Third National Implementation Plan for Persistent Organic Pollutants

Draft for Public Consultation 2025

epa
Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Environmental Protection Agency

The 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:** Implementing regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.
- **Knowledge:** Providing high-quality, targeted and timely environmental data, information and assessment to inform decision making.
- **Advocacy:** Working with others to advocate for a clean, productive and well-protected environment and for sustainable environmental practices.

Our responsibilities include:

LICENSING

- Large-scale industrial waste and petrol storage activities;
- Urban wastewater discharges;
- The contained use and controlled release of genetically modified organisms;
- Sources of ionising radiation;
- Greenhouse gas emissions from industry and aviation through the EU Emissions Trading Scheme.

NATIONAL ENVIRONMENTAL ENFORCEMENT

- Audit and inspection of EPA-licensed facilities;
- Drive the implementation of best practice in regulated activities and facilities;
- Oversee local authority responsibilities for environmental protection;
- Regulate the quality of public drinking water and enforce urban wastewater discharge authorisations;
- Assess and report on public and private drinking water quality;
- Coordinate a network of public service organisations to support action against environmental crime;
- Prosecute those who flout environmental law and damage the environment.

WASTE MANAGEMENT AND CHEMICALS IN THE ENVIRONMENT

- Implement and enforce waste regulations including national enforcement issues;
- Prepare and publish national waste statistics and the National Hazardous Waste Management Plan;
- Develop and implement the National Waste Prevention Programme;
- Implement and report on legislation on the control of chemicals in the environment.

WATER MANAGEMENT

- Engage with national and regional governance and operational structures to implement the Water Framework Directive;
- Monitor, assess and report on the quality of rivers, lakes, transitional and coastal waters, bathing waters and groundwaters, and measurement of water levels and river flows.

CLIMATE SCIENCE AND CLIMATE CHANGE

- Publish Ireland's greenhouse gas emission inventories and projections;
- Provide the Secretariat to the Climate Change Advisory Council and support to the National Dialogue on Climate Action;
- Support National, EU and UN climate science and policy development activities.

ENVIRONMENTAL MONITORING & ASSESSMENT

- Design and implement national environmental monitoring systems: technology, data management, analysis and forecasting;
- Produce the State of Ireland's Environment and Indicator Reports;
- Monitor air quality and implement the EU Clean Air for Europe Directive, the Convention on Long Range Transboundary Air Pollution and the National Emissions Ceiling Directive;
- Oversee the implementation of the Environmental Noise Directive;
- Assess the impact of proposed plans and programmes on the Irish environment.

ENVIRONMENTAL RESEARCH AND DEVELOPMENT

- Coordinate and fund national environmental research activity to identify pressures, inform policy and provide solutions;
- Collaborate with national and EU environmental research activity.

RADIOLOGICAL PROTECTION

- Monitoring radiation levels and assess public exposure to ionising radiation and electromagnetic fields;
- Assist in developing national plans for emergencies arising from nuclear accidents;
- Monitor developments abroad relating to nuclear installations and radiological safety;
- Provide, or oversee the provision of, specialist radiation protection services.

GUIDANCE, AWARENESS RAISING, AND ACCESSIBLE INFORMATION

- Provide independent evidence-based reporting, advice and guidance to government, industry and the public on environmental and radiological protection topics;
- Promote the link between health and wellbeing, the economy and a clean environment;
- Promote environmental awareness including supporting behaviours for resource efficiency and climate transition;
- Promote radon testing in homes and workplaces and encourage remediation where necessary.

PARTNERSHIP AND NETWORKING

- Work with international and national agencies, regional and local authorities, non-governmental organisations, representative bodies and government departments to deliver environmental and radiological protection, research coordination and science-based decision making.

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 Radiation Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by advisory committees who meet regularly to discuss issues of concern and provide advice to the Board.

Third National Implementation Plan for Persistent Organic Pollutants

Update of Ireland's National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants.

EPA Office of Radiation Protection and Environmental Monitoring

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- Department of Climate Energy and the Environment
- Department of Agriculture, Food and the Marine
- Marine Institute
- Food Safety Authority of Ireland
- Health and Safety Authority
- Health Service Executive
- Department of Housing, Local Government and Heritage
- Local Authorities
- The Office of Revenue Commissioners
- Uisce Éireann

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Executive Summary

Ireland's updated Draft National Implementation Plan (NIP) on Persistent Organic Pollutants (POPs) details the country's work in fulfilling its obligations under the Stockholm Convention. It also sets out the action plan of measures to meet the Convention's requirements on POPs monitoring, education and reduction and elimination.

POPs are a group of hazardous chemicals that persist in the environment, can bioaccumulate in the food chain and are toxic to human health and ecosystems. The Stockholm Convention, a global treaty managed by the United Nations Environment Programme (UNEP), aims to protect human health and the environment from POPs chemicals. These chemicals have been divided into three main categories which are pesticides, industrial chemicals and unintentional POPs.

Ireland became a Party to the Convention in 2010 and published its first NIP in 2012, followed by an update in 2018. This third publication of the NIP covers the inclusion of additional POPs by the Conference of the Parties (COP) in 2019, 2022, 2023, and 2025. The newly listed substances include Dicofol, PFOA, PFHxS, Dechlorane Plus, Methoxychlor, UV-328, MCCPs, LC-PFCAs, and Chlorpyrifos.

Since the 2018 plan, Ireland has demonstrated ongoing progress, including a 91% reduction of in use PFOA containing firefighting foam stockpiles as of October 2025, the collection of 1.7 tonnes of POPs pesticides through farm hazardous waste collections and an expanded knowledge base from research and monitoring studies. Ireland has submitted regular reports to both the UN Stockholm Convention Secretariat and the European Commission. Continued monitoring has also highlighted the extent of POPS in the environment such as water monitoring which has identified POPs leading to EQS failures under the Water Framework Directive. Additional measures include the development of a training course for regulators, continued inspections and enforcement by regulators, as well as strengthened market surveillance – with 87 Safety Gate notifications in 2024 identifying nine non-compliant products on sale in Ireland.

This Draft NIP was prepared in consultation with public authorities and national stakeholders. It provides a comprehensive overview of POPs in Ireland capturing the research and monitoring carried out across various environmental sectors including air, water, food and waste.

The Action Plan at the end of this document outlines specific measures in relation to Articles defined in the convention. This includes measures around research and monitoring, public awareness and the elimination or reduction of releases of POPs. The authorities and stakeholders in Ireland that have key roles in the regulation and management of POPs in Ireland are also listed in this plan. The actions outlined provide a roadmap for Ireland's continued long-term commitment in eliminating and reducing POPs.

1. INTRODUCTION and BACKGROUND TO THE NIP

1.1 Introduction

Persistent Organic Pollutants (POPs) are chemicals that are characterised by a combination of physical and chemical properties such that, once released into the environment, they remain relatively stable for long periods of time; can be transported across international boundaries via air, water and migratory species; and are toxic to both humans and wildlife.

The Stockholm Convention on POPs is a global United Nations treaty which was established to protect human health and the environment from these chemicals. The Stockholm Convention entered into force on 17th May 2004 and is administered by the United Nations Environment Programme (UNEP). Chemicals that are listed in the Convention are subject to a ban or severe restriction on production, import, export, and use. Measures are also required to eliminate or reduce the releases of POPs from stockpiles and for the sound disposal of waste containing POPs.

Ireland signed up as a Party to the Stockholm Convention in November 2010 and as a Party to the Convention, has several obligations. Those obligations include the development and periodic review of a National Implementation Plan (NIP) outlining the measures taken to eliminate or restrict the intentional production, use and release of POPs to the environment. The plan is also required to include actions to reduce the release of POPs into the environment from unintentional production.

When the Stockholm Convention entered into force in 2004, a total of 12 chemicals were listed for elimination or severe restriction. Since 2004 additional chemicals have been added at subsequent meetings of the Conference of Parties (COP), which is the governing body for Stockholm Convention. The listed POPs fall into three categories: pesticides, industrial chemicals (both of which are intentionally manufactured or produced) and POPs that are produced unintentionally as part of other processes (see **Table 1** below). The Stockholm Convention supplements another international agreement regarding POPs known as the Protocol to the 1979 UNECE Convention on Long-Range Transboundary Air Pollution (CLRTAP) on Persistent Organic Pollutants (referred to as the POPs Protocol) which also aims to reduce and eliminate the production, use and releases of POPs. The Protocol bans or severely restricts the production and use of some chemicals most of which are covered under the Stockholm Convention.

Table 1: Chemicals listed in the Stockholm Convention on Persistent Organic Pollutants (as of July 2025) (Source: https://www.pops.int/)

Chemical	Pesticide	Industrial chemical	Unintentional by-product	Annex Listed in: A (elimination) B (restriction)[1] C (unintentional production)	Year Listed (COP meeting)
Aldrin	•			A	2001 (Initial 12 POPs)
Chlordane	•			A	2001 (Initial 12 POPs)
Chlordecone	•			A	2009 (COP-4)
Chlorpyrifos	•			A	2025 (COP-12)
DDT	•			B	2001 (Initial 12 POPs)
Decabromodiphenyl ether (commercial mixture, c-decaBDE)		•		A	2017 (COP-8)
Dechlorane Plus		•		A	2023 (COP-11)
Dicofol	•			A	2019 (COP-9)
Dieldrin	•			A	2001 (Initial 12 POPs)
Endrin	•			A	2001 (Initial 12 POPs)
Heptachlor	•			A	2001 (Initial 12 POPs)
Hexabromobiphenyl (HBB)		•		A	2009 (COP-4)
Hexabromocyclododecane (HBCDD)		•		A	2013 (COP-6)
Hexabromodiphenyl ether and heptabromodiphenyl ether		•		A	2009 (COP-4)
Hexachlorobenzene (HCB)	•	•	•	A, C	2001 (Initial 12 POPs)
Hexachlorobutadiene (HCBD)		•	•	A, C	2015 (COP-7)
Alpha and beta hexachlorocyclohexane	•			A	2009 (COP-4)
Lindane	•			A	2009 (COP-4)
Long-chain perfluorocarboxylic acids (LC-PFCAs)		•		A	2025 (COP-12)
Medium-chained chlorinated paraffins (MCCPs)		•		A	2025 (COP-12)
Methoxychlor	•			A	2023 (COP-11)
Mirex	•			A	2001 (Initial 12 POPs)
Pentachlorobenzene (PeCB)	•	•	•	A, C	2009 (COP-4)
Pentachlorophenol and its salts and esters (PCP)	•			A	2015 (COP-7)

1 Ireland has not registered for exemptions allowing the use of DDT or PFOS in Ireland under the restrictions.

Chemical	Pesticide	Industrial chemical	Unintentional by-product	Annex Listed in: A (elimination) B (restriction)[1] C (unintentional production)	Year Listed (COP meeting)
Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds		•		A	2019 (COP-9)
Perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOS-F)	•	•		B	2009 (COP-4)
Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds		•		A	2021/2022 (COP-10)
Polychlorinated biphenyls (PCBs)		•	•	A, C	2001 (Initial 12 POPs)
Polychlorinated dibenzo-p-dioxins (PCDDs)			•	C	2001 (Initial 12 POPs)
Polychlorinated dibenzofurans (PCDFs)			•	C	2001 (Initial 12 POPs)
Polychlorinated naphthalenes (PCNs)		•	•	A, C	2015 (COP-7)
Short-chained chlorinated paraffins (SCCPs)		•		A	2017 (COP-8)
Technical endosulfan and its related isomers	•			A	2011 (COP-5)
Tetrabromodiphenyl ether and pentabromodiphenyl ether		•		A	2009 (COP-4)
Toxaphene	•			A	2001 (Initial 12 POPs)
UV-328		•		A	2023 (COP-11)

1.2 Status of Ireland's POPs National Implementation Plan

In 2012, Ireland's first NIP on POPs was published along with an Action Plan, setting out the tasks required to reduce unintentional releases of POPs. Article 7 of the Stockholm Convention requires Parties to update the NIP when new POPs are added. Ireland's first update of the NIP was published in 2018. This second update of the NIP (Ireland's third NIP)[2], is in response to decisions made at meetings of the Conference of Parties in 2019, 2022 and 2023 to list six additional chemicals to the Stockholm Convention as follows:

- Dicofol (COP-9, 2019)
- PFOA (COP-9, 2019)
- PFHxS (COP-10, 2022)
- Dechlorane Plus (COP-11, 2023)
- Methoxychlor (COP-11, 2023)
- UV-328 (COP-11, 2023)

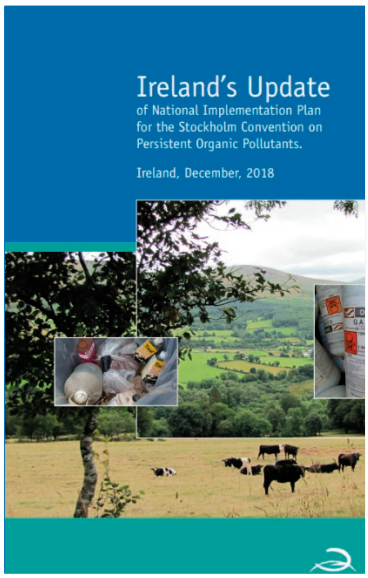


Figure 1: Ireland's 2018 POPs NIP

1.3 Listing of new POPs

A number of other chemicals were agreed for listing in the Stockholm Convention at the most recent Triple BRS COP (12) held in April and May 2025, namely Medium-chained chlorinated paraffins (MCCPs), Long-chain perfluorocarboxylic acids (LC-PFCAs) and Chlorpyrifos[3]. As more chemicals are listed, Ireland's NIP will be updated in accordance with the requirements of the convention. In the meantime, readers are also advised to view the UN Stockholm Convention webpage (The New POPs) and the European Chemicals Agency's (ECHA's) POPs webpage (https://echa.europa.eu/understanding-pops) for more recent updates.

The listing of chemicals in Annexes A, B and C of the Stockholm Convention is defined under Article 8 of the Convention. There are several stages that take place to list a new chemical, starting with a proposal by any party to the Secretariat of the Stockholm Convention. This proposal must meet criteria specified in Annex D which includes the evidence of the chemical's persistence, bioaccumulation and potential for long range environmental transport.

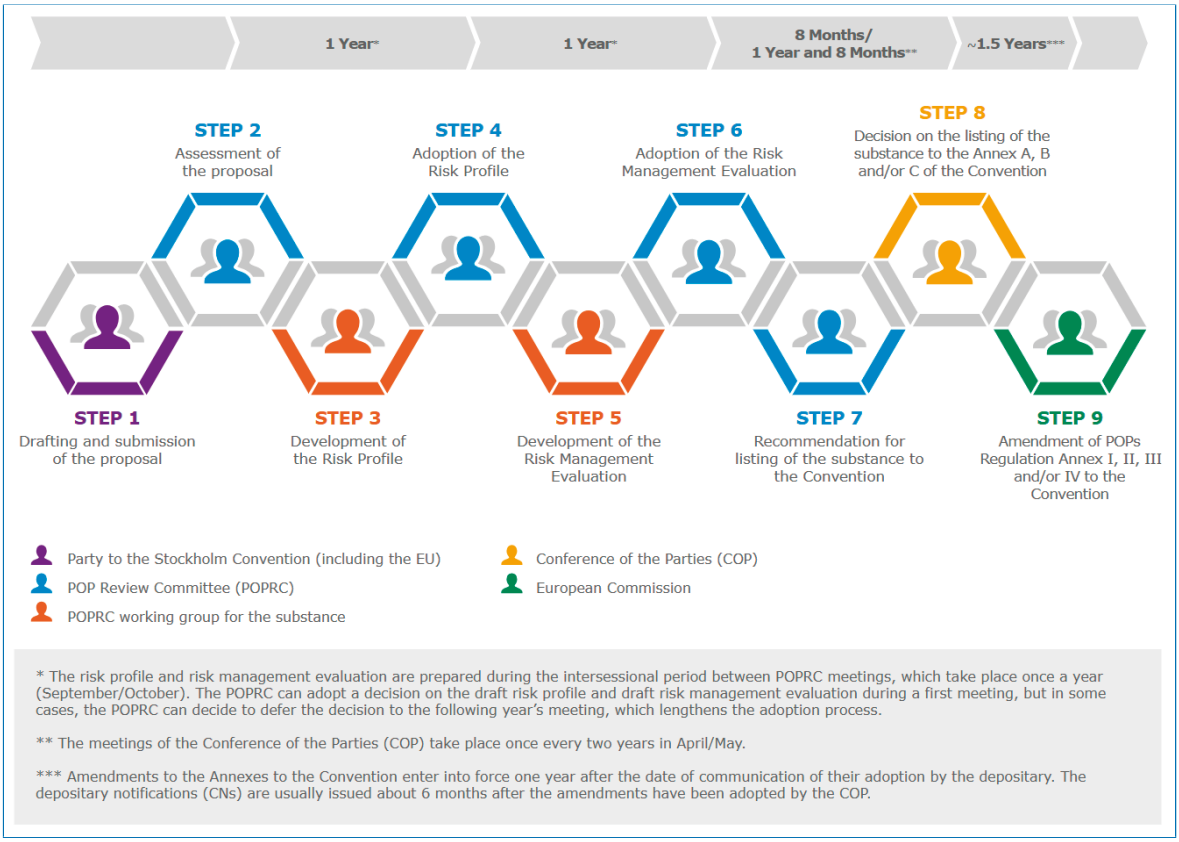
If satisfactory, the proposal will be forwarded to the POPs review committee (POPRC). POPRC will screen the proposal to verify it meets Annex D criteria and if accepted, a risk profile will then be developed by the POPRC working group. The next step is the development of a risk management evaluation which the POPRC will again assess before giving a recommendation to the Conference of Parties (COP) for listing in the convention. The COP will then decide on whether to list the chemical.

2 A glossary of terms can be found on the EPA website https://www.epa.ie/publications/monitoring--assessment/waste/persistent-organic-pollutants-pops-glossary.php

3 COP Decisions

Once the amendment to the Stockholm Convention has been adopted the EU POPs regulations can then be amended to list the new chemical. Amendments are done through delegated acts which requires consultation by the European Commission with relevant stakeholders. If the delegated act is adopted, it is submitted to the European Parliament and Council for a scrutiny period of two months. If there are no objections the delegated regulation is published in the EU's Official Journal and usually will enter into force 20 days after publication (ECHA, 2025).

Figure 2: The process for proposing new POPs to be listed under the Stockholm Convention. Source: European Chemicals Agency, http://echa.europa.eu/



1.4 Country Profile

As outlined in the previous POPs NIP Ireland is in the Northwest of Europe, covering 70,283 square kilometres (Carlier, *et al.*, 2021). A significant area of land on the island is used for agriculture, the majority of which is made up of grassland (CSO, 2020). Despite this the economy has shifted from one based on agriculture to one also with a focus on pharmaceuticals, chemicals and related products, which now make up a majority of Ireland's total Net Selling Value (NSV) (CSO, 2024).

Ireland is bordered along the west by the Atlantic Ocean which influences the country's mild temperatures. Recent climate change projections for Ireland indicate further warming in the future, with 2024 being the fourth warmest year on record (Met Éireann, 2024). Projections indicate that there will be significant reductions in the average annual levels of spring and summer rainfall while winters will be wetter (DECC, 2024). The population of Ireland was estimated to be 5.38 million (CSO,

2024) as of April 2024. Along with the population growth, life expectancy has also increased. The life expectancy at birth for males and females is 80.8 year and 84.4 years respectively (DoH, 2022).

For further information on Ireland and the environment please refer to the latest State of the Environment Report from the EPA: Ireland's State of the Environment Report 2024.

1.5 Policy and regulatory framework

As a Member State of the European Union (EU), Ireland's environmental legislation is predominantly driven by European policy and legislation which includes the control of chemicals including POPs. In 2020, the European Commission adopted the European Green Deal, a key commitment of which is the EU's zero pollution ambition. As part of this ambition the EU published a Chemical Strategy for Sustainability in 2020. This strategy aims to better protect citizens and the environment and boost innovation for safe and sustainable chemicals. In 2022 the EU Parliament and Council adopted the 8th EU Environmental Action Programme. This builds on the European Green Deal of 2020 and reiterates the EU's long-term vision for 2050 of living well and within planetary boundaries. The programme has six priority objectives to 2030, one of which is to pursue a zero-pollution ambition, including for air, water and soil and protecting the health and well-being of Europeans. At a European level the European Commission carry out periodic reviews of the regulations that implement the requirements for specific POPs, where, for example, changes are needed to the Unintentional Trace Contaminants (UTC) limits based on new analytical and scientific evidence available.

The EU is also a Party to the Stockholm Convention and most recently revised and updated the EU Implementation Plan on POPs in 2021 (European Commission, 2021).

The NIP and any periodic updates are required to be considered and integrated into national sustainable development strategies. The National Implementation Plan for the Sustainable Development Goals 2022-2024 sets out the strategic objectives and measures for Ireland. It references the reduction of the negative impacts of chemicals that are hazardous for human health and the environment as part of the sustainable cities and communities Sustainable Development Goal (DECC, 2022). There are two targets with reference to POPs.

- Target 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
- Target 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

Ireland is a party to the Rotterdam, Stockholm and Basel Conventions respectively and will continue to implement its obligations under these agreements and their associated EU regulations.

The Protocol to the 1979 UNECE Convention on Long-Range Transboundary Air Pollution (CLRTAP) on Persistent Organic Pollutants (referred to as the POPs Protocol) obliges Parties to reduce emissions of dioxins, furans, certain polycyclic aromatic hydrocarbons (PAHs) and hexachlorobenzene below their levels in 1990 (or an alternative year between 1985 and 1995). For certain processes, such as waste incineration, the Protocol specifies specific limit values for releases of POPs. As a Party to the Convention on Long-Range Transboundary Air Pollution (CLRTAP), Ireland is required to annually report emission data for a wide range of air pollutants and other substances released into the atmosphere. While Parties are required to report only on the substances and for the years set forth in Protocols that they have ratified, Ireland estimates and reports emissions for the full range of substances set down in Annex I to the Guidelines for Reporting Emission Data under the Convention on Long-Range Transboundary Air Pollution. This includes POPs covered under the POPs Protocol. Also, the EU Strategy for Dioxins, Furans and Polychlorinated Biphenyls was adopted in 2001 (European Comission, 2001).

Table 2: Main legislation relating to POPs and Chemicals.

Legislation	POPs regulated/POP reference	Areas of regulation	Associated Irish Legislation
POP Regulation			
Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants	All POPs listed in the Stockholm Convention	Manufacturing, placing on the market and use of chemicals, management of stockpiles and wastes and measures to reduce releases of unintentionally produced POPs	S.I. No. 146/2020 – European Union (Persistent Organic Pollutants) Regulations 2020
Chemical Legislation			
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)	Annex XIII of REACH outlines criteria for the identification of PBT (persistent, bioaccumulative and toxic) and vPvB (very persistent, very bioaccumulative).	Manufacture, placing on the market and use	The main legislation is the REACH. As an EU Regulation it is directly applicable in all Member States and the measures within it (such as the identification of PBT's) are binding in all Member States without any requirements for national legislation.
The Chemicals Acts 2008 (No 13 of 2008) and 2010 (No 32 of 2010) main purpose is to identify the relevant competent authorities in Ireland and facilitate enforcement provisions national for authorities to enforce the REACH Regulation.	Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP)	Harmonised classification and labelling of substances as persistent, bio-accumulative and toxic (PBT) and very bio-accumulative (vPvB) and included in Part 3 of Annex VI of CLP Classification, Labelling, Packaging	The main legislation is the CLP. As an EU Regulation it is directly applicable in all Member States. The Chemicals Acts 2008 (No 13 of 2008) and 2010 (No 32 of 2010) main purpose is to identify the relevant competent authorities in Ireland and facilitate enforcement provisions national for authorities to enforce the CLP Regulation.

Legislation	POPs regulated/POP reference	Areas of regulation	Associated Irish Legislation
Regulation (EC) No 1107/2009 concerning the placing of plant protection products on the market	An active substance, safener or synergist shall only be approved where it is not considered to be a persistent, bioaccumulative and toxic (PBT) substance (such as a persistent organic pollutant (POP) substance). Active substances meeting two of the PBT criteria shall be considered candidates for substitution	Placing on the market and use	S.I. 155 of 2012 – European Communities (Sustainable Use of Pesticides) Regulations 2012 and S.I. 159 of 2012 – European Communities (Plant Protection Products) Regulations 2012
Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products	Active substances meeting the PBT criteria shall not normally be approved. Active substances meeting two of the PBT criteria shall be considered candidates for substitution	Placing on the market and use	S.I. 427 of 2013 – European Union (Biocidal Products) Regulations 2013
Rotterdam Regulation (EU) 649/2012 concerning the export and import of hazardous chemicals (PIC)	Annex V Part I of the Rotterdam Regulation include provisions for POPs as listed in Annexes A and B of the Stockholm Convention to be subject to export ban	Export and import of dangerous chemicals	The main legislation is the Export Import Regulation. As an EU Regulation it is directly applicable in all Member States. The Chemicals Acts 2008 (No 13 of 2008) and 2010 (No 32 of 2010) main purpose is to identify the relevant competent authorities in Ireland and facilitate enforcement provisions national for authorities to enforce the Rotterdam Regulation
Council Directive 96/59/EC of 16 September 1996 on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT)	Disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT)	Disposal	Waste Management (Hazardous Waste) Regulations 1998
Regulation (EU) 2023/915 of 25 April 2023 on maximum levels for certain contaminants in food	Establishes maximum levels for dioxins, dioxin-like polychlorinated biphenyls (PCBs), non-dioxin-like PCBs and perfluoroalkyl substances in food	Control of levels of specified POPs in food	S.I. 218 of 2010 – European Communities (Certain Contaminants in Foodstuffs) Regulations 2010

In addition to the POPs and chemical specific legislation covered above, there are a range of environmental directives that are relevant to implementation and control of POPs including the following:

- EU Ecolabel
- RoHS Directive
- Waste Framework Directive
- Industrial Emissions Directive
- Landfill Directive
- ELV Directive
- WEEE Directive
- SEVESO III
- Water Framework Directive
- Ambient Air Quality Directive
- Marine Strategy Framework Directive

1.6 Stakeholder Roles

Ireland's national POPs Regulations set out the organisations that have a statutory role in the fulfilment of obligations under the EU POPs Regulation and the Stockholm Convention. Regulation S.I. No. 146 of 2020, in Article 2(3) set out the public authorities concerned for the purpose of the POPs Regulation.

For the purposes of this NIP this list is a very important requirement as it sets outs the roles and responsibilities of different organisations. For completeness it is provided below. Public authorities must have regard to the requirements of the EU Regulation in the exercise of their powers, functions and duties. They are required to cooperate with each other and the EPA in carrying out their powers, functions and duties as the public authority concerned under the EU Regulation. This includes assistance in the provision of information for the preparation and implementation of the NIP, provide comparable monitoring data as may be specified, provide information on monitoring, inspections, checks, examinations and investigations, maintain records and provide information required as specified, and advise the EPA of suspected offences under these Regulations.

Figure 3: Article 2(3) of S.I. No. 146/2020 – European Union (Persistent Organic Pollutants) Regulations 2020 (irishstatutebook.ie)

(3) For the purposes of these Regulations and the EU Regulation, "public authority concerned" shall be, for –

(*a*) persistent organic pollutants used or intended for use as pesticides, the Minister for Agriculture, Food and the Marine;

(*b*) persistent organic pollutants used or intended for use in medicinal or veterinary applications, the Health Products Regulatory Authority;

(*c*) substances, on their own, in preparations or in articles, which have been identified as persistent, bioaccumulative or toxic or very persistent and very bioaccumulative, within the meaning of Regulation (EC) No. 1907/2006 of the European Parliament and the Council of 18 December 2006[2]

(i) the Health and Safety Authority,

(ii) subject to paragraph (iii), the Minister for Agriculture, Food and the Marine, in respect of pesticides, and

(iii) the Environmental Protection Agency, in respect of the prevention of environmental pollution;

(*d*) persistent organic pollutants in food and foodstuffs, the Food Safety Authority of Ireland;

(*e*) persistent organic pollutants in shellfish and relevant marine sediments, the Marine Institute;

(*f*) persistent organic pollutants being imported, the Revenue Commissioners;

(*g*) other monitoring, permitting, licensing or enforcement systems, as appropriate –

(i) a local authority or the Agency for the purposes of the Waste Management Act 1996,

(ii) a local authority or the Agency for the purposes of the Water Pollution Act 1977,

(iii) a local authority for the purposes of the Air Pollution Act 1987,

(iv) the Agency, in relation to activities licensable under the Environmental Protection Agency Acts 1992 to 2011,

(v) the Minister for Housing, Planning and Local Government, in relation to the Dumping at Sea Act 1996, and

(*h*) public health issues, the Health Service Executive

The EPA, as well as having specific roles as a public authority concerned, is also the competent authority for administrative tasks and enforcement required under the regulations. The EPA may enter into arrangements with other public authorities concerned to ensure that the requirements of the EU Regulation are implemented and complied with, including the clarification of responsibilities of the public authority concerned, the carrying out of monitoring, inspections, checks, examinations and investigations as appropriate by a public authority concerned, and the exchange of information in relation to such activities. There is also a requirement around cooperation between the EPA and the public authorities concerned. The EPA is also responsible for the collection and coordination of the information, statistical data and summary information required by the Commission under Article 13.

Local authorities also have an enforcement role in relation to waste management and ensuring that any person that holds, disposes or recovers waste does so in accordance with Article 7 Waste Management of the EU POPs Regulations.

A description of the organisations and their main responsibility in relation to POPs is provided in **Table 3** below. This list is not exhaustive and there are other organisations that may also have a role to play in the monitoring and control of POPs.

Table 3: Organisations having a statutory role under the national POPs regulations

Organisation	Role/Responsibility under POPs regulations
Department of Climate, Energy and the Environment (DCEE)	■ National policy and regulations regarding POPs[4].
Environmental Protection Agency (EPA)	■ Competent Authority for the purposes of the EU POPs Regulation ■ Substances which have been identified as persistent, bioaccumulative or toxic (PBT) or very persistent and very bioaccumulative (vPvB) as defined by the EU REACH regulation, in respect of the prevention of environmental pollution. ■ Monitoring, permitting, licensing or enforcement systems as appropriate for the purposes of the Waste Management Act 1996, Water Pollution Act 1997, Air Pollution Act 1987 and in relation to activities licensable under the EPA Acts 1992 to 2011.
Department of Agriculture, Food and the Marine (DAFM)	■ POPs used or intended for use as pesticides. ■ Pesticides which have been identified as persistent, bioaccumulative or toxic (PBT) or very persistent and very bioaccumulative (vPvB) as defined by the EU REACH regulation
Health Products Regulatory Authority (HPRA)	■ POPs used or intended for use in medicinal or veterinary applications.
Health and Safety Authority (HSA)	■ The Authority is a member of the Member State Committee of ECHA where the identification of persistent, bioaccumulative or toxic (PBT) or very persistent and very bioaccumulative (vPvB) substances in accordance with the EU REACH Regulation are agreed.
Food Safety Authority of Ireland (FSAI)	■ POPs in food[5]
Marine Institute	■ POPs in shellfish and relevant marine sediments.
Revenue Commissioners	■ POPs being imported.
Local Authorities	■ Monitoring, permitting, licensing or enforcement systems as appropriate for the purposes of the Waste Management Act 1996, Water Pollution Act 1997 and Air Pollution Act 1987.
Department of Housing, Local Government and Heritage (DHLGH)	■ In relation to the Dumping at Sea Act 1996,
Health Service Executive (HSE)	■ Public health issues

4 In addition to the responsibilities listed under the POPs regulations organisations have broader roles for example DCCE also has broader roles under Waste Management, Circular Economy and Air Quality.

5 Food being any substance or product, whether processed, partially processed or unprocessed, intended to be, or reasonably expected to be ingested by humans as defined under Regulation (EC) No 178/2002

1.7 Preparation and Structure of Updated National Implementation Plan

This plan has been prepared by the EPA. Over the course of preparing this document, discussions were conducted with key stakeholders and there was also a public consultation period. This plan is laid out in three sections:

- Section 1 – Introduction and Background to the NIP
- Section 2 – Overview of POPs Chemicals in Context of Ireland
- Section 3 – Measures and Action Plan

2. OVERVIEW OF POPS IN CONTEXT OF IRELAND

This section describes the situation in Ireland for each of the POPs listed under the Stockholm Convention, including historical uses and measures in place to prohibit or restrict them (if applicable), waste management issues and their presence in food and the environment based on available monitoring information.

2.1 Pesticides

Overview of POP Pesticides

Nineteen of the POPs listed under the Stockholm Convention are pesticide related. All of these pesticides are banned for use in Ireland, and most have been banned for plant protection use since the 1980s and 1990s. Details on individual POP pesticides are provided below.

DAFM has responsibility for POPs used or intended for use as pesticides in Ireland and this is mainly controlled via *Regulation (EC) No 1107/2009 concerning the placing of plant protection products on the market* and *Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products*. Between 2013 and 2017 the EPA, in conjunction with DAFM, Teagasc, Bord Bia[6], farming representative organisations, Local Authorities and waste management operators, held a total of 46 pilot farm hazardous waste collection events. During the campaign 68 tonnes of waste pesticides were collected and properly managed including 1.7 tonnes of persistent organic pollutants (EPA, 2020). Following on from this pilot the development of a nationwide collection and transfer of farm hazardous wastes was included as an action in the National Hazardous Waste Management Plan 2021-2027 (EPA, 2021). Refer to 2.5 Stockpiles, waste and contaminated sites for additional information on farm hazardous collections.

Monitoring for pesticides in food, foodstuff and animal feed is undertaken by DAFM under service contract with the FSAI and the Marine Institute. Monitoring for pesticides in the environment (air and water) is undertaken by the EPA and the Marine Institute. Monitoring for relevant POP pesticides in public drinking water supplies is undertaken by Uisce Éireann. Limited monitoring information is available for POP pesticides in soil. (See section 2.9 for an overview of monitoring undertaken for POPs in Ireland to date).

6 Irish Food Board

Aldrin, Dieldrin and Endrin

Aldrin, Dieldrin and Endrin are cyclodiene pesticides and were among the initial list of 12 POPs banned when the Stockholm Convention came into force in 2004. These pesticides were typically used as insecticides. Aldrin, Dieldrin and Endrin are highly toxic to human health and the aquatic environment. Aldrin may be converted to Dieldrin within the environment. Prior to this, Aldrin, Dieldrin and Endrin were already banned in Ireland in 1981 under European legislation (Council Directive 79/117/EEC) prohibiting the placing on the market and use of plant protection products.

These three POPs have been included in various environmental monitoring programmes (air and water) in Ireland over the years. There are still residues in the environment, but the levels have been steadily declining. They have also been included in monitoring programmes for drinking water, food, seafood, animal feed and wastewater in Ireland.

Information of emissions of these POPs is available from the PRTR (Pollutant Release and Transfer Register) and indicates some reported emissions of this chemical to water from urban wastewater treatment plants in the past. Additionally, they were included in a recent study of landfill leachate and were not detected in any of the leachate samples taken (EPA, 2021). There is currently no data available for the presence of these substances in soil, or wastewater sludges. This will be addressed by actions C10 and E7 in the plan.

Chlordane

Chlordane was used as a broad-spectrum insecticide on a range of agricultural crops. Chlordane is highly toxic to human health and the environment and was one of the initial 12 chemicals listed as a POP under the Stockholm Convention. Prior to this, Chlordane was already banned in Ireland in 1992 under the Irish Poisons Regulations (S.I. No. 361 of 1991).

Chlordane has been included in environmental monitoring programmes for air and water in Ireland over the years. Its presence in the environment is declining, but still detectable in low concentrations due to its persistence. Chlordane has also been included in monitoring programmes for drinking water, food, seafood and animal feed. Information of emissions of Chlordane is available from the PRTR database and indicates some reported emissions of this chemical to water from urban wastewater treatment plants in the past. There is currently no data available for the presence of these substances in soil or wastewater sludges. This will be addressed by actions C10 and E7 in the plan.

Chlordecone

Chlordecone is a synthetic chlorinated organic compound which was mainly used as an agricultural pesticide. Chlordecone was first produced in the US in 1951 and was introduced commercially in 1958. Prior to being listed in the Stockholm Convention, Chlordecone was already banned in Ireland in 1992 under the Irish Poisons Regulations (S.I. No. 361 of 1991). The limited use of Chlordecone within Europe means the potential risk for release of this chemical to the environment is low (European Commission, 2021). No monitoring data is available for this chemical in Ireland. Action E9 of this plan supports research into POPs where gaps in knowledge exist.

DDT

DDT was widely used as an insecticide to control insect-borne diseases and it was sprayed on a variety of agricultural crops, especially cotton. DDT is listed under Annex B of the Stockholm Convention meaning its use is restricted to certain, acceptable purposes and it is still applied in some countries to control the spread of malaria. Long term exposure to DDT is associated with chronic health effects and it was one of the original 12 chemicals to be listed as a POP under the Stockholm Convention. DDT was banned in Ireland in 1985.

DDT has been included in environmental monitoring programmes for air and water in Ireland over the years and to a more limited extent soil studies. DDT has also been included in monitoring programmes for drinking water, food, seafood and animal feed. Information of emissions of DDT is available from the PRTR database and indicates some reported emissions of this chemical to water from urban wastewater treatment plants and landfill sites in the past. DDT was included in a recent EPA study of landfill leachate and was not detected in any of the leachate samples taken (EPA, 2021).

Dicofol

Dicofol is an organochlorine pesticide that is chemically related to DDT. It has been used since the 1950s to control mites on a variety of crops including fruits, vegetables, ornamentals, field crops, cotton, tea, and Christmas tree plantations, as well as on non-agricultural outdoor buildings and structures (European Commission, 2021). Dicofol was listed in the Stockholm Convention in 2019. The permitted use of dicofol for plant protection products in the Union expired by 2010 at the latest according to Commission Decision 2008/764/EC (European Commission, 2021). In addition, all non-agricultural uses were prohibited according to the Biocidal Products Regulation (EU) No 528/2012. From 2020 the EU POPs Regulation prohibited all manufacture, placing on the market and uses of dicofol.

Dicofol has been in included in the Water Framework Directive (WFD) monitoring programme in recent years and has been detected on a few occasions in river and lake samples at concentrations below the EQS. An exception is that the Water Quality in Ireland 2019-2024 report identified one EQS exceedance in a transitional water (upper Suir Estuary).

Summary data on WFD Chemical Status is available from the EPA Geo Portal.[7] The portal allows the download of a summary file listing the substances, chemical status failures and waterbody types/ names. Dicofol has also been included in monitoring programmes for pesticides in food.

Dicofol was included in studies on POPs in sewage sludges in 2013 (URS, 2014) and 2017 (QED Engineering Ltd, 2017) and was detected in samples from some of the urban wastewater treatment plants studied. Recommendations were made in both studies for further sampling and investigation. It was also included in a recent study of landfill leachate and was not detected in any of the leachate samples taken (EPA, 2021).

7 EPA GEO PORTAL - Download Data. Go to the tab in the left column called Water/Water Framework Directive. The file is then called 'WFD National Summary 2019 -2024'

Endosulfan

Endosulfan is a pesticide that was used for crop protection and the control of parasites. It was used internationally on a wide range of crops including coffee, rice and cotton. It is toxic to humans and harmful to the aquatic and terrestrial environment. Exposure to Endosulfan has been linked to congenital disease and intellectual disability. Endosulfan was already banned in Ireland in 2005 prior to being listed in the Stockholm Convention in 2011 (EPA, 2018).

Both α- and β-forms of Endosulfan and Endosulfan Sulphate have been included in environmental monitoring programmes for air and water. It was included in the Water Framework Directive (WFD) monitoring programme in the past but was not detected above the LOD. Available data for public drinking water samples indicates it was detected in a small number of samples over the years but at concentrations below the EU drinking water limit. Endosulfan has also been included in monitoring programmes for food, seafood and animal feed. It was included in a recent study of landfill leachate and was not detected in any of the leachate samples taken (EPA, 2021). There is no verified data available for monitoring of Endosulfan in soil and land in Ireland. Action Table C of this plan includes measures to identify POPs contaminated land.

Heptachlor

Heptachlor is a pesticide that was mainly used on crops in Ireland. It is a possible carcinogen and has been linked with the decline of bird populations. Heptachlor was one of the first chemicals to be banned under the Stockholm Convention in 2001, but it had already been restricted in Ireland since 1981.

Heptachlor and/or cis-Heptachlorepoxide, a degradation product of Heptachlor, has been included in air and water monitoring programmes. The most recent groundwater sampling round for Priority Substances in groundwater in 2023 did not detect this chemical above the LOD. Available data for public drinking water samples indicates it was detected in a small number of samples over the years but at concentrations below the EU drinking water limit. Information of emissions of heptachlor is available from the PRTR database and indicates some reported emissions of this chemical to water from urban wastewater treatment plants in the past.

The Water Quality in Ireland 2019-2024 report identified some chemical status failure for Heptachlor in biota. Heptachlor EQS exceedances in fish and shellfish samples from five water bodies were detected in the period 2019-2024. There were exceedances from three lake water bodies where it was detected in fish (Carra Lake, Shindilla Lake, and Beltra Lake). The other two exceedances were detections in shellfish from a coastal water body (Kilkieran Bay) and a transitional water body (Kinvarra Bay). Summary data on WFD Chemical Status is available from the EPA Geo Portal.[8] The portal allows the download of a summary file listing the substances, chemical status failures and waterbody types/names.

Heptachlor has also been included in monitoring programmes for food, seafood and animal feed. It was included in a recent study of landfill leachate and was not detected in any of the leachate samples taken (EPA, 2021). There is no verified data available for monitoring of Heptachlor in soil and land in Ireland. Action Table C of this plan includes measures to identify POPs contaminated land.

8 EPA GEO PORTAL - Download Data. Go to the tab in the left column called Water/Water Framework Directive. The file is then called 'WFD National Summary 2019 -2024'

Hexachlorobenzene (HCB)

Hexachlorobenzene was used as a fungicide to control wheat bunt disease, for preservation of wood and in the manufacture of some dyes. HCB is highly toxic to some aquatic organisms and is suspected of being carcinogenic to humans, targeting organs like the kidneys and liver. HCB was already banned in Ireland in 1981 prior to be listed in the Stockholm Convention in 2001. It is also a by-product of certain industrial chemicals and exists as an impurity in several pesticide formations. As such it is listed in both Annex A and C of the Convention. HCB is not considered to be a significant POP in Ireland and its main release was assumed, based on available information, to result from its presence as an impurity in the fungicide Chlorothalonil. The use of Chlorothalonil is no longer approved in Ireland since 2020.

HCB is listed as a priority hazardous substance under the WFD and was included in the WFD river and lake monitoring programme in the past but was not detected above the EQS (either AA or MAC). It was included in recent WFD groundwater monitoring for Priority Substances in groundwater in 2020 and 2023 but was not detected above the LOD. Available data for public drinking water supplies indicates this chemical has not been detected above the LOD. HCB has also been included in monitoring programmes for food, seafood and animal feed.

Information on emissions of HCB is available from the PRTR database and indicates some reported emissions of this chemical to water from urban wastewater treatment plants. HCB was included in a study on POPs in sewage sludges in 2017 but was not detected in any of the samples (QED Engineering Ltd, 2017). It was also included in a recent study of landfill leachate and was not detected in any of the leachate samples taken (EPA, 2021). Limited, available sampling data for HCB in urban wastewater indicates it was not detected above the LOD. There is no verified data available for monitoring of Hexachlorobenzene in soil and land in Ireland. Action Table C of this plan includes measures to identify POPs contaminated land.

Lindane, and alpha- and beta- hexachlorocyclohexane (HCH)

Three forms of HCH, namely α-HCH, β-HCH and γ-HCH (the latter is also referred to as Lindane) have been used as pesticides. Lindane was also used as an anti-parasitic agent in both veterinary and human applications. Both alpha-HCH and beta-HCH were unintentional impurities in the manufacture of lindane. The inefficient manufacturing process meant that for each tonne of lindane produced, around 6-10 tonnes of the other isomers including alpha- and beta-HCH were created. All are potentially carcinogenic to humans and adversely affect wildlife and human health. Lindane has shown immunotoxic, reproductive and developmental effects in laboratory animals and aquatic life. They were listed in Annex A of the Stockholm Convention in May 2009 but were already banned in Ireland in 1981 (Council Directive 79/117/EEC).

The manufacture and use of hexachlorocyclohexane including Lindane was significant in Europe. However, the greatest issue now posed by this chemical in Europe relates to contaminated land (European Commission, 2021). The HCH in EU project[9], initiated by the European Parliament, evaluated the presence of hexachlorocyclohexane (HCH) in the EU and developed an EU-wide inventory of sites where HCH and lindane was handled (European Commission, 2022). As part of

9 https://www.tauw.com/projecten/resolving-hch-lindane-in-the-eu.html

this project one site in Ireland, involved in wood preservation, was found to be impacted by HCH and lindane contamination. Remediation work was undertaken at the site in 2018 where approximately 33m^3 of soil was removed off site. The risk from any residual contamination was assessed to be low.

HCH is listed as a Priority Hazardous Substance under the WFD and was included in the WFD river and lake monitoring programme in the past but was not detected above the EQS (either AA or MAC). It has been included in WFD groundwater monitoring sampling programmes over the years and was detected at or slightly above the LOD in some locations sampled in 2007 and 2009. In the most recent groundwater sampling campaign in 2023 it was not detected. Limited, available monitoring data for public drinking water supplies indicated it was detected in only one sample from one location but at a concentration below the EU drinking water limit. HCB has also been included in monitoring programmes for food and seafood.

Information on emissions of HCH and Lindane is available from the PRTR database and indicates some reported emissions of this chemical to water from urban wastewater treatment plants in the past. Lindane was included in a study on POPs in sewage sludge in 2017 but was not detected in any of the samples (QED Engineering Ltd, 2017). HCH and Lindane was also included in a recent study of landfill leachate and was not detected in any of the leachate samples taken (EPA, 2021).

Methoxychlor

Methoxychlor is an organochlorine pesticide and was originally developed as a replacement for DDT. It was used as an insecticide to protect crops from pests like mosquitoes and flies. Methoxychlor was listed under Annex A of the Stockholm Convention in 2023 but was already banned in the EU since 2002.

Methoxychlor was included in the most recent WFD groundwater monitoring campaign for Priority Substances in 2023 but was not detected above the LOD at any sampling location. Limited, available monitoring data for public drinking water supplies indicates it was detected in a very small number of samples but at concentrations below the EU drinking water limit. Methoxychlor has been included in monitoring programmes for food over the years. Methoxychlor is not among the 91 pollutants listed in the EU PRTR Regs. It was included in a recent study of landfill leachate and was not detected in any of the leachate samples taken (EPA, 2021).

Mirex

Mirex is an insecticide and was used mostly to combat ants and termites. It has also been used as a fire retardant in plastics, rubber and electrical goods. Mirex was one of the first chemicals to be listed in the Stockholm Convention in 2001 although it was never authorised for use in Ireland. No monitoring data for Mirex in the environment is available. It has been included in monitoring programmes for food and seafood over the years.

Pentachlorophenol

Pentachlorophenol and its salts and esters (PCP) have been used as a herbicide, insecticide, fungicide, algaecide and as an antifouling agent. Its greatest use in Ireland was as a wood preservative. The main sources of releases of PCP to the environment are largely regarded to result from its use as a wood preservative and textile applications due to volatilisation to air and runoff to water and soil. While produced intentionally, it is also a transformation product of Hexachlorocyclohexane and Hexachlorobenzene. Pentachloroanisole (PCA) is a metabolite of PCP. Both PCP and PCA are highly

toxic to humans and to aquatic life. PCB was listed in the Stockholm Convention in 2015, but the use of PCB was heavily restricted in the EU from 1991. However treated timbers can have a long life span up to 50 years. This includes primarily utility poles, but also railway sleepers, with those goods treated in the 1980s the most likely to contain PCP. The total quantity of remaining stocks of timber contaminated with PC is unknown (QED Engineering Ltd, 2017).

PCP was included in the WFD river and lake monitoring programme in the past and was detected above the LOD in a small number of samples. It has been included in WFD groundwater monitoring sampling programmes in 2014, 2020 and 2023 and was detected in only one sample. Limited, available monitoring data for public drinking water supplies indicated it was detected in one sample but at a concentration below the EU drinking water limit. No monitoring data is available for PCP in food.

Information on emissions of PCP is available from the PRTR database and indicates some reported emissions of this chemical to water from urban wastewater treatment plants in the past. It was included in a study on POPs in sewage sludge in 2017 but was not detected in any of the samples (QED Engineering Ltd, 2017). PCP was also included in a recent study of landfill leachate and was detected in leachate from two of the six landfill sites studied (EPA, 2021).

Pentachlorobenzene (PeCB)

PeCB is a chlorinated aromatic hydrocarbon with five chlorine atoms substituting hydrogen atoms on the benzene ring. PeCB has been used in PCB oils, dyestuff carriers and as a chemical intermediate in the production of the fungicide Quintozene, which is now banned. PeCB was never authorised for use in Ireland. PeCB is considered moderately toxic to humans but very toxic to aquatic life. PeCB is also listed in Annex C of the Stockholm Convention as an unintentionally produced POP. It is currently thought that the main source of PeCB contamination is through incomplete combustion processes, e.g. backyard burning of wastes.

PeCB is listed as a Priority Hazardous Substance under the WFD. It was included in the WFD river and lake monitoring programme in 2007-2009 but was not detected above the LOD. It was included in a recent WFD groundwater monitoring campaign in 2023 for Priority Substances in groundwater and was not detected above the LOD in any sample. Monitoring data is available for PeCB in seafood.

Information on emissions of PeCB is available from the PRTR database and indicate no reported emissions of this chemical above the reportable threshold. It was included in studies on POPs in sewage sludges in 2011, 2013 and 2017 but was not detected in any sample (AWN Consulting, 2011; URS, 2014; QED Engineering Ltd, 2017). PeCB was also included in a recent study of landfill leachate and was not detected in any of the leachate samples (EPA, 2021).

Toxaphene

Toxaphene is an insecticide that was used on cotton, cereal grains, fruits, nuts and vegetables. It has also been used to control ticks and mites in livestock. It was one of the initial 12 chemicals listed as a POP under the Stockholm Convention in 2001. Prior to this, Toxaphene was already banned in Ireland in 1985. No monitoring data for Toxaphene in the environment is available. Monitoring of Toxaphene in seafood has been undertaken previously (McGovern, *et al.*, 2011). Information on emissions of Toxaphene is available from the PRTR database and indicate no reported emissions of this chemical above the reportable threshold.

2.2 Industrial POPs

Overview of Industrial POPs

Industrial POPs are chemicals specifically produced for various industrial purposes. They are used in a variety of applications such as flame retardants as well as in plastics/polymers/composites, textiles, adhesives, sealants, coatings and inks, as solvent, in firefighting foams, as intermediaries in the production of other chemicals and/or in several other industrial processes. Industrial POPs are found in all sectors: energy, transport, building/construction/infrastructure, agri-food, semi-conductors, plastics and textiles. Often several chemicals are present in one product rendering recycling very complicated or impossible. Thus, the environmentally sustainable management of waste containing POPs is a significant challenge (see section 2.5 below for further discussion on POPs waste) (UNEP, n.d.).

Some industrial POPs such as PCB's (polychlorinated biphenyls) have been banned in Ireland for some time, but some newer POPs, e.g. PFOA, have only been restricted in recent years and time-limited exemptions for their use apply. Any remaining stockpiles of these chemicals need to be identified, managed and disposed of appropriately (see section 2.5 below for further discussion of management of POP stockpiles).

Furthermore, releases of industrial POPs to the environment from historical use may have occurred and may pose a risk to the environment and humans, e.g. from fire training sites, contaminated sites, landfills and dumps (see section 2.5 below for further discussion of management of POP contaminated sites).

Monitoring and control of industrial POPs in food is undertaken by DAFM and the State Laboratory under service contract with the FSAI, and the Marine Institute. Monitoring for industrial POPs in the environment (air and water) is undertaken by the EPA and the Marine Institute. Monitoring for relevant industrial POPs in public drinking water supplies is undertaken by Uisce Éireann. The Local Authorities are the supervisory authorities over private water supplies. The EPA audits a number of local authorities each year to assess their management of the monitoring responsibilities[10]. The EPA also publishes an annual report on the drinking water quality in private group schemes and small private supplies[11].

Limited monitoring information is available for industrial POPs in soil. A new proposal by the European Commission for a directive on soil monitoring was put forward in 2023. This directive will cover several aspects of soil health including monitoring of chemical indicators. (See section 2.7 for an overview of monitoring undertaken for POPs in Ireland to date).

Details on individual industrial POPs are provided below.

10 Compliance and Enforcement: Public Authorities Publications | Environmental Protection Agency

11 Drinking Water Quality in Private Group Schemes and Small Private Supplies 2024 | Environmental Protection Agency

PCBs

PCBs (polychlorinated biphenyls) are chemical substances that have been commercially produced and sold as pure oil or in equivalent from around 1929. They are extremely stable compounds with excellent electrical insulation and heat transfer properties. These characteristics have led to their widespread use in a variety of industrial, commercial and domestic applications. PCB production peaked in the 1960s/70s but stopped in many countries in the 1980s following a ban on the use of PCBs as a raw material or chemical intermediate in 1985. PCB applications are commonly categorised as either open or closed applications as follows:

- Open applications: use as heat exchange fluids, hydraulic oils, lubricating oils and as additives in paints, plastics, solvents, adhesives and cements.
- Closed applications: use as insulating fluid in electrical transformers, capacitors, power factor correction units, lighting ballasts, vacuum pumps and submersible pumps.

The EU PCB Directive (Directive 96/59/EC) required Member States to take the necessary measures to ensure that used PCBs are disposed of and that PCBs and equipment containing PCBs are decontaminated or disposed of in an appropriate manner. Contaminated equipment containing more than 5 dm^3 (5 litres) of PCBs were required to decontaminated or disposed of by 31st December 2010. Equipment contaminated by materials with total PCB concentrations between 0.05% and 0.005% by weight were allowed to be retained in use but were to be disposed of in an environmentally sound manner at the end of its useful life. However, under the recast EU POPs Regulation 2019/1021 remaining PCBs in this equipment is now required to be irreversibly destroyed by 31st December 2025.

Member States were also obliged to compile inventories of equipment with PCB volumes of more than 5 dm^3 (5 litres). The EPA has maintained this inventory since initial work undertaken in 2001 and has since then completed PCB surveys and inspections that have formed the basis for creating and updating the National PCB Inventory (Please see section 2.5 for further information on stockpiles).

The efforts to control the release of PCBs to the environment have primarily focused on their use in closed applications such as transformers and capacitors. The use of PCBs in open applications, such as in paints and sealants, is less well documented and controlled. A desktop study was commissioned by the EPA in 2021 on the potential historic uses of PCBs in open applications in Ireland (SWECO, 2021). A report on the study concluded that the availability of information on the use of PCBs in open applications in Ireland is very limited. Recommendations which may help to increase awareness and support for the future management and control of PCBs in open applications included a pilot programme of sampling and analysis for PCBs in buildings and the development of awareness/training programmes for the various stakeholders.

The EPA commissioned report PCBs in Open Applications in Ireland was published in 2021 (SWECO, 2021). The report looked at the uncontained use of PCBs in "open applications", e.g. Paints and sealants. The desktop study first reviewed the information available on the management of PCBs in open applications and then carried out consultations with industry representatives and professionals. The study also looked at the PCB congener profiles of PCB containing products. The report highlighted a set of recommendations to achieve a greater understanding of the occurrence of PCBs in open applications in Ireland.

Polybrominated diphenyl ethers Ethers (PBDE's)

PBDE's are a family of chemicals which have been used as flame retardants in goods like electrical equipment, construction materials, coatings, textiles, and polyurethane foam. This group comprises the following chemicals:

- Commercial Pentabromodiphenyl ether (PentaBDE) – a mixture of Tetrabromodiphenyl ether and pentabromodiphenyl ether (Tetra- and penta-BDE).
- Commercial Octabromodiphenyl ether (OctaBDE) – a mixture of Hexabromodiphenyl ether and Heptabromodiphenyl ether (HexaBDE and Hepta-BDE).
- Decabromodiphenyl ether (decaBDE).

These chemicals have been banned for a number of years in the EU but may still be present in certain longer life applications such as vehicles and electrical equipment that have yet to enter the waste stream.

The EPA Water Quality in Ireland 2019-2024[12] report found that in 49 of the 50 water bodies where fish (lakes and rivers) and in 21 of the 24 water bodies where shellfish (estuaries and coastal waters) was tested for poly brominated diphenyl ethers (PBDEs), concentrations in excess of the environmental quality standards (EQS) were found. The assessment was that PBDE in biota EQS exceedances were widely distributed, and failures were detected in areas free from any known direct sources. According to the water quality assessment this suggests the sources are many and diffuse. The results are in line with the OSPAR assessments of marine contaminants. The assessment in the water quality reports notes that the high exceedance rates are consistent with rates reported for the UK and in Europe, where most or all water bodies monitored have exceedances for PBDEs in biota. No food regulatory limit has been set for PBDEs, but the issue is under review by the European Food Safety Authority. The OSPAR assessments indicate PBDE concentrations in biota are reducing over time. The fact that PBDEs are still in various consumer products that have not reached the end of their life means there is still a risk for release and emissions of PBDEs into the environment if they are not appropriately managed when they eventually enter the waste stream. Additionally, it is thought that many items treated with PBDE's are already likely to be present in Irish landfills.

Under the EU POPs Regulation, waste that contains these PBDE's above a limit of 500 mg/kg is currently deemed POPs waste and the waste must be managed such that the POP content is destroyed or irreversibly transformed. Waste material exceeding this limit may not be recycled. This limit reduces to 350 mg/kg from 30 December 2025, and again to 200 mg/kg from 30 December 2027. Additionally, the WEEE Directive requires any plastic components of WEEE containing restricted brominated flame retardants (including PDBEs) to be separated out for selective treatment to ensure these substances do not re-enter the raw material supply chain.

With regard to recycled material, under the EU POPs Regulation and without prejudice to electrical and electronic equipment within the scope of the Restriction of certain Hazardous Substances Directive; the production, placing on the market and use of mixtures and articles produced partially or fully

12 Water Quality in Ireland 2019-2024

from recycled materials or materials from waste prepared for re-use are permitted as long as the sum of the concentration each of these PBDE's does not exceed 500 mg/kg. However, it is a challenge for the waste handling industry to manage wastes appropriately to comply with the above thresholds (European Commission, 2021). Analysis of specific substances is both costly and time consuming (requiring full laboratory analysis). A recent EPA funded research project evaluated the feasibility of using hand-held X-ray fluorescence (XRF) spectrometers to measure bromine in waste articles to check compliance with the above thresholds (Harrad, *et al.*, 2023). The study compared back to previous data from 2015-2016 that was published as part of an EPA funded study in 2019 (Harrad, *et al.*, 2019). Its findings published in 2023 identified ways to improve the effectiveness of hand-held XRF spectrometers to provide a faster, less expensive way than full laboratory analysis of checking whether waste articles comply with limits on brominated POPs. The study concluded that portable XRF represents a potentially effective, rapid and more cost-effective alternative.

An EPA funded study published in 2020 as part of the ELEVATE project, compared concentrations of PBDEs in human milk to a previous study carried out in 2011 (Harrad, *et al.*, 2020). The findings identified a reduction in concentration suggesting a positive correlation with the introduction of restrictions on manufacture and use of BDEs. The study also looked at the concentrations of PBDEs in indoor dust and air showing detections across multiple microenvironments.

Another EPA funded research project in 2020 called the 'FUEL' project sampled for brominated flame retardants, including the POP PBDEs, in leachate and groundwater associated with 40 landfills in Ireland (Harrad, *et al.*, 2020). POP-PBDEs were detected in 85% of leachate samples taken. Selected POP-PBDE's were detected in 50-100% of the groundwater samples taken. Concentrations were within the range previously reported in other countries. POP-PBDE's were also included in another recent EPA study of landfill leachate which took samples from six Irish landfills (EPA, 2021). POP-BDEs were detected in some of the samples taken.

Hexabromobiphenyl (HBB)

Hexabromobiphenyl is a flame retardant that was added to products including electronics mainly during the 1970s. It was included under chemicals listed for elimination (Annex A) under the Stockholm Convention in May 2009. Its production and use have ceased for several years and based on an expected lifetime of 5-10 years for electrical and electronic products it is expected that products containing HBB have already been disposed of (UNEP, 2007). HBB is also banned for use in electrical and electronic equipment under the RoHS Directive.

There is very limited monitoring information available on HBB in the Irish environment. Potential HBB contamination of the environment could arise from HBB-containing products currently in use or disposed of to landfill through generation of leachate.

Hexabromocyclododecane (HBCDD)

Hexabromocyclododecane is another flame-retardant additive that was used in a wide range of applications from building insulation materials to fabrics. It's main uses globally were in expanded and extruded polystyrene foam insulation while the use in textile applications and electric and electronic appliances is smaller. It was listed in Annex A of the Stockholm Convention in 2013. Despite these recent restrictions, many items/products containing HBCDD remain in use.

HBCDD was monitored in Wastewater and groundwater at points between 2018 and 2023. The EPA Water Quality in Ireland 2019-2024 report lists five EQS exceedances due to detections of Hexa-Bromo-Cyclo-DoDecane (HBCDD) in water samples from a small number of estuaries (mostly in northwest) at concentrations above the EQS. Three were coastal water bodies (Gweebarra Bay, Mulroy Bay Broadwater, and Broadhaven. The other two were in transitional water bodies (Outer Swilly Estuary Transitional and Lee K Estuary). The report notes that HBCDD is a synthetic industrial chemical substance that was used to fireproof construction materials like polystyrene foams to manufacture thermal insulation boards for buildings. It was also used to coat textiles and fabrics in furniture and car interiors to meet fire safety requirements. It has been banned in Europe since 2016. The water quality report mentions that the release of HBCDD into the environment is likely to be due to poor management of waste plastics, textiles and fabrics (e.g. in construction and demolition wastes). It also reports that similar to PBDEs, in wastewater treatment works, much of the HBCDDs end up in sewage sludge. Land spreading of sewage sludges can result in HBCDDs being lost to water during wet weather. Unlike PBDEs, HBCDD has not been detected in fish or shellfish above the EQS. However, due to the nature of some of the past uses of HBCDD and particularly its incorporation into insulating materials, the risk for release of HBCDD into the environment is likely to remain for considerable time if current and future HBCDD-containing wastes are not appropriately managed. As with some other POPs, it is thought that many items treated with HBCDD are likely to present in Irish landfills.

A recent study commissioned by the EPA[13] investigated the historical use of HBCDD in expanded polystyrene (EPS) and extruded polystyrene (XPS) foams in building materials within Ireland. The study found that between 1991 and 2016, it is estimated that the annual average volume of HBCDD-containing EPS insulation products required for use in the new residential building stock was 310,500 m^3/year. The corresponding estimated annual average volumes of HBCDD-containing XPS insulation products was 40,000 m^3/year. It also concluded that the potential volumes of HBCDD-containing EPS and XPS insulation waste arising over the next 20 years are likely to be subject to significant variation year-to-year and were estimated at 1,500 m^3/year (low volume scenario) and 28,500 m^3 year (high volume scenario). It found that the remediation of buildings impacted by defective building materials including pyrite and mica, is likely to be a significant source of HBCDD-containing insulation waste in future with a review of the likely waste quantities from this source further detailed within the report on the study.

An EPA funded research project in 2020 called the 'FUEL' project sampled for brominated flame retardants, including HBCDD, in leachate and groundwater associated with 40 landfills in Ireland (Harrad, *et al.*, 2020). HBCDD was detected in 65% of leachate samples taken and 80% of the groundwater samples taken and were within the range previously reported in other countries. HBCDD was also included in another recent EPA study of landfill leachate which took samples from six Irish landfills (EPA, 2021). HBCDD was not detected in any of the samples.

13 Study on the use of the Flame Retardant HBCDD in Building Insulation Materials in Ireland. As Restricted under EU Persistent Organic Pollutants (POPs) Regulation 2019/1021

A recent EPA funded research project evaluated the feasibility of using hand-held X-ray fluorescence (XRF) spectrometers to measure bromine in waste articles including HBCDD (Harrad, *et al.*, 2023). Various waste streams were tested for HBCDD including construction and demolition, soft furnishings, electrical equipment, childcare articles and end-of-life vehicle (ELV) fabrics and foams. The study compared the data gathered in 2019-2020 to data from 2015-2016. Overall, the proportion of waste articles found to exceed the LPCL (Low persistent organic pollutant concentration limit) for HBCDD in 2019-2020 was 7.7%. This was slightly lower than the LPCL exceedance of 8.7% in 2015-2016.

Dechlorane Plus

Dechlorane Plus is used as a flame retardant in adhesives, sealants and polymers. Its main application is in motor vehicles, electrical and electronic equipment and in aerospace and defence. It is imported into the EU in articles. It is not manufactured in the EU. Dechlorane Plus was listed under Annex A of the Stockholm Convention in 2023 with specific, time-limited, exemptions for its use, such as aerospace and defence applications and medical imaging applications. The EU POPs Regulations have been amended to include Dechlorane Plus through a delegated Regulation published in the EU Official Journal on the 25th September 2025.[14]

No information is available on the use of articles containing this chemical in Ireland. Globally, the most important sources of emissions/releases are estimated to be from the manufacture of Dechlorane Plus, waste dismantling and recycling, landfills and to a lesser degree, articles in use (UNEP, 2023). No monitoring information is available for this chemical in the Irish environment.

Hexachlorobutadiene (HCBD)

Hexachlorobutadiene (HCBD) is a polychlorinated compound which has been used in applications ranging from transformer dielectrics to aluminium production. It was used as a chlorine "scrubber" in the manufacture of rubber, in hydraulic and heat transfer fluids, transformer fluids and the manufacture of aluminium and graphite rods. It also had some plant protection applications. The intentional production of HCBD in Europe is thought to have ceased during the late 1970s. However, HCBD can be unintentionally produced during the manufacture of some chlorinated hydrocarbons such as perchloroethylene and trichloroethylene and this is thought to be the most important source of HCBD nowadays. European PRTR data shows that urban waste-water treatment plants are a second main source of HCBD (European Commission, 2021). The quantities of HCBD used within Ireland are unknown. HCBD was first listed in Annex A of the Stockholm Convention in 2015 and in Annex C in 2017.

HCBD is listed as priority hazardous substance in the Water Framework Directive. Data from Ireland's PRTR database indicates some reported emissions to water from urban wastewater treatment plants in the past. It was included in a recent study of landfill leachate (EPA, 2021) and was not detected in any of the leachate samples taken. While the monitoring of HBCD has been limited to date, generally, HBCD has not been found in significant concentrations in food or in the Irish environment.

14 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202501930

PFOS, PFOA and PFHxS

These three POPs are members of the per- and poly-fluoroalkylated substances (PFAS) group of chemicals. This is a very large group of thousands of man-made chemicals that have multiple fluorine atoms attached to a carbon chain. PFAS have been used in industrial and consumer products since the 1950s due to their physical and chemical properties. These properties include water and oil resistance, chemical and heat stability, friction reduction and surface tension lowering (also known as surfactant properties which results in increased dispersion of materials). They can be found in many everyday products – outdoor clothing and equipment, textiles, paints, food packaging, photographic coatings, non-stick coatings on cookware as well as fire-fighting foam. They can have harmful effects on human and animal health and stay in the environment and in our bodies for long periods of time where they can increase in concentration. They are often referred to as "forever chemicals".

While a small number of PFAS are listed in the Stockholm Convention, a few other PFAS are regulated in the EU under the REACH regulation. So, when considering aspects related to PFAS it is also advised to consider any restrictions under REACH and proposals being considered under this legislation. A proposal[15] restricting PFAS in firefighting foams under REACH was adopted in April 2025. A broader universal restriction on PFAS has also been proposed under REACH(ECHA, n.d.).

The use of PFOS, PFOA and PFHxS in firefighting foams poses potentially the greatest risk of environmental contamination and human exposure, e.g. through past uses for example at firefighting training sites leading to contaminated soil, surface and groundwater. An EPA commissioned study in 2021 looked at historic and current levels in aqueous film forming foam (AFFF) in Ireland (SWECO, 2021). AFFF is a type of firefighting foam that contains PFAS. The report on this study highlighted the wide-range, and in many instances, large volumes of PFAS-containing foams used by industry and Fire Services and the knowledge gaps that exist.

An EPA commissioned study in 2021 investigated levels of PFAS in water, soil, sediment and vegetation samples from four selected fire training sites in Ireland based on the likelihood of historical use of AFFF (AECOM, 2021). All three POP-PFAS were found in some of the samples taken as part of this study.

Separately, the EPA, at a national level, is responsible for reporting information to the EU Commission and UN on Persistent Organic Pollutants which includes data on PFAS regulated under the Stockholm Convention and summary details on contaminated sites. PFAS contamination that has been detected at Dublin and Cork airport sites was reported in the Article 13 report to the European Chemicals Agency and the country reports are published on their website[16] (See Section 2.5 for more information on contaminated sites).

While the manufacture and use of POP-PFAS has been severely restricted, their past use in a wide range of applications and items means that there remains a substantial reservoir that has entered the waste stream and will continue to do so for some years. A recent EPA funded research project in 2023 (Harrad, *et al.*, 2023) measured PFAS in a large number of waste articles covering EEE, foams and fabrics from soft furnishings and childcare items. In general, the concentrations of the 25 PFAS targeted were low.

15 Comitology Register

16 Published reports under Article 13 can be found at https://echa.europa.eu/planning-and-reporting

The FUEL study investigated the risk posed from PFAS in landfills (Harrad, *et al.*, 2020). Landfill leachate and the surrounding air, soil and groundwater were investigated for PFAS. A potential risk of PFAS contamination from landfills to the surrounding groundwater was identified as well as to waterways and land from disposal of leachate via wastewater treatment plants. Further monitoring of landfills was recommended.

The ELEVATE study investigated human exposure to PFAS with PFAS being identified in indoor air and dust, drinking water and human milk samples (Harrad, *et al.*, 2020). Levels of PFAS in human milk did not represent a health concern for nursing infants but modelling by the European Food Safety Authority indicated that exposure to PFOA, PFNA, PFHxS and perfluorononanoic acid (PFNA) in food for parts of the European population exceeds the tolerable weekly intake (TWI) (Schrenk, *et al.*, 2020). The researchers on the ELEVATE study recommended further studies on dietary exposure to PFAS in Ireland.

In 2025 a new EPA research project is commencing covering the DIetary expoSure and Risk to hEalth of Per- and poly-fluroAlkyl substances: an Irish Perspective (DISREPAIR). The project intends to address knowledge gaps on the prevalence, dietary exposure and health impacts of PFAS in Ireland.

PFOS

PFOS has many applications including electric and electronic parts, firefighting foam, photo imaging, hydraulic fluids and textiles. Many of the uses for PFOS stopped between 2000 and 2004 due to a voluntary production phase out by one of its major producers (BiPRO, 2011). It was listed under Annex B of the Stockholm Convention in 2009 meaning it can be used for acceptable purposes, i.e. for insect baits with sulfluramid as an active ingredient for control of leaf-cutting ants from Atta spp. and Acromyrmex spp. for agricultural use only. It can also be used for certain time-limited, specific exemptions such as in firefighting foam and metal hard plating. More recently the Commission has adopted the PFOS amendment Persistent organic pollutants – PFOS limits and exemptions. The EU availed of the specific exemption for use as mist suppressant for non-decorative hard chromium (VI) plating in closed loop systems, however this exemption no longer applies. No use of PFOS for this purpose is reported in Ireland. This amendment also reduced the maximum PFOS concentration allowed as unintentional trace contaminant in substances, mixtures and articles.

PFOS and its derivatives are listed as Priority Substances under the WFD.

As part of the EPA funded research project in 2023 which measured PFAS in waste articles no sample contained PFOS above the EU POP waste limit of 50 mg/kg, with the maximum concentration of PFOS detected being 0.14 mg/kg (Harrad, *et al.*, 2023).

PFOA

PFOA (perfluorooctanoic acid), its salts and related compounds were listed in Annex A of the Convention in 2019 with some specific exemptions (time-limited) regarding its use. Some of the exemptions were integrated into the EU POPs Regulation.

PFOA was used widely in the production of fluoroelastomers and fluoropolymers, to produce non-stick kitchen ware and food processing equipment. PFOA-related substances are used in fire-fighting foams, wetting agents, and cleaners. The side-chain fluorinated polymers have been employed to provide water and grease protection for textiles and leather, paper, and cardboard. These substances have also been incorporated into paints and lacquers. Other applications for these chemicals include those relating to non-woven medical garments, floor waxes and stone/wood sealants, thread sealant tapes, pastes and adhesives. PFOA can be unintentionally formed from inadequate incineration of fluoropolymers from municipal solid waste incineration (UNEP, 2017). Firefighting foams containing PFOA also poses risk of environmental contamination and human exposure similar to PFOS.

Under the EU POPs Regulations all uses of firefighting foam containing PFOA were to be prohibited from 4th July 2025. However, the European Commission proposed extending the deadline for the phase-out of PFOA in fire-fighting foam to 3rd December 2025. This proposal was adopted and the Commission Delegated Regulation (EU) 2025/1399[17] was published in the EU Official Journal on 14th July 2025. The extended deadline of the 3rd of December 2025 entered into force on the 3rd of August 2025 (20 days after its publication in the EU Official Journal).

Figure 4: Foam fire extinguishers

The Commission delegated regulation also sets a new unintentional trace contaminant (UTC) limit for fire-fighting foams installed after cleaning to avoid a situation where the new foams need to be replaced because of previous PFOA contamination. The European Commission has also released new comprehensive guidance for transitioning to fluorine free foams which captures the cleaning of firefighting foam infrastructure.[18]

Those with stocks of PFOA for the permitted uses must notify the EPA and provide details on the nature/use and storage conditions, and confirmation of correct disposal. PFOA has been used across a very wide range of articles (such as textiles, components for transport, medical devices, construction, and semi-conductors), and therefore may present challenges both in terms of management of PFOA wastes in the waste cycle, but also releases to environment from final waste disposal sites (landfill) (European Commission, 2021). As part of the EPA funded research project in 2023 which measured PFAS in waste articles, only three samples (a carpet, mattress foam and ELV fabric containing 4.7 mg/kg, 2.7 mg/kg and 1.3 mg/kg of PFOA, respectively) exceeded the EU POPs waste limit of 1 mg/kg for PFOA (Harrad, *et al.*, 2023).

17 Regulation (EU) 2025/1399

18 https://echa.europa.eu/documents/10162/6956102/EU_guidance_for_transitioning_to_fluorine-free_firefighting_foams_en.pdf/24d79e79-a1af-dd0c-0b31-bdc2f78f08fe?version=1.0&t=1753104531615&download=true

PFHxS

PFHxS was listed in Annex A of the Stockholm Convention in 2021 and subsequently incorporated into the EU POPs Regulation in 2023. Unlike PFOA, no time-limited exemptions exist for PFHxS, therefore production and use of PFHxS is prohibited. PFHxS has been used in firefighting foams, metal plating, textiles leather, upholstery, polishing agents and cleaning/washing agents, coatings, impregnation/proofing (for protection from damp, fungus etc.) and within the manufacturing of electronics and semiconductors. PFHxS has been used as a replacement for PFOS in some applications.

As part of the EPA funded research project in 2023 which measured PFAS in waste articles, PFHxS was not detected in any sample, translating into zero exceedances of the EU POP waste limit of 1 mg/kg for this chemical (Harrad, *et al.*, 2023).

Poly Chlorinated Napthalenes (PCNs)

PCNs are chlorinated compounds based on the naphthalene structure. The main uses for PCN were in wood preservatives, dielectrics, engine oil additives and dyes. Production of PCN greatly reduced during the 1970s and ceased completely after 1983. PCN can also be formed unintentionally during uncontrolled combustion processes which are thought to be currently the main release sources. Other potential PCN contamination may be due to landfill leachate from disposal of PCN-containing waste. PCN were listed in the EU POPs Regulation in 2012 (as it was a listed POP under the UNECE POPs Protocol) and listed in Annex A (with specific exemptions) and Annex C of the Stockholm Convention in 2015. There is no available monitoring information regarding PCN in the Irish environment. However, limited monitoring in food for PCN have indicated relatively low concentrations.

Short-chained chlorinated paraffins (SCCPs)

SCCPs are used as a plasticizer in rubber, paints, adhesives, flame retardants for plastics as well as an extreme pressure lubricant in metal working fluids. The rubber industry (conveyor belt, gaskets, hoses) was the main application of SCCPs followed by the sealants and adhesives sector and by the paints and varnishes sector. The textile industry covered only a small fraction of the overall used amount of SCCPs (European Commission, 2021). The carbon chain length of commercial chlorinated paraffins is usually between 10 and 30 carbon atoms. Short-chained chlorinated paraffins are between C10 and C13. SCCPs were listed under Annex A of the Stockholm Convention in 2017 with specific, time-limited exemptions for production and certain uses, however these exemptions have since expired.

SCCP was tested under the WFD monitoring programme in Ireland during 2007-2009 and 2022-2024. Chemistry data for waterbodies across Ireland can be downloaded on the EPA Catchments[19] website. Waste containing SCCPs pose a potential risk if not appropriately managed. Leather which has been impregnated with SCCPs in the past can enter the waste stream due to its long lifetime. Additionally, concerns have been raised over the presence of SCCPs within recycled plastics, where SCCPs have been used in the past as a softener within plastic materials (European Commission, 2021).

19 https://www.catchments.ie/

UV-328

UV-328 was used as an ultraviolet (UV) absorber. It was mainly used in the automotive industry, for paints, coatings, sealants, adhesives, plastics and rubbers to protect the material from UV light induced degradation or colour change. UV-328 was listed under Annex A of the Stockholm Convention in 2023 with specific, time-limited exemptions for certain uses. UV-328 was already included in Annex XIV to REACH, with a latest application date on 27 May 2022 and a sunset date on 27 November 2023. The European Chemical Agency (ECHA) have confirmed that no applications for authorisation have been submitted to ECHA for UV-328 and therefore as the sunset date has now passed, this would indicate there are no uses of UV-328 in the EU under the scope of authorisation under REACH[20].

The risk profile for UV-328 prepared by POPRC (UNEP, 2022) indicated the following regarding sources of this chemical to the environment:

- UV-328 may be released to the environment during industrial production and use of the substance, during its use in products, and when products are disposed or treated at end-of-life.
- The discharge of products containing UV-328 into waste streams means wastewater treatment plants, landfills and storm water are considered to be sources of UV-328 to the environment.
- According to Norway, emission of UV-328 to both the indoor and outdoor environment has been observed. UV-328 has been detected in indoor air and dust, wastewater, wastewater sludge, river water and biota in source regions and in biota in remote regions.
- UV-328 is also expected to enter soil from the application of wastewater biosolids.
- A major use of UV-328 is as an additive in plastics.
- The use of UV-328 in textiles can also be a source of releases of UV-328 to the environment and wastewater treatment plants when textiles are washed.

No information or data is available on the use or releases of UV 328 to the environment in Ireland. Furthermore, there is no available monitoring information regarding UV-328 in the Irish environment or food. Actions to address monitoring of new POPs are under Table E.

20 https://echa.europa.eu/received-applications#afapersubst

2.3 Unintentional POPs

Overview of U-POPs

Unintentionally formed POPs (u-POPs) are not specifically manufactured as commercial chemicals and include dioxins and furans, polychlorinated biphenyls (PCBs), hexachlorobenzene (HCB) and pentachlorobenzene (PeCB). Also, known as unintentional by-products, these POPs may be formed inadvertently, mainly as a result of incomplete combustion (such as backyard burning of waste) or as an unintentional by-product of the manufacture of other chemicals. Unintentional POPs are listed in Annex C of the Stockholm Convention. (Note: some unintentional POPs are also listed in Annex A and/or B of the Stockholm Convention as industrial POPs or POP pesticides as they were, or are, also manufactured intentionally. See Table 1 in section 1.1 for reference).

Air is the main transport medium for unintentionally produced POPs. Many of these chemicals may be formed in temperate climates and through the process of re-volatilization and condensing, also called the "grasshopper effect", can be carried thousands of kilometres from their sources.

In the EU where policy and regulation have identified and reduced the emissions from industrial sources over the past two decades, diffuse sources linked to for example domestic combustion or open burning of waste become increasingly important U-POPs sources (European Commission, 2021).

Parties to the Stockholm Convention are required to develop and maintain inventories of sources and estimates of releases of unintentional POPs. Ireland last updated its inventory of sources and releases of unintentional POPs in 2017 (Ricardo Energy and Environment, 2017). The Inventory addressed the main source categories as per the ENEP Toolkit (see Table 4 below) and estimated releases to land, air and water as well as product and residues. Details of the findings of this update are included in the previous, 2018 update of Ireland POPs NIP.

Table 4: UNEP Toolkit Main Source Categories (Unintentional POPs)

Group	Main Source Categories
1	Waste Incineration
2	Ferrous and Non-Ferrous Metal Production
3	Heat and Power Generation
4	Production of Mineral Products
5	Transportation
6	Open Burning Processes
7	Production of Chemicals and Consumer Goods
8	Misc. (e.g. Crematoria, Dry Cleaning)
9	Disposal
10	Potential Hot-Spots (e.g. PCB-containing equipment)

Information on releases of u-POPs is also available from Ireland's Pollutant Release and Transfer Register (PRTR) and Ireland's inventory Reporting of air pollutant emissions under the Convention on Long Range Transboundary Air Pollution (CLRTAP) (Hyde, *et al.*, 2022).

Article 5 of the Stockholm Convention requires Parties to develop an Action Plan for unintentional POPs as part of its NIP. This action plan is required to include measures to reduce or eliminate (where feasible) releases of POPs from unintentional production. The Measures and Action Plan in Section 3 includes actions which address unintentional POPs, as well as intentional POPs.

Hexachlorobenzene (HCB)

Hexachlorobenzene (HCB) is a fungicide which was broadly used to control wheat bunt disease. It occurs as an impurity in various pesticide formulations and is also a by-product of the manufacture of particular industrial chemicals. HCB is suspected of being carcinogenic and can cause damage to organs such as the liver through prolonged exposure. It is also highly toxic to aquatic life.

HCB was previously banned in Ireland in 1981 and was later added to Annexes A and C of the Stockholm Convention in May 2009.

Hexachlorobutadiene

Hexachlorobutadiene occurs as a by-product during the chlorinolysis of butane derivatives in the production of both carbon tetrachloride and tetrachloroethene. These two commodities are manufactured on such a large scale, that enough HCBD can generally be obtained to meet the industrial demand. Hexachlorobutadiene was also manufactured intentionally and is also listed in Annex A of the Convention (see section 2.4 above).

Pentachlorobenzene

Pentachlorobenzene (PeCB) was used intentionally in polychlorinated biphenyl (PCB) products, dyestuff carriers and as a chemical intermediate in the production of the fungicide Quintozene. PeCB can also be unintentionally produced during combustion, thermal and industrial processes. It is moderately toxic to humans and very toxic to aquatic life. Currently the main source of PeCB contamination is due to incomplete combustion. See the pesticide section also.

Polychlorinated Biphenyls (PCBs)

See PCBs under the Industrial POPs section for an overview of PCBs. As unintentionally formed POPs the following are also covered under Annex 3 category substances, Polychlorinated dibenzo-p-dioxins (PCDD), Polychlorinated dibenzofurans (PCDF), and Polychlorinated napthalenes (PCNs).

Polychlorinated dibenzo-p-dioxins (PCDD)/Polychlorinated dibenzofurans (PCDF)

PCDDs and PCDFs were among the first 12 POPs listed under the Stockholm convention. They were not produced commercially unlike other POPs but can be unintentionally produced due to incomplete combustion and from some manufacturing processes. While they can occur from natural events such as forest fires, they are mostly released during waste incineration as well as vehicle emissions.

PCDDs and PDCFs are structurally similar with many of the same toxic effects. There are 75 different PCDD congeners (with seven considered to be of concern) and 135 PCDF congeners. The most toxic congener being 2,3,7,8-tetrachlorodibenzodioxin (TCDD).

Both PCDDs and PCDFs are classed as possible human carcinogens. Other possible health effects include skin lesions (chloracne), reproductive and developmental effects, immunotoxicity and impact on thyroid hormones. Human exposure mainly results from food, particularly animal products.

Polychlorinated napthalenes (PCNs)
See PCNs under the Industrial POPs section for an overview of PCNs.

2.4 New POPs

The most recent Conference of Parties (COP 12) decided to amend part I of Annex A to the Stockholm Convention to list three additional chemicals under the Stockholm Convention[21].

Medium-chain chlorinated paraffins (MCCPs)
Medium Chain Chlorinated Paraffins (MCCPs) are part of are a large group of industrial chemicals called Chlorinated paraffins (CPs). They are classified as medium chain chlorinated paraffins due to their carbon chain length ranging from C14-C17. Their various physical and chemical properties, such as high chemical stability and flame resistance, as well as the low cost of production means they are used in a wide range of applications.

MCCPs can be found in polyvinyl chloride (PVC) as secondary plasticisers to improve flexibility. They are also used as additives in metal working fluids, adhesives, sealants, paints and rubber. They are toxic to the aquatic environment.

MCCPs have also been identified as substances of very high concern (SVHC) under REACH legislation[22] due to their PBT and vPvB properties. A restriction proposal was submitted for MCCPs[23] in 2022. ECHA's RAC and SEAC adopted their opinions on the restriction proposal for MCCPs in 2023. The opinion was furnished to the EU Commission for consideration to prepare draft legislative.

Long-chain perfluorocarboxylic acids (LC-PFCAs)
Long chain perfluorocarboxylic acids (LC-PFCAs) are industrial chemicals which fall under per-and polyfluoroalkyl substances (PFAS). They are classified as long chain due to a carbon chain length of C9-C21. They can be found in various products such as aqueous film-forming foam (AFFF) for firefighting, cleaning products and surface treatments due to their repellent properties.

LCPFAs are persistent and bioaccumulative and can have adverse health effects.

Chlorpyrifos
Chlorpyrifos is an insecticide that was widely used in agriculture and as a biocide for non-agricultural pests. Chlorpyrifos is highly toxic to aquatic communities, early life stages of fish and aquatic invertebrates, bees, birds and mammals. It has been linked to health issues like neurodevelopmental toxicity and neurotoxicity in humans.

The placing on the market and use of chlorpyrifos in plant protection products has been prohibited in the EU since 2020 following the non-renewal of its approval.

21 COP Decisions
22 Candidate List of substances of very high concern for Authorisation – ECHA
23 Registry of restriction intentions until outcome – ECHA

2.5 Stockpiles, waste and contaminated sites

While the manufacture and use of most POPs ended some years ago, exposure of humans and the environment can continue from stockpiles, improperly managed POPs waste, landfills, dumps, or contaminated sites where a large part of the POPs environmental burden has been deposited or stored (Weber, *et al.*, 2008). Secondary sources of POPs, such as PFOS and PFOA, may also include the spreading of sewage sludge on agricultural land and discharge of wastewater; alongside the disposal of air pollution control residues from waste incinerators to landfill which can contain POPs such as dioxins and dioxin-like PCBs, and which contribute to contamination of landfill leachate. Therefore, the identification and assessment of POPs contaminated sites, deposits, their on-going presence in articles that remain in use along with an assessment of their impact is a crucial part of assessing POPs exposure risk and management needs.

Stockpiles

Despite most POP pesticides being banned in Ireland for some time, evidence indicates stockpiles of unused POP pesticides, from former use, are still likely to exist on farms. The destruction of pesticide stockpiles began in the 1990s when DAFM removed its reserve of pesticides. A campaign then followed where old chemicals still stored in agricultural shops and Co-operatives were removed for waste disposal. Between 2013 and 2017 the EPA, in conjunction with Teagasc, Bord Bia[24], farming representative organisations, Local Authorities and waste management operators, held a total of 46 pilot farm hazardous waste collection events. The collections were geographically spread throughout the State and resulted in the collection and safe disposal of 1.7 tonnes of identified POP pesticides (EPA, 2020).

Figure 5: Farm Hazardous Waste Collection in Navan

DAFM and DCEE undertook three trial collections of farm hazardous waste in 2024 in conjunction with the Irish Farm Film Producer Group (IFFPG). Enva Ireland Ltd. were awarded the contract to undertake the collection and disposal of the waste at all three locations. Approximately 600 farmers used the trial service with almost 95 tonnes of hazardous waste collected.

A national programme of regional farm hazardous waste collections commenced in 2025, with DAFM and DCEE co-funding of €150,000. This is proposed as a permanent solution with annual nominated collection days.

As part of end user inspections, the DAFM continue to raise awareness about the risks associated with stockpiles of old pesticides (including POP pesticides) and the requirements for safe disposal of same. However, it is thought that stockpiles of unused POP pesticides remain on farms and further action may be needed to safely manage and dispose of them.

As noted in the PCB section 2.2.2, Member States must compile inventories of equipment with PCB volumes of more than 5 dm^3 (5 litres) as per the EU Directive 96/59/EC. Holders of PCBs or equipment containing more than 5 litres of PCBs must give notice to the EPA no later than the 1st of September each year as per Waste Management Regulations (S.I. No. 163 of 1998).

To assist holders of PCB-contaminated materials and/or equipment in notifying the EPA of such holdings, an Online PCB Notification system was developed and is maintained by the EPA. At its height, the total volumes of confirmed and suspected PCB contaminated materials on the inventory stood at approximately 250,000 litres. At the end of 2024 there were approximately 10,000 litres on the inventory all of which are required to be appropriately disposed of by end 2025. Work is ongoing to ensure that remaining PCB holdings are managed in a safe, efficient and environmentally sound manner. Information and updated guidance for stakeholders on PCBs is published on the EPA website: PCBs | Environmental Protection Agency.

EU POPs Regulations (Regulation (EU) 2019/1021) currently restrict the manufacturing, placing on the market and use of PFOA. However, time-limited exemptions are in place for the use of PFOA in firefighting foam, photolithography, semiconductor manufacturing and certain medical devices. Holders of stockpiles containing PFOA or PFOA related substances that are greater than 50kg and above threshold concentrations must notify the EPA annually. Notifications including details on the nature and size of the stockpile can be submitted through a PFOA reporting system via the EPAs Environmental Data Exchange Network portal.

To date[25] a total of approximately 667,782 kg of PFOA firefighting foam has been notified to the EPA via the online PFOA stockpile reporting system. Approximately 9% of this is reported as being still in use per the specific exemption. The remainder is reported as being in storage on site/awaiting disposal or as having been disposed of already. The EPA is working on checking and verification of this stockpile register. As part of this work, the EPA encourages various organisations and networks (e.g. industry trade associations, fire industry associations, local authority representatives) to raise awareness of the obligations and deadlines concerning stocks of PFOA. Safer alternatives to PFOA containing

25 As of the 8th of October 2025

firefighting foams exist in the form of fluorine free foams. It has been reported that fluorine-free foams are comparable to fluorine-based AFFFs and fire-fighting foams with PFOA in their performance and in meeting relevant certifications for almost all uses (UNEP, 2018). The EPA has not received reports of anyone using PFOA in Ireland for any of the other permitted uses under the EU POPs Regulation.

Figure 6: The status of the PFOA stockpile inventory in October 2025.

The information gathered from monitoring of stockpiles is reported to the European Chemicals Agency (ECHA) under Article 13 of the EU POPs regulations (Regulation (EU) 2019/1021): https://echa.europa.eu/planning-and-reporting.

Waste

The presence of POPs in waste poses a significant risk to the environment and human health if not managed appropriately. Annex IV of the EU POPs Regulation sets out the concentration limits for POP content in waste material, and waste with POP content above these limits is deemed POP waste and must be destroyed or irreversibly transformed. Waste with POPs above these limits may not be recycled. However, the identification and management of POP waste within waste streams is challenging as conventional methods for measuring POPs are technically demanding and expensive. This presents a potential obstacle in the current drive in the EU to transition to a Circular Economy where the objective is to keep resources in use for as long as possible, for example by maximising recycling. The challenge is in ensuring that POPs in waste are appropriately identified, taken out of circulation and destroyed.

The recast 2019 EU POPs Regulation provided a stronger focus on POPs waste and waste management. Additional focus was also given to management of POPs within waste streams and traceability to avoid regrettable re-entry to the market through recycling (European Commission, 2021). Recital 17 of the POPs Regulation specifically states:

"In order to promote the traceability of waste containing POPs and ensure control, the provisions of the record keeping system established in accordance with Article 17 of Directive 2008/98/EC should apply also to such waste containing POPs which is not defined as hazardous waste according to Commission Decision 2014/955/EU22".

This means that for wastes containing POPs, even when not classified as hazardous, the record keeping obligations that apply to producers or installations managing hazardous waste, will also apply, including documenting the quantity, nature and origin of the waste and the destination of the waste (European Commission, 2021).

Further, focused action is required in Ireland to strengthen implementation and enforcement of the waste management provisions of the recast EU POPs Regulation. Planned measures and actions relating to POP waste are detailed in section 3.5 below.

POPs Contaminated Sites

There is currently not one single, existing overarching policy or legislation on contaminated sites in Ireland. Rather there are various pieces of different legislation used to manage and remediate (where necessary) contaminated sites such as the Water Pollution Act; EPA Acts (for waste and industrial sites licensed by the EPA) and the Planning and Development Acts (e.g. for contaminated sites being redeveloped). Contaminated soil from such sites also presents a waste management challenge.

A new proposal by the European Commission for a directive on soil monitoring and resilience[26] was put forward in 2023. This directive will require member states to draw up a register of contaminated and potentially contaminated sites. Once identified, sites should be investigated and measures taken to address and manage the risks.

Under Article 13 of the POPs Regulation (EU) 2019/1021 Member States can report POPs contaminated sites. This optional reporting is through the European Chemicals Agency and the country reports are published on their website[27]. A small number of sites contaminated with POP chemicals have been identified in Ireland to date. They mainly comprise of airports or other fire training sites contaminated with POP-PFAS (PFOS, PFOA and PFHxS) and one site used for wood preservation contaminated with Lindane.

PFOS and PFOA were initially detected at Dublin Airport as a result of site investigations during runway development in 2017. In 2021 Dublin Airport Authority (daa) commissioned an external review to assess and identify possible risks resulting from legacy use of firefighting foam at the airport (DAA PLC, 2024). The two-year PFAS risk assessment involved monitoring of surface water and groundwater, soil sampling and site investigations. PFAS were detected at varying concentrations across the monitoring points. Details on the PFAS related work being undertaken at the Dublin Airport has been made available by the Dublin Airport Authority on their website[28]. The daa are currently engaging a contractor to carry out a quantitative risk assessment to ensure PFAS risks are appropriately managed.

Any PFAS contaminated soil when excavated and designated as a 'waste' must be transported in accordance with strict regulations and sent to an appropriately authorised waste facility for treatment. There is limited authorised capacity within Ireland to accept and treat PFAS contaminated waste.

26 EUR-Lex – 52023PC0416 – EN – EUR-Lex

27 Planning and reporting – ECHA

28 PFAS information is available on the Dublin Airport website at Sustainability at Dublin Airport and Soil and Water Management | North Runway | Dublin Airport

Ireland's lack of sufficient infrastructure to treat PFAS contaminated soil has been highlighted as an 'at risk' hazardous waste stream in the EPA's Mid-term evaluation of the National Hazardous Waste Management Plan 2021-2027. Fingal County Council is the authority responsible for environmental regulation and monitoring at Dublin Airport. Contamination of private drinking water wells with PFOS and PFOA was detected adjacent to Cork Airport. As a result, the private dwellings were moved to the mains fed drinking water supply. Cork Airport are currently conducting a full site risk assessment with a view to monitoring progress towards required remediation. Again, in this instance it is the local authority that is the authority responsible for environmental regulation and monitoring of this facility. The relevant local and national authorities remain in contact with daa in relation to ongoing risks from PFAS contamination at the Dublin and Cork airport sites.

Recent studies have identified the widespread presence of PFAS contamination within water resources across Europe (European Commission, 2021). Contamination at these sites is likely a result of the historical use of PFAS containing fire-fighting foams or industrial uses. Given the use of PFOS and PFOA containing fire-fighting foams in Ireland in the past it is likely that there are more such contaminated sites in Ireland. Measures to identify, risk assess and remediate them (where necessary) are required (EEA, 2024). PCB contamination of land has been identified in Ireland at sites such as non-operational industrial sites. In some cases, PCB containing electrical equipment has been vandalised releasing PCBs into the environment.

Monitoring undertaken as part of the Water Framework Directive (WFD) includes many POPs and provides evidence regarding their presence in surface waters and ground water. In this respect it provides a mechanism to identify contaminated sites associated with water bodies. Other sources of information maybe through monitoring data for EPA licensed facilities.

Under S.I No. 542/2008, the EPA process applications for certificates of authorisation in relation to Historical landfills (also referred to as 'closed landfills'). The certificates specify the control and remediation measures required to ensure waste disposed or recovered in the closed landfill does not result in environmental pollution. While POPs are not specified in these regulations, the risk assessment process screens for dangerous substances which can identify contamination.

For background guidance on the management and remediation of POPs contaminated sites the UN has guidance on best available techniques and environmental practices for management of sites contaminated with POPs which is available at POPs contaminated sites Guidance. At a national level the EPA provides a useful information source on for EPA licensed sites through its Guidance_on_the_Management_of_Contaminated_Land_and_Groundwater_at_EPA_Licensed_Sites.pdf. The guidance covers a risk-based approach to assess and remediate contamination on site. It should also be used when assessing unregulated historic landfills. Guidance documentation in relation to PCB contaminated land can be found on the EPA website: Local Authority PCB Contaminated Land Guidance | Environmental Protection Agency.

Outside of EPA licensed sites the responsibility for environmental monitoring and regulation falls under the relevant local authorities which includes a wide range of roles – for example, under the Waste Management Act and Water Pollution Act as well as the Planning and Development Act.

2.6 Awareness, information and education

The EPA has a continued focus on providing public information, awareness and education around POPs in line with requirements under the Stockholm Convention. Over time the publicly accessible EPA POPs webpage has been updated and a PFAS webpage was developed. Both are updated on an ongoing basis, as well as the PCB page which has recently been updated to reflect ongoing legislative changes.

Useful guidance documentation has also been added to the website including a Guidance document and infographic for users of PFAS/PFOA fire-fighting foams that highlights the risks posed and obligations regarding its use. This also includes a factsheet and frequently asked questions document on obligations regarding reporting stockpiles of PFOA foams. The documents were shared on social media (EPA's twitter account), and with key stakeholders including the fire services and EPA-licensed/ registered sites. There are also information leaflets for both suppliers and users of foam fire extinguishers containing PFOA. The information was shared on a dedicated webpage which consolidated guidance information and provided updated information on regulation updates[29].

- The Changing Nature of Fire-Fighting Foams – Guidance Booklet https://www.epa.ie/publications/monitoring--assessment/waste/AFFF-Booklet-Web.pdf
- PFOA EPA Factsheet – Guidance leaflet on PFOA in fire-fighting foams Monitoring & Assessment: Waste Publications | Environmental Protection Agency (epa.ie)
- EPA FAQs on PFOA foam reporting stockpiles Monitoring & Assessment: Waste Publications | Environmental Protection Agency (epa.ie)
- Determining Historic and Current PFAS Levels in AFFF in the Republic of Ireland Monitoring & Assessment: Waste Publications | Environmental Protection Agency (epa.ie)
- PFOA information leaflets for specific guidance for Suppliers and Users of Foam Fire Extinguishers.

Figure 7: PFOA in AFFF guidance leaflet

Other awareness activities have included a notification letter that was circulated to EPA-licensed sites outlining obligations under the EU POPs Regulation PFOA restriction. EPA also has presented to and held discussions with the National Directorate for Fire and Emergency Management and Chief Fire Officers on risks posed and obligations regarding PFOA in fire-fighting foams.

29 Fire Fighting Foam Restrictions | Environmental Protection Agency

As part of EPA engagement activities on POPs a desktop study and survey of users of PFAS-containing fire-fighting foams was carried out by the EPA. This study which is available on the EPA website highlighted the potential risks to human health and the environment via their disposal and use (SWECO, 2021). Key sectors using PFAS foams were identified as well as potential risks. Specific brands of PFAS containing foams were highlighted as well as incidents that involved the use of large volumes of foams in the past. The report was shared with the fire services and EPA-licensed/registered sites in view of the legislative requirements around the phase out of some PFAS that are categorised as POPs.

In 2022 the EPA National Persistent Organic Pollutants Forum was set up. The forum of relevant public authorities deals with implementation, coordination and knowledge exchange under the European Union (Persistent Organic Pollution) regulations. (see section 2.8 on POPs Forum)

The EPA State of Environment Reports 2020 (EPA, 2020) and 2024 (EPA, 2024) have provided an overview of chemical topics that include POPs. There is an overview of chemical related topics provided in Chapter 14 of the 2024 report – Ireland's State of the Environment Report 2024 – Chapter 14 – Environment, Health and Wellbeing | Environmental Protection Agency (epa.ie). The chapter covers an overview on PFAS and work on the PFOA stockpiles, as well as the challenges in relation to chemicals and land spreading of sludges.

The EPA contracted a study on the use of the Flame Retardant HBCDD in Building Insulation Materials in Ireland as Restricted under EU Persistent Organic Pollutants (POPs) Regulation 2019/1021. This study is available on EPA website[30].

An Interim Position Paper on Per- and Poly-Fluoroalkyl Substances (PFAS) on PFAS in Drinking Water was published by the Health Service Executive (HSE) on their website (HSE, 2022). A Frequently Asked Questions document[31] on PFAS in Drinking Water was also published in 2022. Reference was made in the documents to PFOS, PFOA, PFHxS and PFNA.

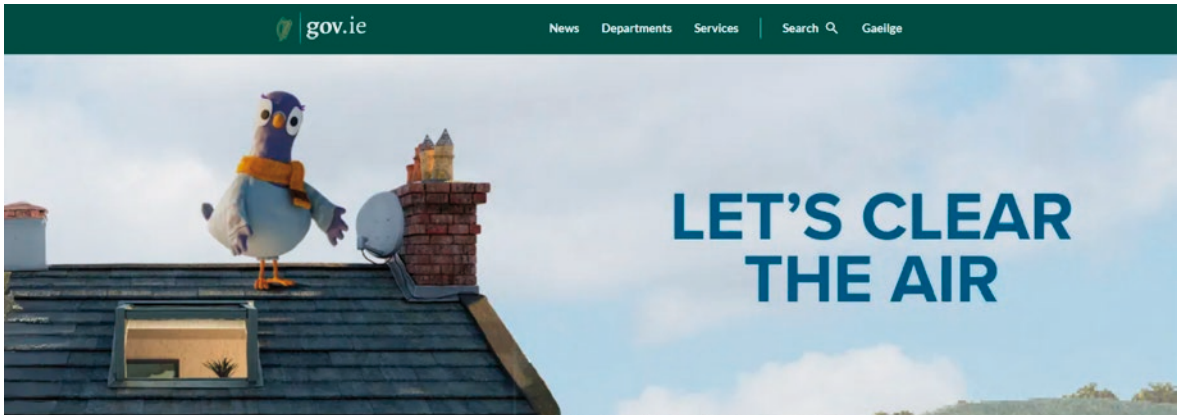
The Department of Climate, Energy and the Environment (DCEE) "Lets Clean the Air" awareness campaign was set up to address this serious public health challenge through a number of measures outlined in the Clean Air Strategy for Ireland to reduce the effects of solid fuel use in a residential setting. In Ireland an estimated 1,410 people die prematurely due to air pollution each year. The majority of these are directly linked to particulate matter resulting from burning solid fuel such as coal, peat or wood in a residential setting[32]. DECC introduced the new solid fuel regulations in October 2022 and Irelands first Clean Air Strategy in 2023. Whilst not specifically targeting POPs the awareness campaign and Clean Air Strategy will aid in reducing solid fuel use and improving the quality of solid fuel and solid fuel appliances used for heating purposes which should result in a decrease in POPs such as dioxins. In addition, the Air Pollution Act (1987) is currently under review and amendments to the Act will seek to boost enforcement in this area.

30 https://www.epa.ie/publications/monitoring--assessment/waste/Study-on-the-Use-of-the-Flame-Retardant-HBCDD-in-Building-Insulation-Materials-in-Ireland.php

31 FAQs – PFAS in drinking water

32 https://www.gov.ie/en/campaigns/80237-lets-clear-the-air/

Figure 8: DCEE 'Lets Clear the Air' campaign webpage



The EPA app called "See it? Say it!" can also be used for reporting environmental pollution or any concerns in relation to POPs pollution, for example illegal burning of waste. The app allows the public to report pollution or noise complaints which are sent to the relevant local authority for follow up.

For further information relating to education please see the following section which outlines research, development and monitoring undertaken around POPs, all of which are also very relevant to the requirements in the convention around awareness, information and education.

2.7 Research, development and monitoring

Research and development

Since the previous 2018 POPs NIP, various research projects have been undertaken or are underway to further our understanding of various aspects of POPs in Ireland, including those that are outlined below.

The EPA funded the WAFER Research Report 272 from 2019 covered the 'Evaluation of Hand-held XRF for Screening Waste Articles for Exceedance of Limit Values for Brominated Flame Retardants' (Harrad, *et al.*, 2019)**.** Three research papers relating to this project were published in peer-reviewed scientific journals.

The EPA funded the ELEVATE Research Report 343 published in 2020 on 'Elucidating Levels and Pathways of Human Exposure in Ireland to Brominated Flame Retardants and Perfluoroalkyl Substances' (Harrad, *et al.*, 2020)**.** The project investigated human exposure to a selection of PFAS (including PFOS and PFOA) and brominated flame retardants (BFRs). Indoor air and dust from homes, cars, school classrooms and offices were analysed as well as drinking water (tap and bottled water) and human milk samples. The project report and project highlights video were published on the EPA website and social media.

The EPA funded FUEL Research Report 345 published in 2020 on 'Furthering Understanding of Emissions from Landfilled Waste Containing POPBFRs and PFASs' investigated the risks posed from BFRs and PFAS in landfills (Harrad, *et al.*, 2020). Landfill leachate and the surrounding air, soil and groundwater were investigated. The project report and project highlights video were published on the EPA website and social media.

The EPA Research Report 434 published in 2023 on 'Persistent Organic Chemicals in the Irish Waste Stream' (Harrad, *et al.*, 2023) evaluated the feasibility of using hand-held X-ray fluorescence (XRF) spectrometers to measure bromine in waste articles to check compliance with limit values. It also generated an extensive database on concentrations of POPs and related chemicals in waste plastic articles in Ireland. This permits assessment of whether recent bans on the use of some POPs has reduced their presence in Irish waste and establishes a baseline against which the success of possible future restrictions on other chemicals may be evaluated. Further details are also available on the project website.[33] The project report is available on the EPA website.

Figure 9: EPA research reports looking at various aspects of POPs in Ireland

The ongoing EPA Research Project (2022-2025) on an 'Assessment of the Environmental Contamination of Irish Soils and Sediments with Hazardous Chemicals' (Terrachem Project)[34] has a goal to undertake a nationwide assessment of the presence of emerging chemicals of concern (ESOCs) from anthropogenic sources in the Irish environment. A range of organic chemicals which are of concern due to environmental persistence and/or toxicity have been identified and are being measured in several matrices from a variety of sources. Samples of soils, sediments, and biosolids are covered by the project team based in NUIG and analysed there, as well as in partner labs at the University of Birmingham who led the analysis and relevant method development.

The ongoing 2023 to 2027 EPA Research Project on 'Investigating PFAS from Source to sink – Assessing risk to inform a PFAS Strategy in Ireland' (INVEST-pFASST project)[35] aims to identify potential sources and pathways of PFAS in the Irish environment. The project is aimed at a range of stakeholders ranging from industry, regulatory bodies, water services, Government Departments, the public, and the research community. The project will also provide an assessment of PFAS contamination in Ireland through a detailed multidisciplinary programme for research. The resulting data will provide substantive and comprehensive understanding regarding PFAS pathways and sources which can be used to assist policy makers and those involved in decision making. A strong multi-disciplinary team has been established by DCU (Dublin City University) to deliver on this ambitious project.

33 SAFER – University of Galway

34 terrachem – University of Galway

35 INVEST pFASST – DCU Water Institute and Research Data Table Dev | Environmental Protection Agency (epa.ie)

The research paper "Development and application of an LC-MS method to the determination of poly- and perfluoroalkyl (PFASs) in drinking, sea and surface water samples" was published in 2022 (Huerta, *et al.*, 2022). Research was carried out by the DCU Water Institute with support from the Marine Institute. The objective of this research was to develop and validate an analytical method for 15 PFAS in river water, drinking water and seawater samples. The developed method was used to assess the existence of these contaminants in Ireland allowing for the identification of both short and long chain compounds.

The Marine Institute funded "MariBiome" project[36] is a five-year project aiming to transform how Ireland measures and monitors the health of its marine ecosystems. The project will bring together an interdisciplinary team of researchers across Ireland and Northern Ireland. Among the expected outcomes they plan to design a modular marine sampling unit for various substances including chemical contaminants.

The National Challenge Fund supports academic research teams to develop ideas which help Ireland become an environmentally sustainable economy. In response to the challenge UCD is leading a project team under the challenge area 'Healthy Environment for All'. The project is titled *PFAS Cleanup – A sustainable solution for the disposal of PFAS-containing Aqueous Film Forming Foams (AFFF)*[37]. The project seeks to find a sustainable solution for disposing of PFAS containing firefighting foams using a combination of photochemistry and microbiology to degrade the PFAS.

Figure 10: Research Ireland National Challenge Fund

36 New Marine Institute-Funded Project "MariBiome" | Marine Institute

37 PFAS Cleanup: A Sustainable Solution for the Disposal of PFAS

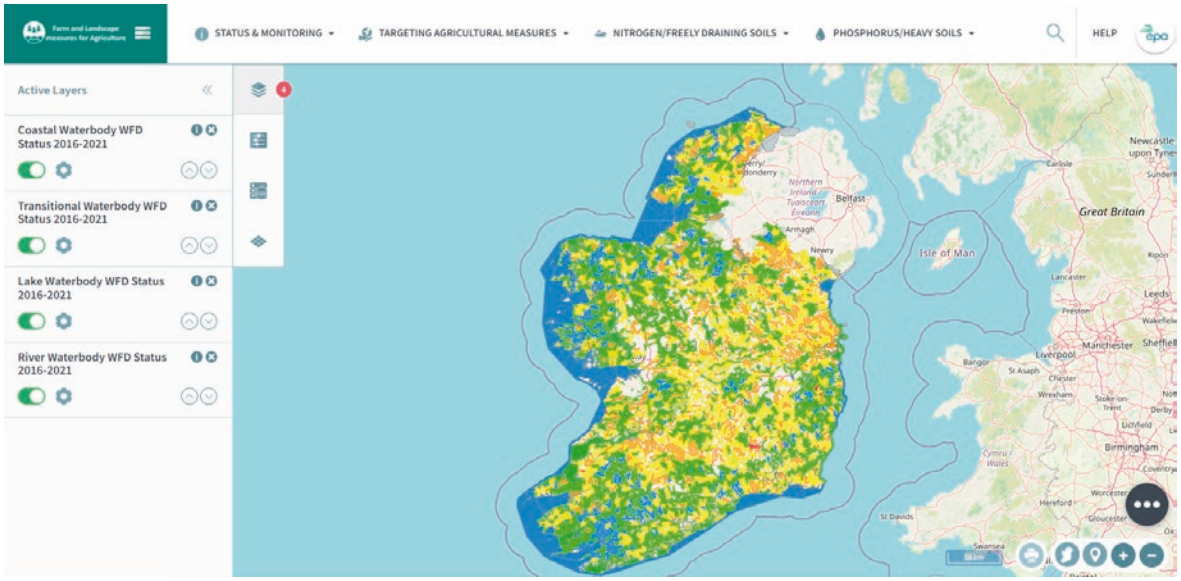
Monitoring

Monitoring is essential to assess whether the actions undertaken under the Stockholm Convention are effective to protect human health and the environment. Due to the potential serious risks, both to human health and the environment, posed by POPs, many of these chemicals are included in environmental monitoring programmes mainly related to water (both freshwater and marine environments), air and food. Some selected POPs monitoring programmes pertaining to the Irish environment are outlined in the following sections. As part of the development of the NIP we have identified that there is a need to further analyse and assess this data to deepen our understanding of POPs in Ireland, particularly about trends in the data, as well as to identify monitoring gaps, and develop systems to make this data more easily available.

Water (both freshwater and marine environment)

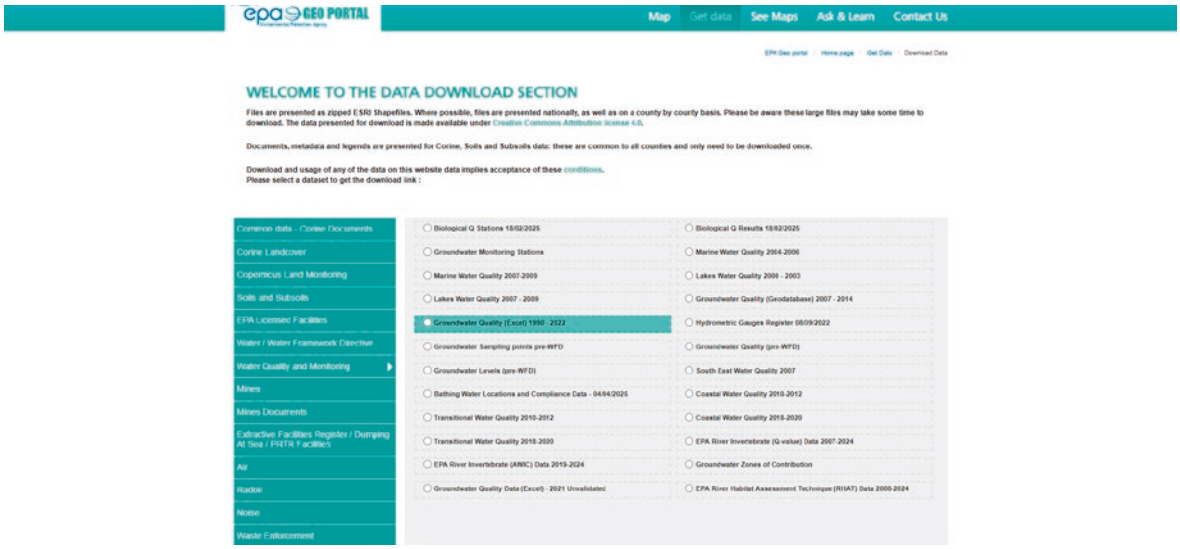
Under the Water Framework Directive (WFD) the water quality for all waterbodies in Ireland is monitored and assessed. This includes the monitoring of certain POPs chemicals including pesticides PCBs and PFAS. This data can be accessed using the Water Maps function on www.catchments.ie. The map filter can be used to switch between different waterbodies and all chemical monitoring points around Ireland. The data for the selected point can be exported to see a breakdown of the chemical results. The national multi-agency forum, NAECG (National Aquatic Environmental Chemistry Group) addresses POPs and pollutants primarily in the aquatic environment. This collaborative initiative established in 2018 looks at the review and monitoring of chemical substances of concern assessing the management of hazardous substances in Ireland.

Figure 11: The Water Map filter on Catchments.ie



The presence of POPs is also monitored in Groundwater across Ireland. This includes pesticides, PFAS, Furans, HCBD and recent data on the candidate POP LC-PFCA's. The monitoring data can be accessed through the EPAs Geoportal (https://gis.epa.ie/) in the 'Get data' section under Groundwater Quality.

Figure 12: The Geo Portal data download section.



The EPA publishes a report every three years that provides a detailed evaluation of the ecological health and chemical status of Ireland's rivers, lakes, canals, groundwater, estuaries and coastal waters. The EPA report on Water Quality in Ireland 2019-2024 found that all surface water bodies failed to achieve good chemical status in 2019-2024 when the assessment included what are known as ubiquitous substances, one of which is listed in the report as PBDE. Ubiquitous substances are found nearly everywhere in the environment and, they persist in the environment for many years after their use has ceased. The report finds that many of the failures were due to the presence of Poly Brominated Diphenyl Ethers (PBDEs) in fish, which were found at concentrations above environmental standards almost everywhere where they were monitored for.

The report also identified five water bodies with EQS exceedances due to detections of the POPs flame retardant Hexa-Bromo-Cyclo-DoDecane (HBCDD). Five exceedances of Heptachlor in biota and one exceedance of Dicofol in water were also reported.

The latest report on 'Water Quality in Ireland Report 2019-2024' covers the findings of the analysis and assessment from over 4,000 surface water bodies and 514 groundwater bodies (EPA, 2025). Chapter 5 of the report covers the Chemical Status of Surface Waters, and in that section, you will find details on POPs monitoring, with PBDE and PFAS detections highlighted.

The EPA report on Water Quality in Ireland 2019-2024 found that all surface water bodies failed to achieve good chemical status in 2019-2024 when the assessment included what are known as ubiquitous substances, one of which is listed in the report as PBDE. Ubiquitous substances are found nearly everywhere in the environment and, they persist in the environment for many years after their use has ceased. The report finds that many of the failures were due to the presence of Poly Brominated Diphenyl Ethers (PBDEs) in fish, which were found at concentrations above environmental standards almost everywhere where they were monitored for.

The reports also identified five water bodies with EQS exceedances due to detections of the POPs flame retardant Hexa-Bromo-Cyclo-DoDecane (HBCDD). A failure to achieve good chemical status requires relevant measures to be introduced for the substance driving the failure.

Two POPs PFAS are now monitored routinely through the Water Framework Directive (WFD) monitoring programme at surveillance sites across the country. This routine monitoring focuses on the most prevalent PFAS substances, Perfluorooctane Sulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA). Since monitoring began in 2019, information has been gathered on concentrations at approximately 150 surveillance sites across Ireland. The findings of the latest Water Quality in Ireland 2019-2024 report is that Perfluoro-octanyl Sulphonic Acid (PFOS) EQS exceedances were found in nine water bodies. . Rivers close to sites known to have PFAS contamination issues (Dublin and Cork airports) have PFOS concentrations in water above the EQS. The Nore and Suir estuaries also have PFOS concentrations in water above the EQS. The nine waterbodies identified as having EQS exceedances for PFOA were five river waterbodies (Boyne _010, Sluice_010, Owenboy (CORK)_030, Two Pot (Cork City)_010, and Tubbercurry_020) and four transitional water bodies (Barrow Suir Nore Estuary, New Ross Port, Upper Suir Estuary, and Upper Barrow Estuary).

Summary data on WFD Chemical Status is available from the EPA Geo Portal.[38] The portal allows the download of a summary file listing the substances, chemical status failures and waterbody types/ names. A failure to achieve good chemical status requires relevant measures to be introduced for the substance driving the failure. The Water Quality report highlights that for substances which drive failures due to historic activity or current activity further development of the risk-based approach at a substance level is required to identify where local (or potentially national) measures may need to be implemented.

Other PFAS substances, such as Perfluorooctanoic Acid (PFOA), have been detected regularly at elevated concentrations in rivers and estuaries. No EQS currently exists for PFOA. PFOS has not been detected in fish or shellfish at concentrations above the EQS.

The EPA report 'Extended Per- and Polyfluoroalkyl Substances (PFAS) monitoring at targeted inland surface water sites 2024'[39] details, an additional fourteen sampling sites which were monitored by the EPA for PFOS and PFOA as part of a targeted approach to monitoring for these substances. These sites were selected based on proximity to suspected PFAS sources or where PFAS were previously detected. For example, two such areas are Dublin airport and Cork airport where there have been PFAS detections linked to the use of firefighting foams. Assessments have been carried out at the airport by Dublin Airport Authority with details available their website[40]. Fingal County Council is the authority responsible for environmental regulation and monitoring here which includes a wide range of roles – for example, under the Waste Management Act and Water Pollution Act, as well as the Planning and Development Act. This additional PFAS monitoring was designed to enhance understanding of the extent of PFAS in Ireland's inland aquatic environment, as well as providing information on sites known to have PFAS sources nearby. These fourteen sites were monitored in 2023 and 2024 along with two additional sites which were added to this programme at the request of two local authorities, who were also interested in further understanding of areas impacted by PFAS sources.

38 EPA GEO PORTAL - Download Data. Go to the tab in the left column called Water/Water Framework Directive. The file is then called 'WFD National Summary 2019-2024'

39 Extended Per- and Polyfluoroalkyl Substances (PFAS) monitoring at targeted inland surface water sites 2024

40 PFAS information for Dublin Airport is available at Sustainability at Dublin Airport and Soil and Water Management | North Runway | Dublin Airport

The work completed previously under the Water Framework Directive monitoring, highlighted increased levels of PFAS detections in the River Brosna and Lough Owel compared to other locations across Ireland. To investigate this further a 'PFAS Monitoring Survey – Study of selected sites on the River Brosna and River Shannon 2021-2022' was completed and is available on the EPA website[41]. This study was conducted by the EPA to analyse a range of PFAS compounds in water and sediment samples. A total of four different sampling events across 15 sampling locations resulted in 120 water samples and 26 sediment samples (including quality control samples) being collected for analysis. The data showed detections of PFAS in four locations on the River Brosna and one detection in the River Shannon. The study found that the area investigated on the River Brosna just down from Mullingar is a potential hotspot for PFAS especially PFOA when compared to other results and this area required further investigation. There is now an ongoing detailed investigation by Westmeath County Council and LAWPRO (Local Authority Waters Programme) in relation to detections of PFAS near Mullingar.

Another EPA study covers the 'PFAS Analysis along River Lee and Cork Harbour, 2022-2023 Monitoring Report'.[42] The study covered the River Lee, Cork harbour and Estuary area to understand the levels and sources relating to PFAS in the area. It covers the analysis and assessment of various sample media (surface water and sediment samples). This study was undertaken across 15 sites resulting in 142 surface water samples and 39 sediment samples analysing 32 and 17 PFAS compounds respectively. Consistent detections for a range of PFAS compounds were reported within surface water samples at multiple locations. In sediment samples isolated detections of PFAS were also found. The local authority and LAWPRO have been provided with the data from these studies, as it is relevant to their work on water protection and catchment management. Further investigation is recommended at locations where PFAS was detected to understand the potential source of contamination and associated risks. Cork City Council has been overseeing investigations on PFAS detections at Cork Airport where initial findings detected PFOS and PFOA in three private drinking water wells adjacent to airport Site 3 (Cork Airport) fire training site. A full site risk assessment report is being developed with a view to monitoring progress towards required remediation. A 'do not consume' advisory was issued to the households involved. The study referred to above of 15 sites provides further knowledge around PFAS in surface water in the area that will be relevant to this oversight and catchments work by Cork City Council.

The EPA commissioned report on 'Monitoring for per- and poly-fluoroalkyl substances and brominated flame retardants at fire training sites'[43] was published in 2021 (AECOM, 2021). It covers the analysis of water, soil and vegetation for PFOS, PFOA and PBDEs at two airport, one local authority fire service and one industrial fire training site. The report is available on the EPA website This report was commissioned as a study to gain an understanding on the possible presence of PFAS and some BFRs in potential hot spot sites that had previous and/or recent use of PFAS containing Aqueous Fire Fighting Foams. A collection of soil, sediment and vegetation samples were analysed for PFAS and BFR whereas

41 PFAS Monitoring Survey. Study of selected sites on the River Brosna and River Shannon 2021-2022

42 2022-2023 Monitoring Report. Procurement and Processing of Environmental Samples for PFAS Analysis along River Lee and Cork Harbour

43 Monitoring for per- and poly-fluoroalkyl substances (PFAS) and brominated flame retardants (BFRs) at fire training sites | Environmental Protection Agency

site water systems were analysed for PFAS only. The report has highlighted the potential risks posed by use of PFAS containing foams, particularly at fire training sites. The report was shared with key regulatory bodies for EPA enforcement of industrial sites and drinking water, the relevant Chief Fire Officer at Fire Service Site, and Irish Water.

The EPA commissioned report on 'Persistent Organic Pollutants, Landfill Leachate Sampling Study' investigated landfill leachate for a range of POPs and other hazardous chemicals and to assess the disposal routes and management of the leachate (EPA, 2021). This 2021 report covers testing of investigated leachate from six landfills for a range of POPs and other hazardous chemicals. Samples taken included leachate, groundwater and surface water samples. While results highlighted a variety of hazardous chemicals found in leachate, PFAS was detected at all sites.

In the Marine environment certain POPs are monitored under *Descriptor 8* of the Marine Strategy Framework Directive (MSFD Directive 2008/56) and also under OSPAR Convention's Coordinated Environmental Monitoring Programme (CEMP). Most recently the 2024 MSFD Article 8,9, 10 report covers the assessment, and establishes Good Environmental status and Targets for Irish Waters and 2020 Article 11 report sets out the monitoring programme (DHLGH, 2024; DHLGH, 2021). OSPAR assessment outputs for hazardous substances are available on the interactive OHAT webpage[44] and are incorporated into the Quality Status Report 2023 assessments[45]. The 2023 report includes chapter 7 on "Preventing pollution to achieve clean seas" which covers a number of POPs focused indicators such as PCBs and PBDEs[46].

Ireland contributed to a wide scale target and suspect screening and pollutant risk assessment programme organised though OSPAR and in collaboration with the NORMAN research network titled 'Assessing the chemical burden of the North-East Atlantic ecosystem through targeted and untargeted HRMS-based approaches' (Gkotsis, *et al.*, 2025). The study screened 52 marine samples for environmentally relevant organic pollutants as well as additional chemicals which were prioritised based on their potential risks to the marine ecosystem.

Air

The EPA publishes the Air Quality in Ireland report annually, the most recent report published in 2025 covers data from 2024 (EPA, 2025). This report includes information on monitoring of dioxins in cow's milk. Dioxin levels recorded in the cow's milk monitoring have been found to be well below European legislative limits.

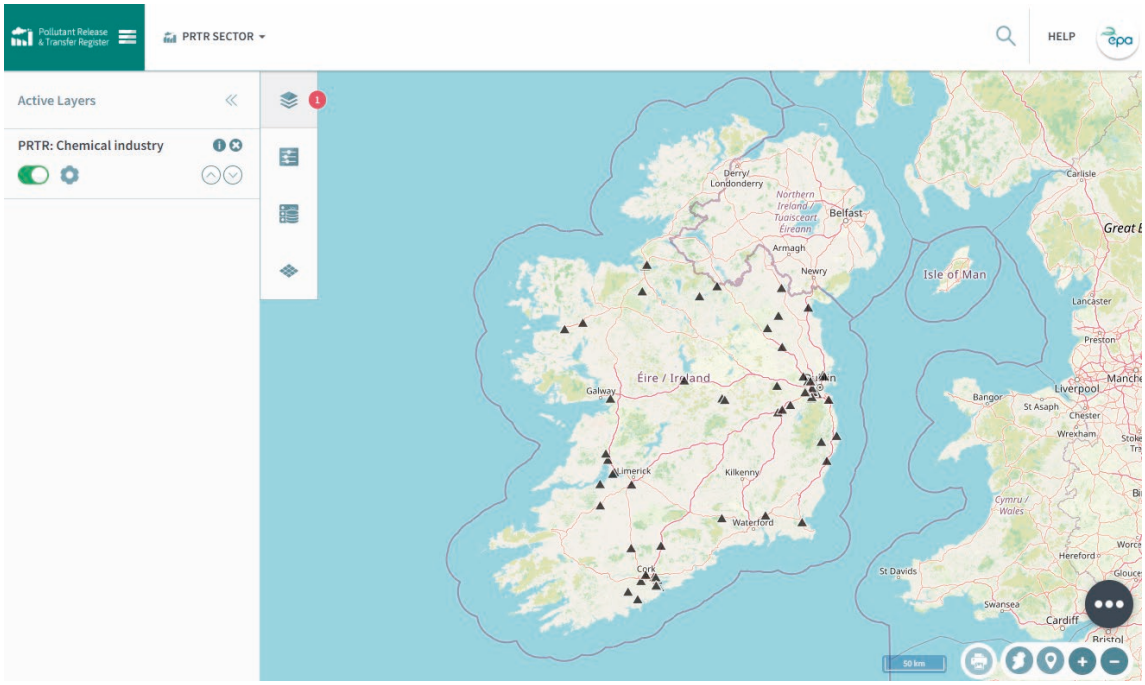
The EPA are responsible for the issuing and enforcement of licenses for specified industrial and agricultural activities. The Industrial Emissions license typically requires monitoring as some industrial activities can result in emissions to air, water and land. The monitoring activities are carried out at IED licensed sites depending on the specifications set out in the license and based on guidance issued by the EPA. Monitoring requirements can include POPs such as the measurement of Dioxin emissions to air. Further information on licensed sites and activities can be found on the EPA website through the license search function[47].

44 Home Page – ICES.OHAT
45 Quality Status Report 2023 – OSPAR-OAP (Prod)
46 All Indicator Assessments – OSPAR-OAP (Prod)
47 LEAP Online

The CLRTAP report from the EPA provides details on air pollutant emissions in Ireland that are reported to the secretariat of UNECE Convention on Long-Range Transboundary Air Pollution and to the European Union (EPA, 2024).

The Pollutant Release and Transfer Register (PRTR) is a searchable EPA database available to the public[48]. This database contains reports of annual mass emissions for 91 PRTR pollutants (some of which are POPs)[49] and waste transfers that are above specified thresholds. This database is maintained by the EPA and lists over 400 facilities who have reporting obligations under the regulations (E-PRTR Regulation (EC) No 166/2006).

Figure 13: Pollutant Release & Transfer Register map of chemical industry



Food

The FSAI in collaboration with the DAFM, the Marine Institute (MI) and the State Laboratory carry out monitoring of POPs (PCDDs and PCDFs, PCBs and PFAS) in a variety of food of animal origin and the Sea Fisheries Protection Agency (SFPA) and the Public Analyst Laboratory Dublin carry out monitoring of PFAS in fish as part of the annual National Contaminants Control Plan (NCCP), covering primarily food of animal origin at production level. As part of the NCCP, samples of ovine, bovine, porcine and avian fat, ovine, bovine, porcine and avian liver, fish, eggs, milk, cream, vegetable oil and infant formula are analysed for the above-mentioned POPs each year. Results since the last update of the NIP have shown that levels of PCDDs, PCDFs, PCBs and PFAS in Irish produce are generally low and well below the limits laid down for these POPs in Regulation (EU) 2023/915, as amended. Sampling and analysis are carried out in accordance with the requirements of Regulation (EU) 2017/644 and the CCPs (Critical Control Points) are developed and implemented in accordance with Regulations (EU) 2022/931 and 2022/932.

48 EPA Maps

49 The list of pollutants can be found in Regulation (EC) No. 166/2006

Regulation (EC) No 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin sets the highest level of a pesticide residue that is legally tolerated in or on food or feed when pesticides are applied correctly. This includes MRL values for several POPs.

The previous Commission Regulation (EC) No 1881/2006 of 19 December 2006 set maximum levels for certain contaminants in foodstuffs, including limits for dioxins and PCBS in various foodstuffs. This has been repealed by Regulation 2023/915 which includes maximum levels for certain POPs including Dioxins, PCBs and certain PFAS.

The Department of Agriculture, Food and the Marine (DAFM) carries out annual monitoring of pesticide residues detected in food on the Irish Market. This monitoring is reported on under EU Regulation (EC) No 396/2005. This testing includes most POP pesticides, PCBs and the POP Chlorpyrifos. Details of reports can be found on the EFSA website[50].

Soil, Sludge and Waste Water Monitoring

The EPA commissioned report 'Procurement and Processing of Environmental Samples for PFAS and BFR Analysis at Select Sites' was published in 2021 (AECOM, 2021). The study aimed to provide the EPA with an overview of the potential of presence of PFAS and certain BFRs in possible hot spot areas. These areas were associated with historical and/or recent use of PFAS containing aqueous film forming foam (AFFF). The screening criteria was exceeded at three sites in water and soil samples taken.

The EPA commissioned report on 'Monitoring for per- and poly-fluoroalkyl substances and brominated flame retardants at fire training sites' was published in 2021 (AECOM, 2021). This report was commissioned as a study to gain an understanding on the possible presence of PFAS and some BFRs in potential hot spot sites that had previous and/or recent use of PFAS containing Aqueous Fire Fighting Foams. A collection of soil, sediment and vegetation samples were analysed for PFAS and BFR. The report has highlighted the potential risks posed by use of PFAS containing foams, particularly at fire training sites. The report was shared with key regulatory bodies for EPA enforcement of industrial sites and drinking water, the relevant Chief Fire Officer at Fire Service Site, and Irish Water.

Monitoring of certain POPs chemicals in wastewater is undertaken including testing for HCH, HCB, HCBD and PCBs. But there is less information available on the monitoring of POPs in urban waste water sludges. The EPA commissioned study in 2017 covered the Determination of Concentrations of Certain Persistent Organic Pollutants and Other Specified Parameters in Sewage Sludge, and in 2013-2014 a further study covered Determination of Certain POPs and Additional Substances in Sewage Sludge (QED Engineering Ltd, 2017; URS, 2014). These studies were covered in the 2018 NIP. The Terrachem Project that is referred to above in the research section should add to the data and understanding of this area. The EPA State of the Environment Report 2024 covers landspreading in Chapter 14[51] on Environment Health and Wellbeing. It notes that sewage sludge in particular acts as a sink for persistent contaminants emanating from waste water, with levels of these contaminants determined by the influent received by the treatment facility from the surrounding catchment (EEA,

50 Publications | EFSA

51 State of the Environment Report – Chapter 14: Environment, Health and Wellbeing

2021). Effective management and treatment practices and robust regulation are therefore essential to minimise risks to animal and human health. The SOER states that a national assessment of sewage sludge in the agricultural setting is needed to gather evidence to inform Ireland's management and tracking systems for these materials in the future.

The Working Group for Sludges, Biosolids and other Organic Fertilisers recently prepared a report for the National Technical Implementation Group (NTIG)[52]. The group was established to review the management and oversight of sludges being applied to land. One recommendation of the report was to conduct a national assessment of the use of sewage sludge on agricultural land in the context of substances such as POPs and PFAS. The DCEE established a Working Group in January 2025 to examine and update the Codes of Practice for the use of biosolids in agriculture, including greater emphasis on chemicals that may be applied to land.

Waste

The EPA Research Report 434 published in 2023 on 'Persistent Organic Chemicals in the Irish Waste Stream' evaluated the feasibility of using hand-held X-ray fluorescence (XRF) spectrometers to measure bromine in waste articles to check compliance with limit values (Harrad, *et al.*, 2023). It also generated an extensive database on concentrations of POPs and related chemicals in waste plastic articles in Ireland. This permits assessment of whether recent bans on the use of some POPs has reduced their presence in Irish waste and establishes a baseline against which the success of possible future restrictions on other chemicals may be evaluated. Details are available on the project website.[53]

As per EU regulations, details of Stockpiles of PFOA and PCBs are currently captured in inventories managed by the EPA. These stockpiles are to be removed and disposed of appropriately. For further information on the stockpiles please refer to section 2.5.

2.8 Information exchange and stakeholder involvement

The POPs Forum is a regulatory stakeholder forum established by the EPA in 2022. The aim of the forum is to assist with implementation, coordination and knowledge exchange under the European Union (Persistent Organic Pollution) regulations.

The POPs Forum comprises of representatives from the competent authority and public authorities concerned listed in the POPs regulations together with other relevant public bodies, agencies and departments as may be required. Please refer to Table 3 for a list of representatives as per regulations and their roles in relation to POPs.

52 Report of the Sludges, Biosolids and other Organic Fertilisers Working Group

53 SAFER – University of Galway

3. MEASURES and ACTION PLAN FOR POPs

Updated POPs Implementation Plan for Ireland

3.1 Implementation Strategy

The Stockholm Convention sets out the measures to be taken by Parties to reduce or eliminate the release of POPs to the environment. It also includes several general obligations such as requirements around public awareness and education; monitoring; research; and reporting.

In the next six tables this updated NIP sets out the measure and key actions to be taken to meet these obligations.

3.2 Measures to reduce or eliminate releases from intentional production and use

Article 3 of the Stockholm Convention requires Parties to take legal and administrative measures necessary to *eliminate* the intentional production and use of POPs listed in Annex A of the Convention and to *restrict* the intentional production and use of POPs listed in Annex B. Of the two POPs listed in Annex B, PFOS is still permitted for certain uses under the EU POPs Regulation. However, Ireland does not avail of any of the exemptions for use of this substance; and DDT has been banned for use in Ireland since the 1980's and 1990's. Of the POPs listed in Annex A, most have never been manufactured in Ireland, therefore measures are focused on ensuring they are not used. These measures are further focused on the newer POPs as information indicates measures to prevent the use of older POPs have largely been effective. Of the POPs listed in Annex A specific exemptions exist for the use of PFOA and PCBs. The exemptions are for the specific uses and time limits set out in the EU POPs Regulation (see Sections on PFOA and PCBs for further detail).

Article 3 of the Convention also requires Parties to take legal and administrative measures necessary to eliminate or restrict/control the import and export of POPs. POPs shall only be imported for environmentally sound disposal, or for a use or purpose which is permitted in Ireland. POPs shall only be exported for environmentally sound disposal or to a Party which is permitted to use that chemical.

Article 3 and 4 of Regulation (EU) 2019/1021 specifies requirements on the control of manufacturing, placing on the market and use, and the listing of substances, plus any exemptions from control measures.

Table A lists the Measures to reduce or eliminate releases from intentional production and use (Article 3 Stockholm Convention), and the measures to eliminate or control import and export of POPs (Article 3 Stockholm Convention), that are covered by the updated POPs plan for Ireland.

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
A-1	Continue work on the phase out of the use of PFOA (the expiry of the specific exemption was on 3 Dec 2025)	PFOA	EPA	Manage and maintain the online PFOA notification system on the EPA's EDEN system.	2026
			EPA	Continue communications and targeted awareness raising with registered PFOA users, key industry sectors and stakeholders regarding current PFOA restrictions, reporting obligations and deadline for specific exemption.	2026
			EPA	Explore whether market surveillance sampling study is required to gather data on PFOA levels in portable fire extinguishers.	By end 2026
			Local Authorities	Ensure that the use of firefighting foam by public fire services is compliant with PFOA restrictions and reporting obligations.	2026
			All Public Authorities Concerned	Ensure use of PFOA containing portable fire extinguishers in use in respective public buildings/facilities are compliant with PFOA restrictions and reporting obligations, and with 03 Dec 2025 deadline.	2026
A-2	Continue work on the phase out of the use of remaining PCB containing equipment (closed applications). Deadline was 31 December 2025	PCBs	EPA	Manage the online PCB register on EPA's EDEN system.	2026
			EPA	Engage with registered PCB equipment holders	2025
A-3	Enforcement of non-compliant uses of PFOA and PCBs after expiry of specific exemptions	PFOA and PCBs	EPA and any other relevant public authority	Investigate, follow up and take appropriate enforcement action where use is found after expiry of specific exemption.	Ongoing where necessary
A-4	Enforcement of maximum levels for POPs in foodstuffs	Relevant POPs	DAFM, FSAI, HSE	Investigate, follow up and take appropriate enforcement action where exceedance of maximum levels is found.	Ongoing

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
A-5	Conduct Market Surveillance for POPs in articles	Relevant POPs	EPA and other market surveillance authorities as relevant	Monitor the EU Safety Gate: the EU rapid alert system for dangerous non-food products not compliant with the POPs Regulation. Investigate whether any non-compliant products notified are available to consumers on the Irish market through online checks and campaigns (including visits to retailers and distributors).	Ongoing, as and when new alerts are published
			EPA	Carry out national targeted campaigns for testing of products, ranging for example from electrical and electronic equipment to general household items and fabrics for selected POPs.	Ongoing up until 2028
			EPA	Participate in EU and European Chemicals Agency campaigns as they arise for product sampling and testing for compliance with POPs restricted chemicals.	As and when suitable campaigns arise
A-6	Prevent the use of POP pesticides	POP pesticides	DAFM	Ensure that POPs intended for use as pesticides are not marketed or used.	Annually
			DAFM and EPA	Cooperate with the EPA in the identification of any person who produces, places on the market or uses relevant substances containing POPs.	As required
A-7	Take measures to regulate with the aim to prevent the production and use of new pesticides or new industrial chemicals which exhibit the characteristics of persistent organic pollutants.	POP like substances	HSA, EPA and DAFM	Undertake compliance checks to ensure requirements associated with PBT's/vPvB listed on the candidate list, requirements associated with Annex XIV and any relevant authorisation issued and any relevant REACH restriction are adhered to.	Ongoing
			DAFM	Undertake remit under Regulation (EC) No 1107/2009 (plant protection products) and Regulation (EU) No 528/2012 (biocidal products) in relation to PBT substances.	Ongoing
A-8	Controls on POPs in medicines and veterinary products	Relevant POPS	HPRA	Carry out the administrative functions required for POPs used or intended for use in medicinal or veterinary applications.	As required
A-9	Control of import of POP pesticides	POP pesticides	DAFM and EPA, Customs and HSE (for Health Checks)	Carry out the administrative functions required under the EU Prior Informed Consent Regulation for POPs that are listed within that Regulation and the provision of relevant information to the EPA, as appropriate.	As required
A-10	Examine ways to strengthen controls on import of POPs in substances, mixtures and articles	Relevant POPs/ Relevant POP pesticides	Revenue, DAFM, EPA	Examine ways to strengthen controls on import of POPs in substances, mixtures and articles.	By end 2027

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
A-11	Control of exports of industrial chemicals	POPs listed in the PIC Regulation identified as Industrial Chemicals	HSA, Revenue	Carry out the administrative functions required under the EU Prior Informed Consent (PIC) Regulation for Industrial chemicals listed within that PIC Regulation and the provision of relevant information to the ECHA and the EU Commission, as appropriate.	Ongoing

3.3 Actions to reduce releases from unintentional production

Article 5 of the Convention requires Parties to take measures to reduce or eliminate (where feasible) releases of POPs from unintentional production. This relates to those POPs listed in Annex C. Parties are required to develop an Action Plan for unintentional POPs as part of its NIP. The Action Plan should be designed to identify, characterise and address releases of unintentional POPs using best available techniques and environmental practices. Article 6 of Regulation (EU) 2019/1021 specifies requirements for release reduction, minimisation and elimination.

Table B lists the Measures to reduce or eliminate releases from unintentional production (U-POPs) (Article 5 of the Stockholm Convention), that are covered by the updated POPs plan for Ireland.

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
B-1	Reduce/eliminate releases of U-POPs from air emissions	U-POPs	DCEE, Local Authorities, EPA	Carry out and implement the Strategic Framework Actions of the Clean Air Strategy as they relate to dioxins and furans.	As specified by timeframes in Strategy
			EPA	Manage the Solid Fuel Producer Register as required under the Air Pollution Act 1987 (Solid Fuels) Regulations 2022 (S.I. No. 529 of 2022).	Ongoing
			EPA, Local Authorities	Include conditions in waste and IED authorisations in relation to emissions of dioxins and furans where relevant (including promotion of BAT and BEP). Monitor and enforce licence conditions.	Ongoing
			Local Authorities	Enforce the Air Pollution Act 1987 (Solid Fuels) Regulations 2022 (S.I. No. 529 of 2022), in areas relevant to POPs.	Ongoing
			Local Authorities	Enforce the Waste Management (Prohibition of Waste Disposal by Burning) Regulations 2009, as amended.	Ongoing

3.4 Measures to reduce or eliminate releases from stockpiles and wastes

Article 6 of the Convention requires Parties to develop strategies for identifying stockpiles consisting of, or containing, POPs and to manage those stockpiles in a safe, efficient and environmentally sound manner. Stockpiles no longer permitted to be used are deemed waste and need to be managed appropriately. Article 5 of Regulation (EU) 2019/1021 specifies requirements that holders of stockpiles must follow, and management of notified stockpiles.

Article 6 of the Convention also requires Parties to develop strategies for identifying products and articles in use, and POP waste; and to ensure POP waste is handled, collected, transported and stored in an environmentally sound manner. The POP content of waste needs to be 'irreversibly destroyed or irreversibly transformed'. Recovery, recycling, reclamation, direct reuse etc. is not permitted. Waste should not be transported across international boundaries without taking into account international rules, standards and guidelines.

Article 7 of Regulation (EU) 2019/1021 specifies waste management requirements that must be followed for waste consisting of, containing or contaminated by substances that are listed as POPs. Article 6 of the Convention also mentions that Parties endeavour to develop strategies for identifying sites contaminated with POPs. If remediation is performed, it should be done in an environmentally sound manner. Article 9 of Regulation (EU) 2019/1021 also requires that when member states are preparing and updating their implementation plan, they exchange information on measures taken to identify and assess sites contaminated by POPs, as appropriate. (See section 2.5 above).

Table C lists the Measures to reduce or eliminate releases from stockpiles, wastes, and identify contaminated sites (Article 6 of the Stockholm Convention), that are covered by the updated POPs plan for Ireland.

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
C-1	Ensure PFOA stockpiles and remaining PCB containing equipment are managed in a safe, efficient, and environmentally sound manner	PFOA, PCBs	EPA	Manage PFOA and PCB registers on EPA's EDEN system.	Ongoing until the end of 2026
			EPA	Continue to engage with registered PFOA and PCB holders about obligations regarding appropriate waste management and disposal.	Ongoing until the end of 2026
			Local Authorities and Uisce Éireann	Ensure all PFOA stocks and remaining PCB containing equipment held by public fire services, and associated with water and wastewater infrastructure are appropriately managed, disposed of and reported to the EPA.	As soon as practicable and no later than 6 months after material becomes waste
			Local Authorities	Ensure any remaining stocks of PFOA containing firefighting foam held by public fire services are appropriately managed and disposed of as required by waste management legislation.	As soon as practicable and no later than 6 months after foam becomes waste
			Uisce Éireann	Ensure remaining holdings of PCB containing equipment have been removed from use and reported as such to the EPA via EDEN.	As soon as possible (deadline was 31 December 2025)
C-2	Ensure stockpiles of POP pesticides are managed in a safe, efficient, and environmentally sound manner	POP pesticides	DAFM, DCEE, EPA	Continue the farm hazardous waste collection programme as part of implementing recommendation 11 of the National Hazardous Waste Management Plan 2021-2027. Record data on quantities of POP pesticides collected and disposed of.	2024-2026

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
C-3	Implement measures to manage POPs waste	Relevant POPs	EPA, Local Authorities	Consider POPs in licensing/permitting process for waste activities where relevant, relating to waste acceptance criteria for segregation and disposal of POPs waste.	2026-2028
			EPA	Include action on POPs waste as part of the development of the new National Hazardous Waste Management Plan (NHWMP). This may include a survey of waste management industry, regulators, and relevant departments around awareness and knowledge of POPs waste and its management to determine requirement for further measures, guidance and to feed into the NHWMP (i.e. post-2027), and to ensure traceability of waste containing POPs to avoid re-entry to the market through recycling.	2026-2028
			EPA, Local Authorities	Share findings from research and studies on POPs waste for improving identification and segregation of POPs waste at waste facilities[54]. Including measures for HBCD-containing wastes around identification, segregation from other waste and appropriate waste management.	2026-2028
			EPA, Local Authorities	Enforce obligations around waste management for POPs at licenced/ permitted sites.	Ongoing
			EPA	Participate in the Forum for Exchange of Information on Enforcement established by Regulation (EC) No 1907/2006 ('REACH' Regulation) when dealing with waste-related issues.	Ongoing
C-4	Improve data collection on POPs waste	Relevant POPs	EPA, National Transfrontier Shipment (TFS) Office, Local Authorities	Review and examine ways to improve collection of POPs waste data, including export data.	By end 2026
C-5	Study to assess EC proposals for lower POP waste limit for dioxins for waste management of domestic ash	Dioxins	EPA, DCEE	Consider options on how to carry out a study on the levels of dioxins in domestic ash and biomass to understand impact on waste management of lowering POPs waste limit for dioxin.	2026

54 Including for example Persistent Organic Chemicals in the Irish Waste Stream – EPA Research Report No. 434 (EPA, 2023); Evaluation of Hand-held XRF for Screening Waste Articles for Exceedances of Limit Values for Brominated Flame Retardants – EPA Research Report No. 272 (EPA, 2019); Report for EPA: PCBs in Open Applications in Ireland SPCP-2018-02-1, L3#6 (Sweco, March 2021).

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
C-6	Disseminate UN Stockholm Convention Guidance on POPs Contaminated sites	All POPs	Local Authorities, EPA, relevant public authorities concerned and Departments	Monitor developments and share information on UN POPs contaminated sites and guidance, in the absence of specific contaminated legislation/policy.	Ongoing
C-7	Collate data on sites contaminated by POPs listed in Annex A, B or C of the Stockholm Convention	All POPs	Local Authorities, relevant public authorities concerned and Departments, EPA	Collate available information on sites contaminated by POPs for reporting to the Commission under Article 13 Monitoring of implementation of (EU) 2019/1021.	Annually
C-8	Use data from WFD and water pollution control activities to assist in identifying sites contaminated with POPs	All POPs	Local Authorities, LAWPRO, EPA, DHLGH	Include where relevant monitoring for POPs substances under the Water Framework Directive programmes and use the data to assist in identifying sites contaminated with POPs.	Ongoing
C-9	Collate information on PFOS, PFOA and PFHxS at fire training sites to assist in identifying sites contaminated with POPs	PFOS, PFOA and PFHxS	Local Authorities, EPA, National Directorate for Fire and Emergency Management	As part of WFD, water protection, and waste management activities, review and collate environmental data on PFOS, PFOA and PFHxS at fire training sites (airports and Local Authority fire stations) to identify sites contaminated with these POPs. Background information on risks is available in the study "Monitoring for per- and poly-fluoroalkyl substances (PFAS) and brominated flame retardants (BFRs) at fire training sites" (EPA, 2021) and other EPA and research monitoring projects.	2026
C-10	Collate information on the releases of POPs from other sources, including landfills, WTTPs and biosolids, to assist in identifying sites contaminated with POPs	All POPs	Local Authorities, EPA	As part of WFD, water protection, and waste management activities, review and collate environmental data on POPs at landfills (taking into consideration EPA research, studies, and monitoring data) to assess environmental pressures from POPs releases from landfills and leachate.	2026-2028
		All POPs	Uisce Éireann, EPA	Collate data from implementation of requirements of wastewater authorisations, and the recast UWW Treatment Directive, where they relate to environmental monitoring and assessment of substances that are designated as POPs.	2026-2028
		All POPs	DCEE and the Working Group on sludges, biosolids and organic manures (EPA, FSAI, DAFM, Local Authorities)	Include assessment of relevant POPs in the development of recommendations for the use and monitoring of sewage sludge and biosolids, and the updating of the existing Codes of Good Practice for the Use of Sewage Sludge in Agriculture.	2026

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
C-11	Collate information on the releases of POPs from potential industrial sources, to assist in identifying sites contaminated with POPs	All POPs, Including PFOS, PFOA and PFHxS	Local Authorities, EPA	Review and collate data on environmental monitoring for POPs around industrial sites that used POPs chemicals for manufacturing and processing, or for firefighting (PFOS, PFOA and PFHxA). Consider EPA research, nature and extent studies, and monitoring as sources of background information for this task.	2026-2027
C-12	Increase knowledge around POPs and their investigation at any EPA licensed industrial sites where POPs were used, and where contamination is detected	Relevant POPs	EPA	Consider relevant POPs as part of site investigations, monitoring, and surrenders. Where POPs contamination is detected, examine the applicability of remediation and treatment options proposed by licensees, as part of regulation and enforcement.	2026-2028

3.5 Public information, awareness and education

Article 10 of the Convention requires Parties to promote and facilitate public information and engagement, information, and training. Article 11 of Regulation (EU) 2019/1021 specifies requirements around awareness programmes, public information, and training.

Table D lists the Measures covering Public Information, Awareness and Education (Article 10 of the Stockholm Convention), that are covered by the updated POPs plan for Ireland.

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
D-1	Continue to make information on POPs available to the public and stakeholders	All POPs	EPA Relevant Public Authorities Concerned	Maintain and update www.pops.ie website with information related to POPs. Develop information and signposts to where POPs information can be found for areas within the remit of the Public Bodies Concerned.	Ongoing 2026-2028
D-2	Provide information on PFOS, PFOA and PFHxS monitoring in Drinking Water	PFOS, PFOA and PFHxS	HSE, EPA,	Prepare and publish HSE/EPA joint position paper on PFAS in Drinking Water.	2026-2028
D-3	Provide training on management of POPs waste	POPs relevant to waste	EPA, WERLAs, DCEE	Explore the need for training for relevant stakeholders on EPA 'Guidelines for the identification and proper management of hazardous fractions in construction and demolition waste'.	2026-2028
D-4	Provide training and raise awareness of POPs among Local Authority staff and other organisations	All POPs	DCEE and EPA in conjunction with LASNTG	Rollout the LASNTG training course for Local Authority staff and other organisations in waste, chemicals and environment roles.	2026-2028

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
D-5	Make data available on POPs monitoring	Relevant POPs	EPA	Continue to publish data on Water Framework Directive and other POPs monitoring via www.catchments.ie website	Ongoing
			Marine Institute	Continue to publish reports and data on POPs environmental and residue monitoring programmes.	Ongoing
			FSAI/DAFM	Continue to report data on POPs collected as part of the contaminants control plans.	Ongoing
D-6	Continue to publicise and raise awareness as part of Clean Air Strategy	U-POPs	Local Authorities, EPA, DCEE	Continue to advocate for proper disposal of waste and elimination of illegal backyard burning that may generate unintentional POPs such as dioxins and furans.	Ongoing

3.6 Research Development and Monitoring

Article 11 of the Convention covers research, development and monitoring. It encourages research, development, monitoring, and cooperation pertaining to POPs, including research on sources and releases, fate, and transport of POPs, and presence, levels and trends in humans and the environment, and their effects. It also has an international dimension and asks member states to support networks and organisations including aspects aimed at defining, conducting, assessing and financing research, data collection, monitoring and scientific and technical research capabilities. Several different monitoring programmes include POPs as described in Section 2.7 of this plan. Article 10 of Regulation (EU) 2019/1021 specifies some requirements around monitoring, with Article 11 of the EU regulation covering information exchange, awareness programmes and information sharing.

Table E lists the measures covering Monitoring (Article 11 of the Stockholm Convention) and lists the measures covering Research and Development (Article 11 of the Stockholm Convention), that is covered by the updated POPs plan for Ireland.

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
E-1	Monitor POPs in aquatic and marine environment	Relevant POPs	EPA, Local Authorities, Marine Institute	Monitor for relevant POPs as part of WFD monitoring programme and review when new/candidate POPs identified or added.	Ongoing
			EPA	Develop approach for trending of POPs that are Priority Substances in relevant environmental matrix. Identify substances and matrix, and timescale over which to trend.	2026-2028
			EPA	Develop risk assessment to identify sources, pathways, relevant environmental matrix and measures to support more targeted monitoring of POPs, including those that are Priority Substances covered under the WFD.	2026-2028
			DCEE, DHLGH, EPA, and relevant public bodies concerned	Consider new POPs that are not yet covered by WFD monitoring lists that could be present in aquatic and marine environment.	2026-2028
E-2	Monitor POPs in food, foodstuff and shellfish	Relevant POPs	DAFM, FSAI	Continue monitoring of primary food of non-animal origin for POPs pesticides as part of the National Pesticides Control Programme and monitoring of primary food of animal origin for industrial POPs as part of the National Contaminants Control Plan and review when new/candidate POPs identified or added.	Ongoing
			Marine Institute, FSAI	Continue monitoring of shellfish for the presence of relevant POPs and review when new/candidate POPs identified or added.	Ongoing
E-3	Monitor POPs in Drinking Water	PFOS, PFOA and PFHxS	Uisce Éireann	Monitoring of PFOS, PFOA and PFHxS (as part of wider PFAS monitoring) in public drinking water supplies as required under EU Drinking Water Regulations (SI No. 99/2023)	Commences 12 January 2026
E-4	Monitor POPs at licensed/permitted sites	Relevant POPs	EPA, Local Authorities	Monitor relevant POPs as required by licence/permit conditions, and where necessary where POPs risks are identified.	Ongoing
E-5	Monitor transboundary air emissions under CLRTAP	Relevant POPs	EPA	Explore synergies with research projects and wider atmospheric monitoring programmes to collect relevant data on POPs.	2026-2028
E-6	Monitor relevant POPs in air emissions	Dioxins, PCBs and POP-BDE's	EPA	Continue annual survey on dioxins, furans and other relevant POPs in cow's milk as a proxy to assess presence of these chemicals in air.	Annually

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
E-7	Monitor POPs in urban wastewater and sludges	Relevant POPs	Uisce Éireann	Review and implement requirements of recast UWW Treatment Directive as they relate to monitoring of chemicals that may also be POPs.	2026-2028
E-8	Monitor POPs in wildlife/biota	Relevant POPs	Relevant Public Authorities Concerned	Share any data and knowledge around monitoring of POPs in wildlife/ biota.	Ongoing
E-9	Support research into POPs where gaps in knowledge exist and to address emerging issues	All POPs	Relevant Public Authorities Concerned	Put forward proposals to research calls for EPA Research Funding Programme, and any other relevant research funding avenues where appropriate, to support work on POPs. Continue to support, promote and share knowledge from POPs research studies.	Ongoing
			EPA	Consider how research could assist projects related to POPs, including for example a project to review available POPs monitoring data to develop an overview of the status and trends of POPs in various environmental media.	2026-2028
E-11	Update inventories of releases of unintentionally produced POPs	U-POPs	EPA	Update 2016 inventory of releases of unintentionally produced POPs[55]. Include other relevant substances listed in the UNECE Persistent Organic Pollutants Protocol.	2027-2028

3.7 Information Exchange and Reporting

Article 9 of the Convention covers the exchange of information relevant to POPs and alternatives. Article 15 of the Convention requires Parties to report to the Stockholm Secretariat on the measures it has taken to implement the provisions of this Convention and on the effectiveness of such measures. Article 11 of Regulation (EU) 2019/1021 specifies requirements around information exchange. Article 13 of Regulation (EU) 2019/1021 specifies requirements monitoring of implementation.

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Table F lists the Measures covering Information Exchange and Reporting (Articles 9 and 15 of the Stockholm Convention), that is covered by the updated POPs plan for Ireland.

REF	MEASURE	Relevant POP(s)	LEAD ORGANISATION(S)	KEY ACTIONS	TIMEFRAME
F-1	Make relevant information available to policy and decision makers, and relevant bodies via participation in relevant International/EU/ National/internal working groups on POPs and exchange information with stakeholders	All POPs	DCEE, EPA	Carry out the role of National Focal Point for the Stockholm Convention and participate in meetings/activities of the Secretariat (including CoP and POPRC meetings), and act as lead Department for overall policy and legislation as it relates to POPs arising from Stockholm Convention and EU POPs Regulations. Participate in meetings/activities of the EU POPs Expert Group and any other relevant groups	Ongoing
			EPA	Carry out the role of Competent Authority under the Irish POPs Regs and participate in meetings/activities of the EU POPs Expert Group and any other relevant groups. Provide technical support and guidance to DCEE for overall policy and legislation as it relates to POPs.	Ongoing
			EPA, All Public Authorities Concerned and key stakeholders	Engage with National POPs Forum to share information, knowledge and new developments on POPs. Track progress with actions identified in this NIP.	Ongoing
			HSE, Uisce Éireann, EPA	Participate in HSE National Drinking Water Group (PFAS in Drinking Water Subgroup).	Ongoing
			DAFM, Uisce Éireann, EPA	Participate in National Pesticides in Drinking Water Group and exchange information with relevant stakeholders.	Ongoing
			EPA	Participate in Forum for Exchange of Information on Enforcement in accordance with Article 8 of EU POPs Regulation 2019/1021.	Ongoing
			EPA	Oversee the working group on the National Hazardous Waste Management Plan.	Ongoing
F-2	Deliver reporting requirements under Article 13 of the EU POPs Regulation and Article 15 of the UN Stockholm Convention	All POPs	Relevant Public Authorities Concerned	Provide relevant information and data to the EPA, including that resulting from monitoring, inspections, checks, investigations and research activities concerning POPs.	Annually
			Relevant Public Authorities Concerned	Examine ways to improve capturing and recording of relevant information and data for reporting purposes.	2026-2028
			EPA, DCEE	Compile and prepare reports for submission to ECHA/EU and UN Stockholm Convention.	Minimum every three years (EU Article 13 report) Every four years (UN Article 15 report)

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An Ghníomhaireacht um Chaomhnú Comhshaoil

Tá an GCC freagrach as an gcomhshaol a chosaint agus a fheabhsú, mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ar thionchar díobhálach na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

- Rialáil: Rialáil agus córais chomhlíonta comhshaoil éifeachtacha a chur i bhfeidhm, chun dea-thorthaí comhshaoil a bhaint amach agus díriú orthu siúd nach mbíonn ag cloí leo.
- Eolas: Sonraí, eolas agus measúnú ardchaighdeáin, spriocdhírithe agus tráthúil a chur ar fáil i leith an chomhshaoil chun bonn eolais a chur faoin gcinnteoireacht.
- Abhcóideacht: Ag obair le daoine eile ar son timpeallachta glaine, táirgiúla agus dea-chosanta agus ar son cleachtas inbhuanaithe i dtaobh an chomhshaoil.

I measc ár gcuid freagrachtaí tá:

CEADÚNÚ

- Gníomhaíochtaí tionscail, dramhaíola agus stórála peitril ar scála mór;
- Sceitheadh fuíolluisce uirbigh;
- Úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe;
- Foinsí radaíochta ianúcháin;
- Astaíochtaí gás ceaptha teasa ó thionscal agus ón eitlíocht trí Scéim an AE um Thrádáil Astaíochtaí.

FORFHEIDHMIÚ NÁISIÚNTA I LEITH CÚRSAÍ COMHSHAOIL

- Iniúchadh agus cigireacht ar shaoráidí a bhfuil ceadúnas acu ón GCC;
- Cur i bhfeidhm an dea-chleachtais a stiúradh i ngníomhaíochtaí agus i saoráidí rialáilte;
- Maoirseacht a dhéanamh ar fhreagrachtaí an údaráis áitiúil as cosaint an chomhshaoil;
- Caighdeán an uisce óil phoiblí a rialáil agus údaruithe um sceitheadh fuíolluisce uirbigh a fhorfheidhmiú
- Caighdeán an uisce óil phoiblí agus phríobháidigh a mheasúnú agus tuairisciú air;
- Comhordú a dhéanamh ar líonra d'eagraíochtaí seirbhíse poiblí chun tacú le gníomhú i gcoinne coireachta comhshaoil;
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

BAINISTÍOCHT DRAMHAÍOLA AGUS CEIMICEÁIN SA CHOMHSHAOL

- Rialacháin dramhaíola a chur i bhfeidhm agus a fhorfheidhmiú lena n-áirítear saincheisteanna forfheidhmithe náisiúnta;
- Staitisticí dramhaíola náisiúnta a ullmhú agus a fhoilsiú chomh maith leis an bPlean Náisiúnta um Bainistíocht Dramhaíola Guaisí;
- An Clár Náisiúnta um Chosc Dramhaíola a fhorbairt agus a chur i bhfeidhm;
- Reachtaíocht ar rialú ceimiceán sa timpeallacht a chur i bhfeidhm agus tuairisciú ar an reachtaíocht sin.

BAINISTÍOCHT UISCE

- Plé le struchtúir náisiúnta agus réigiúnacha rialachais agus oibriúcháin chun an Chreat-treoir Uisce a chur i bhfeidhm;
- Monatóireacht, measúnú agus tuairisciú a dhéanamh ar chaighdeán aibhneacha, lochanna, uiscí idirchreasa agus cósta, uiscí snámha agus screamhuisce chomh maith le tomhas ar leibhéil uisce agus sreabhadh abhann.

EOLAÍOCHT AERÁIDE & ATHRÚ AERÁIDE

- Fardail agus réamh-mheastacháin a fhoilsiú um astaíochtaí gás ceaptha teasa na hÉireann;
- Rúnaíocht a chur ar fáil don Chomhairle Chomhairleach ar Athrú Aeráide agus tacaíocht a thabhairt don Idirphlé Náisiúnta ar Ghníomhú ar son na hAeráide;
- Tacú le gníomhaíochtaí forbartha Náisiúnta, AE agus NA um Eolaíocht agus Beartas Aeráide.

MONATÓIREACHT AGUS MEASÚNÚ AR AN GCOMHSHAOL

- Córais náisiúnta um monatóireacht an chomhshaoil a cheapadh agus a chur i bhfeidhm: teicneolaíocht, bainistíocht sonraí, anailís agus réamhaisnéisiú;
- Tuairiscí ar Staid Thimpeallacht na hÉireann agus ar Tháscairí a chur ar fáil;
- Monatóireacht a dhéanamh ar chaighdeán an aeir agus Treoir an AE i leith Aeir Ghlain don Eoraip a chur i bhfeidhm chomh maith leis an gCoinbhinsiún ar Aerthruailliú Fadraoin Trasteorann, agus an Treoir i leith na Teorann Náisiúnta Astaíochtaí;
- Maoirseacht a dhéanamh ar chur i bhfeidhm na Treorach i leith Torainn Timpeallachta;
- Measúnú a dhéanamh ar thionchar pleananna agus clár beartaithe ar chomhshaol na hÉireann.

TAIGHDE AGUS FORBAIRT COMHSHAOIL

- Comhordú a dhéanamh ar ghníomhaíochtaí taighde comhshaoil agus iad a mhaoiniú chun brú a aithint, bonn eolais a chur faoin mbeartas agus réitigh a chur ar fáil;
- Comhoibriú le gníomhaíocht náisiúnta agus AE um thaighde comhshaoil.

COSAINT RAIDEOLAÍOCH

- Monatóireacht a dhéanamh ar leibhéil radaíochta agus nochtadh an phobail do radaíocht ianúcháin agus do réimsí leictreamaighnéadacha a mheas;
- 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 um chosaint ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

TREOIR, ARDÚ FEASACHTA AGUS FAISNÉIS INROCHTANA

- Tuairisciú, comhairle agus treoir neamhspleách, fianaise-bhunaithe a chur ar fáil don Rialtas, don tionscal agus don phobal ar ábhair maidir le cosaint comhshaoil agus raideolaíoch;
- An nasc idir sláinte agus folláine, an geilleagar agus timpeallacht ghlan a chur chun cinn;
- Feasacht comhshaoil a chur chun cinn lena n-áirítear tacú le hiompraíocht um éifeachtúlacht acmhainní agus aistriú aeráide;
- Tástáil radóin a chur chun cinn i dtithe agus in ionaid oibre agus feabhsúchán a mholadh áit is gá.

COMHPHÁIRTÍOCHT AGUS LÍONRÚ

Oibriú le gníomhaireachtaí idirnáisiúnta agus náisiúnta, údaráis réigiúnacha agus áitiúla, eagraíochtaí neamhrialtais, comhlachtaí ionadaíocha agus ranna rialtais chun cosaint chomhshaoil agus raideolaíoch a chur ar fáil, chomh maith le taighde, comhordú agus cinnteoireacht bunaithe ar an eolaíocht.

BAINISTÍOCHT AGUS STRUCHTÚR NA GNÍOMHAIREACHTA UM CHAOMHNÚ COMHSHAOIL

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

- An Oifig um Inbhunaitheacht i leith Cúrsaí Comhshaoil
- An Oifig Forfheidhmithe i leith Cúrsaí Comhshaoil
- An Oifig um Fhianaise agus Measúnú
- An Oifig um Chosaint ar Radaíocht agus Monatóireacht Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tugann coistí comhairleacha cabhair don Ghníomhaireacht agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

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