forbairt Comhshaoil

- Taighde comhshaoil a chistiú chun brúnna a shainaithint, bonn eolais a chur faoi bheartais, agus réitigh a sholáthar i réimsí na haeráide, an uisce agus na hinbhuanaitheachta.

### Measúnacht Straitéiseach Timpeallachta

- Measúnacht a dhéanamh ar thionchar pleananna agus clár beartaithe ar an gcomhshaol in Éirinn (*m.sh. mórphleananna forbartha*).

### Cosaint Raideolaíoch

- Monatóireacht a dhéanamh ar leibhéil radaíochta, measúnacht a dhéanamh ar nochtadh mhuintir na hÉireann don radaíocht ianúcháin.
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha.
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta.
- Sainseirbhísí cosanta ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

### Treoir, Faisnéis Inrochtana agus Oideachas

- Comhairle agus treoir a chur ar fáil d'earnáil na tionsclaíochta agus don phobal maidir le hábhair a bhaineann le caomhnú an chomhshaoil agus leis an gcosaint raideolaíoch.
- Faisnéis thráthúil ar an gcomhshaol ar a bhfuil fáil éasca a chur ar fáil chun rannpháirtíocht an phobail a spreagadh sa chinnteoireacht i ndáil leis an gcomhshaol (*m.sh. Timpeall an Tí, léarscáileanna radóin*).
- Comhairle a chur ar fáil don Rialtas maidir le hábhair a bhaineann leis an tsábháilteacht raideolaíoch agus le cúrsaí práinnfhreagartha.
- Plean Náisiúnta Bainistíochta Dramhaíola Guaisí a fhorbairt chun dramhaíl ghuaiseach a chosc agus a bhainistiú.

### Múscailt Feasachta agus Athrú Iompraíochta

- Feasacht chomhshaoil níos fearr a ghiniúint agus dul i bhfeidhm ar athrú iompraíochta dearfach trí thacú le gnóthais, le pobail agus le teaghlaigh a bheith níos éifeachtúla ar acmhainní.
- Tástáil le haghaidh radóin a chur chun cinn i dtithe agus in ionaid oibre, agus gníomhartha leasúcháin a spreagadh nuair is gá.

### Bainistíocht agus struchtúr na Gníomhaireachta um Chaomhnú Comhshaoil

Tá an ghníomhaíocht á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóirí. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inmharthanacht Comhshaoil
- An Oifig Forfheidhmithe i leith cúrsaí Comhshaoil
- An Oifig um Fianaise is Measúnú
- Oifig um Chosaint Radaíochta agus Monatóireachta Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag comhaltaí air agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

**Headquarters**

**PO Box 3000,**
**Johnstown Castle Estate**
**County Wexford, Ireland**

**T: +353 53 916 0600**
**F: +353 53 916 0699**
**E: info@epa.ie**
**W: www.epa.ie**
**LoCall: 1890 33 55 99**

**Regional Inspectorate**
McCumiskey House,
Richview, Clonskeagh Road,
Dublin 14, Ireland

T: +353 1 268 0100
F: +353 1 268 0199

**Regional Inspectorate**
Inniscarra, County Cork,
Ireland

T: +353 21 487 5540
F: +353 21 487 5545

**Regional Inspectorate**
Seville Lodge, Callan Road,
Kilkenny, Ireland

T +353 56 779 6700
F +353 56 779 6798

**Regional Inspectorate**
John Moore Road, Castlebar
County Mayo, Ireland

T +353 94 904 8400
F +353 94 902 1934

**Regional Inspectorate**
The Glen, Monaghan, Ireland

T +353 47 77600
F +353 47 84987

**Regional Offices**

The Civic Centre
Church St., Athlone
Co. Westmeath, Ireland
T +353 906 475722

Room 3, Raheen Conference Centre,
Pearse House, Pearse Road
Raheen Business Park, Limerick,
Ireland
T +353 61 224764

Printed on environmentally friendly paper stock