

Environmental Protection Agency
Annual Report and Accounts

2022

ENVIRONMENTAL PROTECTION AGENCY

Annual Report and Accounts, 2022

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The layout of this report has been structured and aligned to reflect the EPA Strategic Plan 2022–2026

Key Statistics – 2022 in Numbers

AUTHORISATIONS

110

environmental authorisations issued

61

authorisation amendments completed

3

decisions on end-of-waste criteria issued

122

by-product notifications processed

83

radiation authorisations and **587** technical amendments issued

ENFORCEMENT

214

urban wastewater and 104 drinking water site visits

1,582

visits to industrial, waste, dumping at sea and Volatile Organic Compounds facilities

10

District Court prosecutions completed

14

drinking water Directions issued to Uisce Éireann

77

inspections of radiological licensees

13

sites on the National Priority Sites for Enforcement

CIRCULAR ECONOMY

€597k

awarded to 7 enterprises under the Green Enterprise: Innovation for a Circular Economy funding calls

73%

of adults heard information on food waste

MONITORING

2,060

water bodies monitored for biological and chemical analysis

105

ambient air quality monitoring stations

528

samples analysed for radioactivity

INFORMATION

909,500

visits to www.epa.ie

137

information requests (79 AIE and 58 FOI)

82,000+

social media followers (some overlap between channels)

8,600+

environmental complaints reported

2,047

environmental queries from the public

409

EPA datasets uploaded to data.gov.ie (90,417 total views)

RESEARCH

28

Research Reports: 8 Climate, 7 Natural Environment, 7 Healthy Environment and 6 Green & Circular Economy

EMERGENCY PREPAREDNESS

1

National Nuclear Exercise involving 23 Government Departments and Agencies

5

international nuclear/radiological emergency exercises

RADON

500,000+

pageviews of radon related content



Our Purpose

To protect, improve and restore our environment through regulation, scientific knowledge and working with others



Our Vision

We live sustainably in a healthy environment that is valued and protected by all



Our Values & Behaviours



Professional

We hold ourselves to high standards in our interactions and work

- I take responsibility for my work and am accountable for my decisions
- I listen to others and respect diversity of views



Trustworthy

We act with integrity as an independent leader and advocate for our environment

- I base my decisions on the best available evidence and facts
- I am honest and transparent in my interactions with others



Customer & Stakeholder Focussed

We actively listen to and understand our customers and stakeholders to design and deliver excellent services

- I take account of our customers' and stakeholders' perspectives in everything I do
- I work to deliver public value and our vision



Collaborative

We work together and with others to protect our environment and health

- I work with others to deliver better outcomes
- I share my time, resources and knowledge to support my colleagues



Innovative

We innovate and adapt to deliver our vision and strategy

- I try new ideas to improve how I do my work, knowing that I won't always get it right
- I support and champion innovation to deliver on our vision

List of abbreviations

AIE	Access to Information on the Environment	JAI	Junior Achievement Ireland
AMR	Antimicrobial Resistance	JPI	Joint Programming Initiatives
API	Application Programming Interfaces	LAPN	Local Authority Prevention Network
ARC	Audit & Risk Committee	MI	Marine Institute
AQIH	Air Quality Index for Health	MoU	Memorandum of Understanding
BAT	Best Available Techniques	Mt CO₂eq	Million Tonnes Carbon Dioxide equivalent
B2C	Business to Consumer	MCP	Medium Combustion Plant
CAFÉ	Clean Air for Europe Directive	NDCA	National Dialogue on Climate Action
CAP	Common Agricultural Policy	NEC	National Emission Ceiling Directive
CCMA	County & City Managers Association	NIEA	Northern Ireland Environment Agency
CLRTAP	Convention on Long-Range Transboundary Air Pollution	NHEPA	Network of the Heads of Environment Protection Agencies
CNS	Convention on Nuclear Safety	NIECE	Network for Ireland's Environmental Compliance and Enforcement
DAFM	Department of Agriculture, Food and the Marine	NRCS	National Radon Control Strategy
DECC	Department of the Environment, Climate and Communications	NWPP	National Waste Prevention Programme
DHLGH	Department of Housing, Local Government and Heritage	ODS	Ozone depleting substances
EEA	European Environment Agency	OECD	Organisation for Economic Cooperation and Development
EIONET	European Environmental Information and Observation Network	OPW	Office of Public Works
EMA	European Medicines Agency	POP	Persistent Organic Pollutant
ERC	Executive Risk Committee	PCB	Polychlorinated Biphenyls
ESD	EU Effort Sharing Decision	PRI	Producer Responsibility Initiative
ESRI	Economic and Social Research Institute	PRTR	Pollutant Release and Transfer Register
EU ETS	European Union Emissions Trading System	RAL	Remedial Action List
F-gas	Fluorinated gas	RBMP	River Basin Management Plan
FOI	Freedom of Information	REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals regulations
GMOs	Genetically Modified Organisms	RoHS	Restriction of Hazardous Substances
HRB	Health Research Board	RMO	Roads Management Office
HSA	Health & Safety Authority	SEA	Strategic Environmental Assessment
HSE	Health Service Executive	SEAI	Sustainable Energy Authority of Ireland
ICNIRP	International Commission on Non-Ionising Radiation Protection	SLA	Service Level Agreement
ICT	Information & Communications Technology	TEG	Temporary Energy Generation
IED	Industrial Emissions Directive	UNECE	United Nations Economic Commission for Europe
IEN	Irish Environmental Network	UNFCCC	UN Framework Convention on Climate Change
INAB	Irish National Accreditation Board	WEEE	Waste Electrical and Electronic Equipment
IPC	Integrated Pollution Control	WFD	Water Framework Directive
IPCC	Intergovernmental Panel on Climate Change	WWTP	Waste Water Treatment Plant



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1. DIRECTOR GENERAL'S STATEMENT



The EPA's vision is that we live sustainably in a healthy environment that is valued and protected by all. I am encouraged to see evidence that people in Ireland place a particularly high value on having a clean and healthy environment. But we must do more than express our convictions and aspirations. We must back our values up with actions, at every level – from Government to households and individuals, and across each and every business, sector, and community.

In May, we published the EPA's [Strategic Plan 2022–2026](#) to achieve our vision and purpose – driving action on climate, promoting sustainable consumption and production, and working relentlessly to achieve a clean, healthy environment. To be an effective voice for Ireland's environment, we are committed to leading and working with others towards better outcomes across all environmental issues. Outlined below, and in detail within this report, is the progress made during 2022 toward meeting our vision and purpose.

1.1 Protected and Healthy Environment

Human health and wellbeing are closely linked to the state of our environment. The EPA strives to deliver cleaner water, cleaner air and to reduce exposure to harmful radiation, noise, chemicals and pathogens through regulation, enforcement, monitoring and assessment

Licensing and Enforcement

A primary function of the EPA is environmental regulation, including assessment, authorisation and enforcement of activities across a range of industries including waste, pharmaceutical, and the power sector. The EPA also manages Ireland's EU Emissions Trading Scheme.

The security of electricity supply was a key activity for the EPA throughout 2022 with significant engagement with the Department of Environment, Climate and Communications (DECC), the Commission for Regulation of Utilities, Eirgrid, and the power sector. Thirteen licence applications for data centres, and one application for a power plant, were received by the EPA in 2022.

During 2022 the Water Environment (Abstractions and Associated Impoundments) Bill was signed into law. This will be a significant new work area for the EPA once the Regulations are published. Also, in 2022 the European

Commission set out proposals for revised EU measures to address pollution from large industrial installations via an update to the Industrial Emission Directive.

Licence Enforcement

The EPA currently enforces over 800 industrial and waste licences. The EPA's enforcement teams used a risk-based approach to on-site inspections incorporating Remote Compliance Assessments at the start of 2022 but moved to more frequent in-person inspections as Covid-19 restrictions were lifted.

In its role as supervisor of local authority environmental activities, the EPA published the first [Local Authority performance report](#) in November 2022, under the new Local Authority Performance Framework. This new framework aims to better align performance scores to the delivery of environmental outcomes. The report, while demonstrating a high level of environmental enforcement by local authorities, pointed to several areas for further action including waste segregation, agricultural impact on water quality and the identification of air pollution hotspots.

The fifth Nitrates Action Programme highlighted the need to improve the number and effectiveness of local authority agricultural inspections. The EPA, in consultation with the relevant authorities, commenced the development of a Local Authority National Agricultural Inspection Programme for the period 2023 to 2025 with the aim of improved protection of water quality.

In 2022, the EPA placed a strategic focus on certain waste sector issues including: the aftercare and management of closed landfills; persistent odour problems at waste processing facilities; and infrastructural and operational requirements at anaerobic digestion facilities. EPA increased enforcement efforts aimed at ensuring compliance with waste acceptance criteria, ensuring a level playing field at soil recovery facilities and on national waste capacity. Regarding illegal waste activities, the EPA targeted high-value waste streams, working closely with An Garda Síochána and other regulators through multiagency concerted actions.

The EPA also regulates the use of ionising radiation in hospitals, education, industry, dental and veterinary practices through a system of authorisation and inspection. In August, the EPA published comprehensive [Guidance for undertakings](#) on how to comply with the recently updated Ionising Radiation Regulations.

Monitoring and Assessment

Air Quality

The EPA's National Ambient Air Quality Monitoring Programme provides real-time localised air quality information linked to public health advice. With the addition of eight new stations in 2022, real-time air quality monitoring has more than trebled in Ireland since implementation of the programme began at the end of 2017. The national network will be completed in early 2023.

The [annual air quality report](#), published in September 2022, highlighted two key air quality issues: particulate matter from solid fuel combustion and nitrogen dioxide from traffic emissions. The EPA LIFE Emerald project progressed toward delivering a national forecast map together with historical air quality maps.

Drinking water

While the [quality of drinking water in public supplies](#) remains high, delays in delivering public water improvements continues to put water quality and the public's health at risk. Progress has been good over the last number of years but in 2022 the number of 'at risk' supplies on the EPA's Remedial Action List increased

compared to the end of 2021. This underlines the fact that the treatment of many drinking water supplies is still not as robust as it needs to be to ensure the supply is resilient and safe into the future.

There were 80 Boil Water Notices (BWN) in effect during 2022 (up from 70 in 2021) which affected over 240,000 people. The increased prevalence of notices appears to be linked to an improved awareness of incidents and incident reporting by Uisce Éireann on foot of increased EPA enforcement activities. In the absence of robust treatment of drinking water supplies, BWNs are essential to protect public health when drinking water supplies are compromised.

Water Quality & Quantity

The EPA's [Water Quality in Ireland Report 2016-2021](#), published in October, highlighted the further decline of water quality in Ireland and that, at the current level of progress, Ireland will fail to meet the EU and national goal of restoring all waters to good or higher status by 2027. The assessment showed that just over half of surface waters (rivers, lakes, estuaries and coastal waters) are in satisfactory condition (that is, they are achieving good or high ecological status and can sustain healthy ecosystems for fish, insects and plants). There has been a significant deterioration in the number of estuaries and coastal waters in satisfactory condition, mostly along the southeast and southern seaboard. Urgent and targeted action is required to reduce nitrogen emissions from agriculture in these areas.

Bathing Water

The [Bathing Water report](#), published in May 2022, showed that 78% of bathing sites had excellent water quality while 97% meet the minimum standard. This on-going improvement in bathing water quality is attributed to improved management of bathing waters over many years, together with investment in the treatment of urban waste water.

Urban Waste Water

Treating waste water to make it clean and safe is essential to protect our environment and public health. Improvements in waste water treatment are evident, with the number of priority areas where treatment needs to improve reducing by almost 40% over the past five years. However, there is still a long way to go to bring all deficient treatment systems up to standard and provide for future needs. It will take a multi-billion-euro investment and, based on current investment levels, at least two decades to get all treatment systems up to standard.

Radiation

During 2022, the EPA monitored the evolving nuclear safety situation at nuclear facilities in Ukraine. In particular, the occupation of the Zaporizhzhya Nuclear Power Plant and events around the Chernobyl Exclusion Zone. The EPA liaised with relevant government departments and agencies and kept them updated on nuclear safety matters in Ukraine, including information coming to the EPA from international notification systems.

The EPA made significant progress in upgrading the National Radiation Monitoring Network during 2022 with new instrumentation deployed and additional monitoring sites added.

New [radon risk maps](#) for Ireland were published in May 2022 and are a significant milestone in the implementation of the National Radon Control Strategy. They update the national risk assessment for radon with 170,000 homes now predicted to have radon concentrations above the national reference level – an increase of 45,000 homes since the previous estimate made in 2002. EPA continues to recommend that all homeowners should test their homes for radon.

1.2 Climate Action

The EPA's role in addressing climate change challenges include preparing Ireland's greenhouse gas inventories and projections; regulating emissions from industrial sectors; supporting climate science research and supporting behavioural change and facilitating the National Dialogue on Climate Action.

[Provisional greenhouse gas inventory data for 2021](#), published in July 2022, showed an increase in emissions between 2020 and 2021. Total emissions were above 2019 levels – pre-Covid-19 restrictions. The data showed the scale of change needed within and across all sectors of Ireland's economy to make sustained progress in reversing this trend and to meet EU commitments and National carbon budget and sectoral ceiling targets.

The [Climate Change in the Irish Mind](#) project, published in November 2022, was undertaken by the EPA and the Yale University Program on Climate Change Communication to better understand Irish people's beliefs and attitudes with respect to climate change. The findings showed that

an overwhelming majority of the Irish public (85%) are either alarmed or concerned about climate change. They feel personally affected by it and want to see real change. Most people have high levels of awareness, are informed and understand the implications of a changing climate. They see that opportunities exist for jobs, innovation and wellbeing in taking climate action.

The EPA supported international climate science development and represented Ireland at two plenary meetings of the UN's Intergovernmental Panel on Climate Change (IPCC), during February and March 2022, in which major assessments on climate adaptation and mitigation were completed. These assessments were important inputs to the work of the UN Framework Convention on Climate Change (UNFCCC) meetings later in 2022. The EPA, as members of the national delegation and the EU Team, provided expert support for negotiations at these meetings including at the COP27.

The EPA funds and coordinates climate research in Ireland and published the fourth [annual report on climate research activity in Ireland](#) in 2022. In total, the EPA funded €7.4 million of climate-related research in 2022. A national assessment of climate research in Ireland (Ireland's Climate Change Assessment) is in preparation and will provide an opportunity to deliver a comprehensive, Ireland-focused, state-of-the-art understanding of climate change, the options to respond and the opportunities that may arise.

Greening the EPA

The EPA is committed to leading by example and incorporating good environmental management and practice in everyday activities. Improvements in energy performance, waste management, biodiversity and monitoring of EPA's greenhouse gas emissions were delivered in 2022. A 10% reduction in energy usage was delivered in 2022 compared to 2019 pre-Covid restrictions with a three-year rolling plan to deliver even more actions.

Total Carbon emissions, in 2021, arising from the EPA's activities were approximately half the base period (2016 – 2018) and were strongly influenced by reduced activity due to Covid-19 restrictions. An increase is expected in 2022 emissions as building and transport started to return to pre-pandemic levels of operation.

1.3 Sustainable Production and Consumption

In a circular economy, less raw material is used, products are designed for long-life, recyclability, shared, used for longer, repaired and reused. Material and products are recycled as much as possible and only the fraction that can't be recycled is disposed.

In 2022, the Circular Economy Act came into force putting the EPA's Circular Economy Programme on a statutory footing. Collaboration with Government, local government, industry, business and social enterprises is key to the continued success in driving the transition to a low-carbon circular economy.

The EPA has statutory responsibility to monitor, collate and validate data for waste streams generated by households, businesses and industry. The [National Waste Statistics Report for 2020](#), published in December 2022, highlighted worrying trends with Ireland generating too much waste. While Ireland is continuing to meet many of its current EU targets, those for 2025 and beyond are extremely challenging.

The regulatory provisions for assessing if materials can be declared as end-of-waste or as a by-product are helping to achieve a circular economy. Focus in 2022 shifted to developing national criteria for by-product (road planning and soil and stone) and end-of-waste (recycled aggregates).

Under the Climate Action Plans 2019 and 2021 the EPA is assigned lead responsibility to measure and report on Green Public Procurement activity by government departments on an annual basis. In April 2022, the [first report, for reference year 2020](#), was published showing that of the total reported spend only a relatively small percentage included green criteria.

1.4 Effective voice

As a trusted, independent and transparent source of environmental evidence and information the EPA strives to improve the environment through working with others and proactively influence policy, legislation and behavioural change.

Partnering and Networking

Under an Oversight Agreement the EPA works with and through the Department of Environment, Climate and Communications (DECC) and the Department of Housing, Local Government and Heritage (DHLGH) to support environmental policy and legislation. During 2022, the EPA

attended the Joint Oireachtas Committee on Housing, Local Government and Heritage on water quality and supply issues.

The EPA is actively engaged in several expert working groups or consultative committees led by government departments or facilitated by the EPA. For instance, there were 13 Networks and four Working Groups operating under the Network for Ireland's Environmental Compliance and Enforcement (NIECE) umbrella in 2022. In addition, the EPA made submissions to several consultations and other policy developments from a broad range of local, regional, national and international public service bodies.

I continued to serve as the Chairperson of the European Environment Agency management board. The EPA enlisted national experts to become involved in the European Environment Information and Observation Network (Eionet) which is Europe's leading network for policy-relevant environmental and climate knowledge.

The EPA has a responsibility to work with Irish and international partners to monitor developments relating to the safety of nuclear installations abroad and to keep relevant stakeholders informed of their implications for Ireland. In this regard during 2022, the EPA monitored the occupation of the Zaporizhzhya Nuclear Power Plant and events around the Chernobyl Exclusion Zone in Ukraine.

Research

The EPA delivers an environmental research programme that provides essential scientific support for environmental policy development, implementation and broader decision making. Scientific research and innovation are playing an increasingly important role in informing how governments and society can respond to the challenges posed by climate change and environmental degradation.

In 2022, €14.4 million in new research awards were made, addressing climate change and other emerging, complex environmental problems. The EPA continues to work in partnership with several organisations to co-fund environmental research. Significant progress was made in the development of strategic Knowledge Transfer activities in 2022, focused on transferring the scientific evidence generated by EPA-funded research into the policy system to better inform environmental policy development and implementation. An inaugural Environmental Science to Policy seminar hosted by the EPA was held in October 2022 to inform and support the development of the national evidence-for-policy agenda.

Communications and Outreach

The EPA's website is the principal communication channel for disseminating information to the public and stakeholders with over 909,500 visits during 2022. Innovation in the use of social media platforms during 2022 attracted and built new audiences to communicate the work of the EPA.

The EPA supported citizen science projects with partner organisations. The Clean Air Together project, with An Taisce's Environmental Education Unit, published results from over 1,000 residents across Dublin who measured Nitrogen Dioxide (NO₂) levels. The project moved to Cork City in 2022 with citizen scientists making measurements during October 2022.

The sixth 'The Story of Your Stuff' competition for second level schools took place in April 2022 with a student from St Columba's College in Dublin winning the overall prize with a topical video exploring the environmental lifecycle and impact of tissues.

Engaging with new and younger audiences, the EPA sponsored an environmental award at the BT Young Scientist competition and an Environmental Journalism Award for the National Student Media Awards. The EPA also worked in partnership with ECO-UNESCO and Junior Achievement Ireland to increase environmental awareness.

1.5 Culture of Excellence

Our resilience as an organisation was put to the test during the unprecedented Covid-19 pandemic and we responded to the challenge through innovation and the quick adoption of new ways of working. Learning from this unique period, we transitioned back to the workplace and developed a blended working policy. The policy combines both flexibility and connectedness, and balances blended working with in-person collaboration while supporting the continued delivery of the important work of the EPA.

In my role as Director General, I wish to acknowledge the hard work and commitment of the staff of the EPA throughout 2022 and to thank my fellow Directors for their dedication and support in delivering on our strategic goals.

I would like to extend my best wishes to the following EPA colleagues who retired during 2022, after many years of dedicated service: Albert Curran, Larry Kavanagh, Mary Darcy-Monahan, Bernard Browne, Margaret Desmond and Jonathan Derham. Finally, I would like to thank the Department of Environment, Climate and Communications and the Department of Housing, Local Government and Heritage for their continuing support.



Laura Burke

Director General, EPA





2

Protected and Healthy
Environment

We deliver a protected and healthy environment

We deliver cleaner water, cleaner air and have reduced exposure to harmful radiation, noise, chemicals and pathogens through our regulation, enforcement, monitoring and assessment

2. PROTECTED AND HEALTHY ENVIRONMENT

2.1 Licensing

The EPA's environmental licensing programme (ELP) has a wide remit and is responsible for a range of tasks relating to the authorisation of activities that could have an impact on the environment or on human health (Tables 1 and 2). This work includes implementing Ireland's obligations under various EU Directives by carrying out environmental assessments prior to granting or refusing authorisations. It incorporates Environmental Impact Assessment and Appropriate Assessment.

Authorisation of Activities

The Industrial Emissions Directive (IED) brought new and substantial changes to how industrial activities are regulated in Ireland. These changes will further ensure that licences include all measures necessary to achieve a high level of protection for the environment.

The IED requires the EPA to reconsider and, if necessary, update the conditions of its industrial licences within four years of new Best Available Techniques (BAT) conclusions being published.

By the end of 2022, 20 Commission Implementing Decisions (CIDs) on BAT conclusions had been published, the most recent being in the Ferrous Metals Processing, Common Waste Gas Management and Textile sectors as well as the Treatment Systems in the Chemical Sector. Work on implementing the requirements of all 20 CIDs is underway.

In addition, in April 2022, the European Commission adopted proposals for revised EU measures to address pollution from large industrial installations via an update to the IED. The main aims of this update are the full and consistent implementation of the IED across Member States, the promotion of cleaner technologies, supporting sustainable growth, broaden the Directives scope and enhance data transparency. The EPA worked closely with the Department of the Environment, Climate and Communications (DECC) in providing feedback on the updated Directive.

The security of electricity supply was a key activity for the EPA throughout 2022 with significant engagement with DECC, the Commission for Regulation of Utilities, Eirgrid, and the power sector. The EPA provided input to the drafting of legislative changes to facilitate fast tracking of energy related applications (mainly data centres and Temporary Energy Generation (TEG)) and have allocated resources to ensure efficiency in the processing of on-hand and expected energy related applications. Thirteen Industrial Emissions licence applications for data centres, and one application for a power plant, were received by the EPA during 2022.

There was also an increase in the number of emergency generators (new and existing) at data centres applying for registration on the Medium Combustion Plant (MCP) Register during 2022. At the end of 2022, 95 additional MCPs were registered – the majority of which were emergency generators at data centres.

In 2022, the EPA published an Application Prioritisation Scoring System which outlines the EPA's licence application prioritisation criteria for IED, IPC and Waste Licensed installations. These prioritisation criteria allow all stakeholders to clearly see the aspects of an activity which are considered during EPA's licensing work programme planning stage.

Environmental licensing and permitting decisions in 2022 are summarised in Table 1 below and included high profile facility expansions, some long-standing historical applications and greenfield investment activities in the waste, pharmachem and power sectors. In addition, one third of the new applications for IE/IPC or Waste licences received in 2022 were applications in relation to datacentres.

The EPA continues to regulate for a circular economy through End-of-Waste applications and By-Product notifications. Roll out of the on-line by-product notification system continued in 2022, including an interactive By-product Register with full public access to all documentation. In addition, progress continued in 2022 in

the areas of Historic Landfills and the issuing of Certificates of Authorisation for the remediation of old landfills operated by local authorities in the past.

Consents issued in respect of Genetically Modified Organisms (GMO) activities related predominantly to research facilities and presented low or negligible risk. In addition, Section 5(12) of the Dumping at Sea Act 1996, as amended, came into operation in respect of offshore installations on 1 April 2021 with the signing of the Dumping at Sea Act (Section 5(12)) (Commencement) Order 2021 (S.I. 92 of 2021). This enables the EPA to grant, or refuse to grant, a permit authorising the dumping of an offshore installation in accordance with the provisions of the Act. In 2022, the EPA received three applications for offshore installations. On 20 December 2022 the Water Environment (Abstractions and Associated Impoundments) Bill was signed into law. This will be a significant new regime for the EPA once the Regulations are published in 2023.

The EPA continued to support its web service to include electronic submission of licence applications and electronic processing and communication with all stakeholders. This facilitated a more efficient service for our customers and enables more efficient and accurate reporting of data to the European Commission.

Emissions Trading

The EPA is the enforcement and implementation authority for the European Union Emissions Trading System (EU ETS) in Ireland and as part of this system implements the EU rules for harmonised free allocation of carbon emission allowances.

In 2022, 105 stationary installations (industries, power stations and other high-energy users) were obliged to report their CO₂ emissions for the previous calendar year. All installations complied with reporting and surrender deadlines. The results from the installations covered by the ETS for 2021 showed that greenhouse gas emissions from Irish companies increased by 15% (2 million tonnes).

Greenhouse gas emissions from aviation increased by 11% compared to 2020, which reflects some recovery from the impact of Covid-19. These emissions arise from flights anywhere within the European Economic Area, where the aircraft operator has been assigned to Ireland for administration within the EU ETS. Fifteen aircraft operators were above the threshold for reporting to Ireland in 2021, according to Eurocontrol data.

The EPA acts (along with Department of Transport and the Irish Aviation Authority) as Competent Authority for the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). The CORSIA reporting deadline was

31 August 2022 where each Member State was required to submit total annual CO₂ aggregated for all attributed Aircraft Operators. The EPA performed the necessary checks and collated the aggregated report before passing to the Department of Transport for submission to the International Civil Aviation Organisation (ICAO) via the CORSIA Central Registry.

The list of installations entitled to some free allocation of carbon allowances in the current allocation period (the National Allocation Table 2021-2025) was approved by the Commission on 29 June 2021. Since production levels, and therefore CO₂ emission levels, can vary from year to year the rules for Phase IV (2021-2030) are designed to reduce over-allocation in the event of changes to the activity levels as calculated in the baseline and to increase allocation where there are significant increases in the activity level. Operators are required to submit annually a verified activity level changes report to the EPA. For each year, the EPA needs to assess all verified activity level changes reports for the 67 incumbent operators listed in the National Allocation Table and consider if an adjustment should be made to that year's allocation. All adjustments are notified to the Commission for approval. Thirty-five such reports were forwarded in 2022.

The auctioning of ETS allowances takes place on a common platform (European Energy Exchange – EEX) shared among 25 Member States of the EU. The EPA tracks auctioning of Ireland's quota of allowances each week and checks that the correct revenue is received by the Central Bank.

The Union Registry is used as the compliance tool for regulated installations and operators under the EU ETS. These operators, both Stationary and Aviation, are legally obliged to open an account on the Union Registry to fulfil their compliance obligations in relation to carbon emissions. EPA continued to exercise a high level of scrutiny in relation to the eligibility to open registry accounts and to maintain access to them as well as any implications from EU Sanctions Lists. The Irish domain of the Union Registry, managed by the EPA, had 480 users at the end of 2022.

The Union Registry also contains the registry for the EU's Effort Sharing Decision (ESD). The ESD regulates binding emission targets for all Member States for emissions not included in the EU ETS in 2013-2020, such as transport, building heating, agriculture and waste management. The EPA, as National Administrator, balanced Ireland's emissions for 2019 against our target for that year during 2022 using some of the flexibilities available under the ESD. Further information is available on the EU Commission website.

The EPA takes an active role in EU Climate Change Expert Groups and Task Forces which are vital to ensure the uniform application of the ETS Directive and supporting legislation.

Table 1. Environmental Licensing Programme (licensing activities 2022)

Licence type	Total applications received 2022	Total objections received 2022	Total Proposed Decisions issued 2022	Total Final Decisions issued 2022	Total Decisions issued 2022
IED/IPC Licences (includes IE Waste)	38	14	32	32	32
Waste Licences	0	1	1	4	4
Waste Water Licences	17	N/A	N/A	5	5
Waste Water Certificates of Authorisation	3	N/A	N/A	0	0
GMO Permits (Contained use)	25	N/A	N/A	26	26
GMO Permits (Deliberate release)	1	N/A	N/A	1	1
Historic Landfill Certificates	10	1	3	4	4
Dumping at Sea Permits	3	N/A	N/A	2	2
Certificates of Registration (Waste)	34	N/A	N/A	29	29
Volatile Organic Compound (VOC) Permits	3	N/A	3	3	3
Greenhouse gas permits	42	N/A	N/A	5	5
Total	176	16	39	111	111

N/A, not applicable.

Table 2. Environmental Licensing Programme (other regulatory activities 2022)

Tasks	Total tasks assessed 2022
Article 11 requests	66
IE/IPC Amendments	44
IE/IPC Amendments (EPA initiated)	16
Waste Amendments	2
Waste Water Treatment Plant (WWTP) Amendments	15
Article 27 notifications (by-product)	122
Article 28 Applications (end of waste)	3
Transfers	7
Air Pollution Appeals	4
Planning correspondences examined	65
Medium Combustion Plants registered	95
Total	439

Radiation Protection Authorisations

The system in place for radiation protection authorisations allows for two forms of authorisation: registration and licensing. Registration is a simpler and less administratively onerous form of authorisation, appropriate for practices that are less complex in nature and have been demonstrated to be relatively safe. Licensing applies to higher risk practices. Authorisation fees are reflective of the level of risk associated with the types of practices being carried out and therefore the level of regulatory oversight required.

Table 3. New Radiation protection authorisations, 2022

Licences	Registrations	Licence Amendments	Closed Licences
10	73	464	33

2.2 Enforcement

Industrial and Waste Licence enforcement



Figure 1. EPA Enforcement Principles

The EPA prioritises enforcement effort on sites which present the highest risk to the environment based on the type of activity that is licensed, the location of the activity (i.e. proximity to people or protected areas) and the enforcement history of the site (i.e. whether the site has a history of non-compliance). During 2022, the EPA focused on key priority issues of management of waste at waste management facilities, unauthorised extraction of peat and where licensed activities were having an impact on water quality.

The EPA licensed and regulated 859 industrial and waste facilities during 2022. The EPA’s objective is to ensure that operators carry on their activities in accordance with their licences. These objectives are advanced through a combination of promoting compliance, guidance and assistance, monitoring compliance, inspections and sampling, and taking enforcement actions where necessary. The EPA’s enforcement approach is underpinned by the principles published in its [Compliance and Enforcement Policy](#) and set out in Figure 1 below. Table 4 includes the number of inspections carried out on industrial and waste licensed activities during 2022.

The National Priority Sites List is used to target EPA’s enforcement effort at the poorest performing sites to drive improvements in environmental compliance. The list ranks industrial and waste sites in order of priority for enforcement, based on factors such as: complaints (Table 5), incidents, compliance investigations and non-compliances with the licence. This list was published quarterly with 13 licensed sites included on the list at least once during 2022, the majority of which were in the food and drink or waste sectors. The EPA’s enforcement activities are summarised in the infographic in Figure 2.

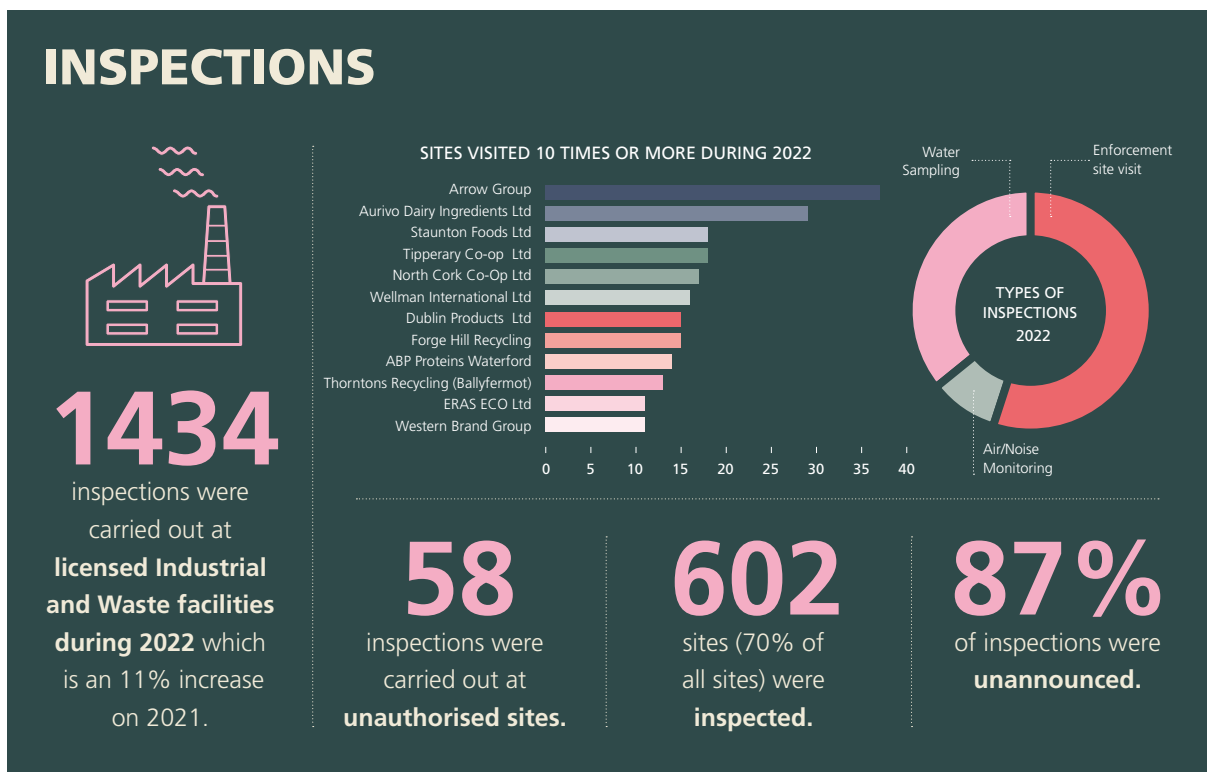


Figure 2. Summary of EPA Industrial and Waste Licence enforcement activities

Table 4. Number of inspections by sector undertaken in 2022.

Activity	Number of inspections
Industrial and Waste Licences	1,434
Urban Waste Water Discharge Licences	214
Drinking water treatment plants	104
Dumping at Sea Permits	8
Volatile Organic Compound Permits	6
Market surveillance – chemicals	164
ODS and F-gas	66

Table 5. Number of complaints received in 2022 and number of facilities the subject of those complaints by sector.

Activity	Number of complaints	Number of facilities the subject of those complaints
Industrial and Waste Licences	1,357	106
Urban Waste water	199	55
Drinking water	41	17
ODS and F-gas	0	N/A
Total complaints	1,597	

Water & Waste Water

Drinking Water

The number of people served by public water supplies on the EPA’s Remedial Action List (RAL) is now 481,309 people (58 supplies) compared to 374,633 people (52 supplies) at the end of 2021. While many supplies have been removed from the RAL a greater number have been added. These were primarily added due to Trihalomethanes (THM) exceedances or inadequate treatment for Cryptosporidium.

During 2022, the EPA completed 104 drinking water audits and issued 14 Directions to Uisce Éireann (UÉ) compared to 9 Directions in 2021. Ten of these Directions were for supplies with persistent THM failures.

There were 80 Boil Water Notices (BWN) in effect during 2022 affecting over 240,000 people, up from 70 in 2021 (Table 6). The increased prevalence of notices appears to be linked to an improved awareness of incidents and incident reporting by UÉ on foot of increased EPA enforcement activities. While the EPA does not want to see BWNs, they

are essential to protect public health when drinking water supplies are compromised. There were over 8,700 people affected by 10 water restrictions during 2022 - compared to 26 in 2021 affecting over 17,000 people, which is a welcomed improvement.

The EPA is concerned about the slow progress by UÉ in the removal of lead connections in the public network. In 2022, UÉ replaced over 10,000 lead connections, bringing the total number of replacements to 51,600 out of approximately 180,000. At this rate, Irish Water is highly unlikely to meet its commitment to remove all public-side lead pipework by 2026.

Table 6. Boil Water Notices and Water Restrictions

Advisory Notices issued by Irish Water	2021	2022
Boil Water Notices	70 notices affecting 265,898 people	80 notices affecting 240,000 people
Water Restrictions	26 Notices affecting 17,954 people.	10 Notices affecting 8,700 people.

There were 40 Pesticides exceedances notified across 18 water supplies in 2022, compared with 48 Pesticide exceedances notified across 31 water supplies for 2021. Uisce Éireann in conjunction with other stakeholders are primarily looking at a catchment-based approach to resolve these pesticide breaches.

The European Commission’s infringement proceedings against Ireland on Trihalomethanes (THM) in drinking water has been submitted to the European Court of Justice. The Commission case states that Ireland failed to take the measures necessary to ensure THM compliance in 31 public water supplies and 13 private group water schemes. The EPA has supported the Department of Housing, Local Government and Heritage (DHLGH) in providing updates on THM compliance as part of its submissions to the Commission.

The number of supplies on the RAL for THM exceedances is 23, up from 19 at the end of 2021. The EPA will continue to target THM compliance as part of their enforcement activities.

Municipal Waste Water Discharges

During 2022, the EPA completed 214 waste water site inspections focusing on plant performance, compliance monitoring of discharges and responding to complaints and incidents.

The EPA published the [Urban Waste Water Treatment in 2021](#) report identifying the priority issues that must be addressed to protect our environment from the harmful effects of waste water discharges.

The Report highlighted the following improvements:

- ▲ A reduction in the number of priority areas from 148 in 2017 to 91 in 2022 (Figure 3).
- ▲ Shannon and Cork city plants met the Directive treatment standards for the first time in 2021.

- ▲ Castletownbere and Cobh in County Cork were connected to treatment plants in 2021 bringing an end to the discharge of raw sewage from these areas.

Despite these improvements, the EPA remains concerned about repeated delays and uncertainty in Uisce Éireann’s (UÉ) delivery of critical improvements. UÉ has no clear action plan and timeframe to improve discharges from 27 of the 38 priority areas where waste water is a significant pressure on water bodies.

It will take many years and a multi-billion-euro investment to get all treatment systems up to standard. As all the problems cannot be dealt with in the short term, the available resources must be directed where they are most needed and will bring the greatest benefits.

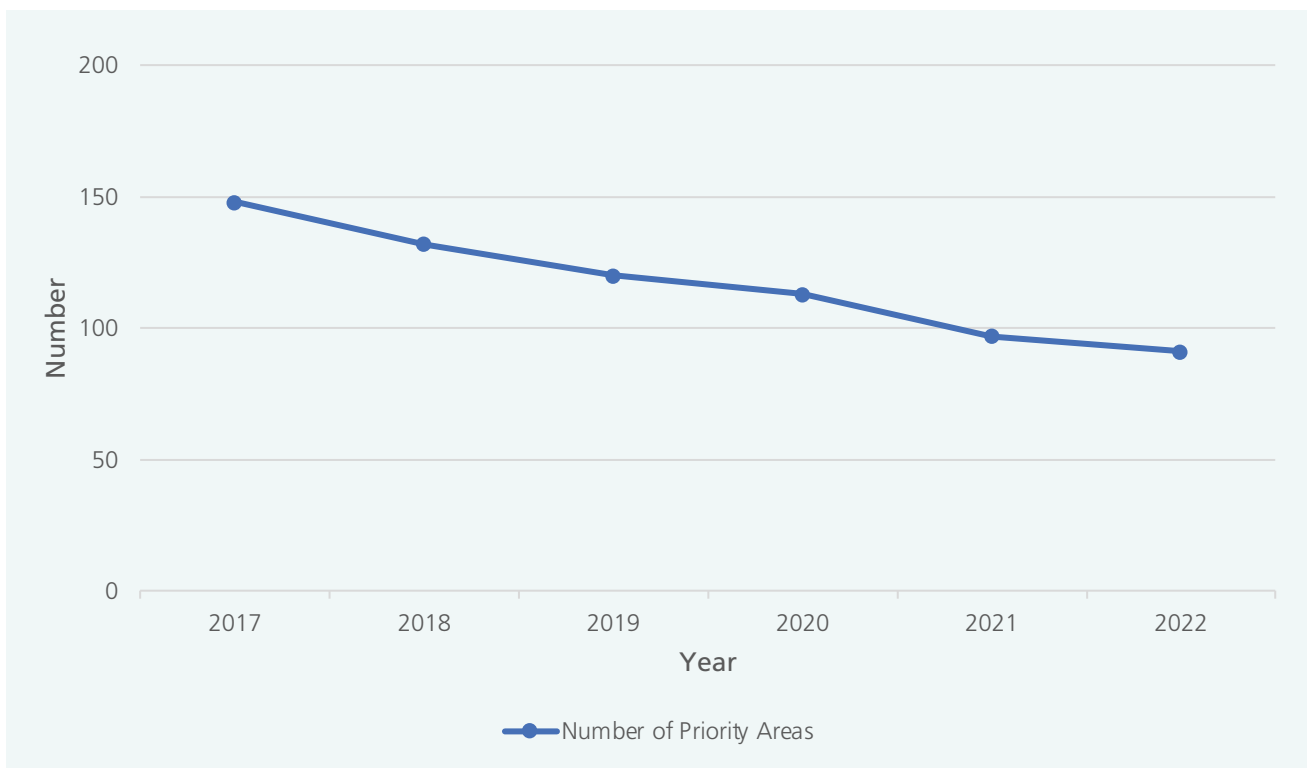


Figure 3. Reduction in the number of priority areas since 2017

Domestic Waste Water Treatment Systems (septic tanks)

The EPA published the [Domestic Waste Water Treatment System \(DWWTS\) Inspections 2021](#) report in 2022. The report highlights the following:

- ▲ 53% of systems failed inspection.
- ▲ Three-quarters of systems failing inspection since 2013 have been fixed but failure to resolve older cases remains a concern.

The failure to resolve older advisory notices is an increasing concern. Figure 4 illustrates that the number of DWWTS failures open more than two years has accumulated year-on-year to 533 at the end of 2021 and these need to be brought to resolution by the relevant local authorities.

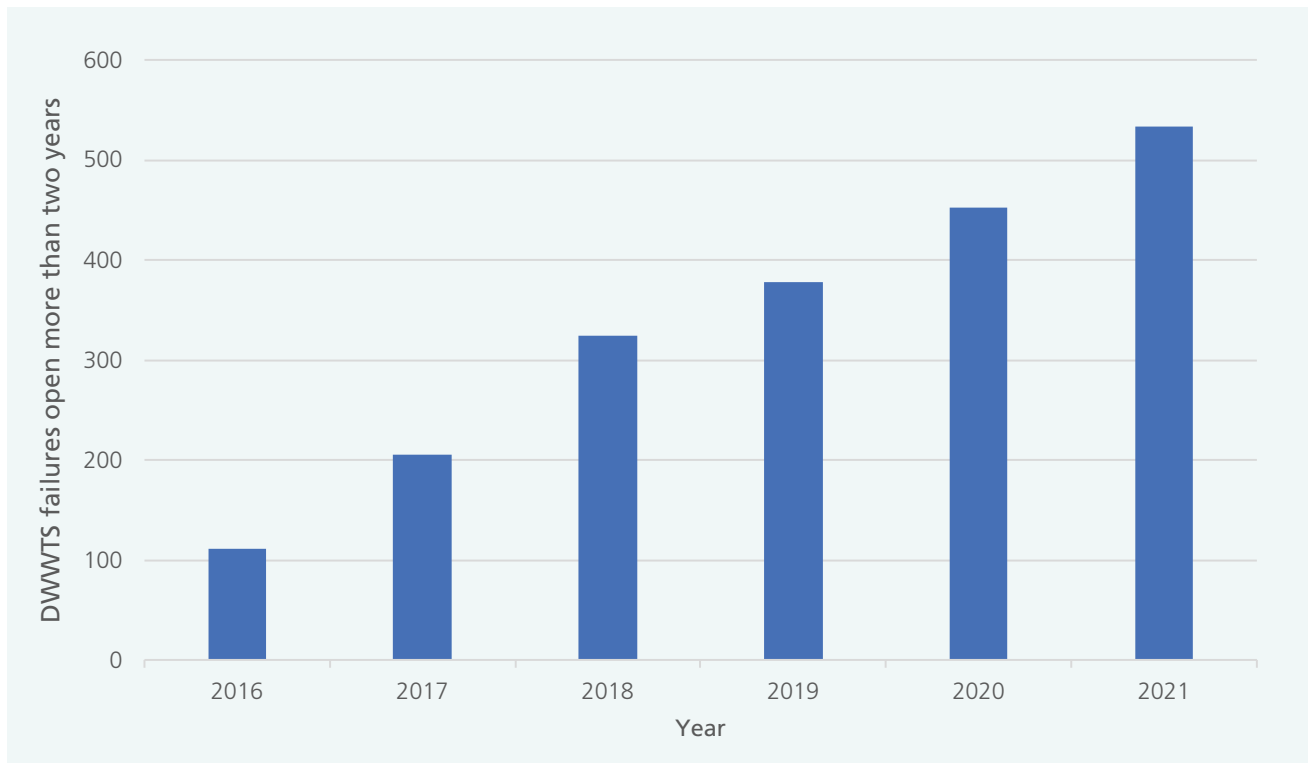


Figure 4. Domestic Waste Water Treatment System failures open more than two years at the end of each year, 2016 to 2021



Preventing Environmental Damage

Financial Provision for Environmental Liabilities

Priority Industrial and Waste licensees need to put in place and maintain sufficient financial provision so that they can pay for remediation or aftercare of their site, and for any potential clean-up that may be required following an accident or incident. During 2022, the amounts of Financial Provision secured by the EPA exceeded €1 billion (Figure 5) for the first time.

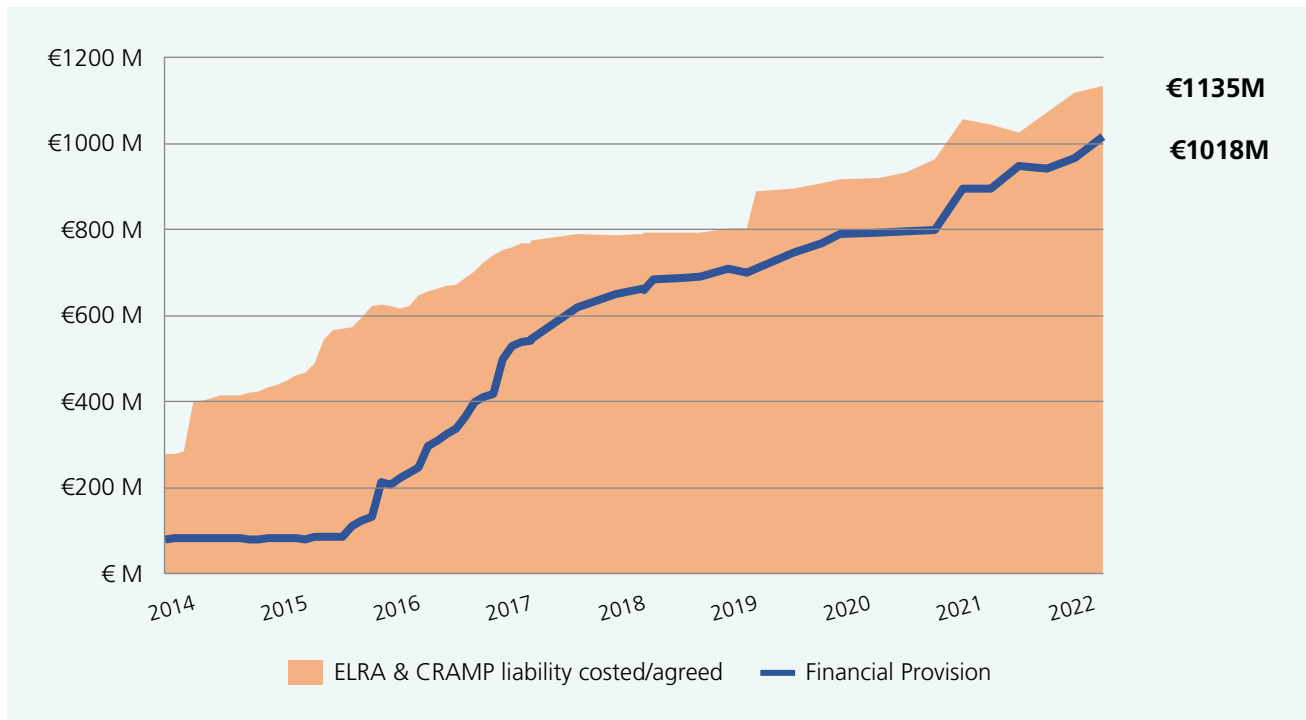


Figure 5. Financial Provision for Priority Sites

Market Surveillance and Chemicals in the Environment

Market Surveillance (including solid fuel regulations)

The revised Solid Fuel Regulations came into effect in October 2022 which required the EPA to maintain a fuel register of producers who produce, treat or import solid fuel. A new Irish Standard for Solid Fuels to cover the extended range of fuel types was published in December 2022 which will support the implementation of the regulations going forward.

Chemicals in the Environment

The EPA has a regulatory remit for several areas covering hazardous substances in the environment and products. This includes chemicals such as Persistent Organic Pollutants (POPs) and some substances evaluated under the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regime.

A key focus during 2022 was the tracking and registration of stockpiles of PFOA (Perfluorooctanoic acid) containing fire-fighting foams. PFOA is a restricted substance under the UN Stockholm Convention and the EU Persistent

Organic Pollutants regulations. The use of these substances in firefighting foams is permitted under strict conditions but foams containing PFOA cannot be used for training. A total ban on the use of PFOA in firefighting foams will take effect in July 2025. Stockpiles of foams containing PFOA must be reported to the EPA. The EPA established the National Persistent Organic Pollutants Forum in late 2022, covering stakeholders that work on the POPs regulations, with the objective to support implementation of Ireland's obligations under the Stockholm Convention and EU POPs Regulation. The forum will also support the EPA in preparing a revised National Implementation Plan and tracking implementation of the existing plan.

Market surveillance of chemicals in products centred on participation in the EU integrated REACH REF-10 Project. This project was delivered in collaboration with the Health and Safety Authority (HSA) and the Competition and Consumer Protection Commission. The EPA had samples of exercise equipment and accessories procured and tested for substances restricted under the POPs and REACH Regulations. While no non-compliances were detected

for the environmental standards, a small number of non-compliances for chemicals covered under the remit of the HSA were found. The EPA worked with the HSA on the follow-up of these non-compliances as well as reporting to the European Commission through the new harmonised reporting systems.

The EU Safety Gate rapid alert system notifies where products that do not comply with limits on certain hazardous substances have been identified in the EU. The EPA organised over 100 inspections in premises to check if dangerous equipment notified via the Safety Gate system were available on the Irish market. None of the products were observed to be stocked or have been distributed by the inspected operators.

Producer Responsibility

The EPA has enforcement responsibilities under the Waste Electrical and Electronic Equipment (WEEE), Batteries, Tyres and Single Use Plastics Regulations. Enforcement efforts

are focussed on non-compliant producers. Producers are companies that either manufacture or import electronic products, batteries, tyres or Single Use Plastics (SUP) and make them available for sale for the first time in Ireland.

Audits of Business to Business (B2B) producers focussed on producers who are reporting zero take back of WEEE. Business to Customer (B2C) enforcement focussed on distance seller websites, retail sectors with low WEEE take-back. There was also engagement with the e-cigarette/vape sector. The EPA participated in the new working group on enforcement of the SUP regulations.

The EPA also focussed on the management of B2B WEEE at EPA-licensed facilities. A circular letter was issued to 848 licensed facilities advising on management of their B2B WEEE. The EPA engaged with 55 second-hand car importers to enforce their obligations under the tyres and batteries regulations.

Table 7. Summary statistics on the 2020 producer responsibility enforcement campaigns

Task	Total number of activities
Business to Business Producer WEEE Waste Management Plans reviewed	287
Business to Business Producer WEEE Waste Management Reports reviewed	778
Business to Business Electrical and Electronic Equipment (EEE) Producer Audits	60
Business to Consumer EEE/Battery Distance-seller website inspections	80
Retail inspections in sectors with historical low take back of WEEE	40
Advisory letters issued to EPA-licensed facilities to advise on management of B2B WEEE	848
Advisory letters issued to representative bodies of the e-cigarette/vape unit sector	2
Guidance/Communication emails issued to B2B producers	5
Tyre Producer Inspections	30
Non-compliances under tyres regulations issued to car importers	55

Ozone-depleting Substances and Fluorinated Greenhouse Gases

The EPA issued 97 Prior Annual Notifications authorising ODS & F-Gas service technicians to carry waste ODS & F-Gas.

During 2022, the EPA ran an enforcement campaign focusing on leak checking and management of ODS and F-Gas while also raising awareness of F-Gas and ODS regulatory requirements.

On 30 June 2022, the EPA successfully prosecuted ESB Networks DAC regarding Sulphur hexafluoride (SF6) leaks from electrical switchgear adjacent to Moneypoint electricity generating station. This prosecution is the first taken under these regulations in Ireland and supports awareness campaigns currently in place by the EPA.

Radiation Protection Inspections

The EPA carries out an annual programme of radiation protection inspections to assess compliance with legislation and authorisation conditions. These inspections allow the EPA to assess the standard of radiation protection at sites, to identify common or emerging issues across sites and to promote a strong radiation protection culture.

During 2022, radiation protection inspections were undertaken in several sectors (Table 8) including eight security surveys carried out with the assistance of An Garda Síochána National Crime Prevention Unit.

Table 8. Radiation protection licensee categories and inspections undertaken during 2022

Licensee sector	Number of completed inspections
Hospital and medical facilities	24
Industrial and commercial	30
Security	8
Other licensees (Education & research, transport & distribution, vets, dentists, service companies)	15
Total	77

The focus of inspections for 2022 included the implementation of the new Ionising Radiation Regulations and associated EPA guidance (particularly the requirements on radiation protection training, risk assessments, and worker categorisation), and operational radiation protection in interventional radiology, cardiology and industrial radiography. A compliance survey of the veterinary sector was also conducted.

While significant improvement was noted in risk assessments, issues with the implementation of identified control measures and radiation safety procedures were observed in all sectors. Radiation safety training remains an issue across all sectors. In the medical sector challenges in relation to the implementation of Radiation Protection Officer arrangements, including inadequate resourcing was noted.

A compliance survey of 56 vets (34 licensed and 22 registered) was conducted to get baseline data and an overall picture of compliance within the veterinary sector. Issues identified will inform the targeted enforcement and engagement with the sector in 2023.



During 2022, 31 reportable incidents and 10 reportable doses were notified to the EPA. The most significant incident was the theft of a nuclear moisture density gauge (see photograph below) which resulted in the activation of our local incidents plan. The incident was covered in local and national media and the gauge was successfully recovered four weeks after the theft.



Local Authority Statutory Performance

Local authorities play a vital role in the protection of our environment and are responsible for enforcing much of our environmental protection legislation. The EPA's Local Authority Performance Framework is crucial to ensuring a consistent national approach to the enforcement of environmental standards. The EPA completed the first assessment using the revised Local Authority Performance Framework, which assesses the effectiveness of inspection activities in targeting key environmental issues. The assessment is based on 20 priorities and measures how local authority actions deliver environmental outcomes such as better segregation of household and commercial waste, cleaner air through controls on solid fuel sales and minimising risks to water quality from farming activities. Most importantly, there is an emphasis on assessing the follow-up and closure of issues detected so that real environmental improvements are achieved.

The key findings in the EPA's 2021 "Focus on Local Authority Environmental Enforcement Performance Report" include.

- Our water quality is in decline with just over half of surface waters (rivers, lakes, estuaries and coastal waters) in satisfactory condition. Agriculture is one of the sectors that is impacting on our water quality and local authorities should target inspections in waterbodies where agricultural measures are required to prevent nutrients including nitrogen and phosphorus from leaking into our waterways. The proper use of fertilisers and the correct management of slurry will benefit both the farmer and the environment.

- Air and noise enforcement continue to have the lowest level of dedicated resources within local authorities. Better targeting and coordination of resources in this area is necessary to protect public health.
- The scale of waste and litter enforcement carried out by local authorities is significant. However, the range of waste priorities to be addressed is broad and few local authorities managed to cover the full scope in 2021. In particular, there is a need for increased enforcement efforts to improve segregation of domestic, commercial, construction and demolition waste in order to improve reuse and recycling of materials.

Prosecutions

A long-standing case relating to an investigation undertaken by the EPA for offences during the period 2006-2008, was heard during a four-week trial in October/November 2022 at The Criminal Courts of Justice. A Director of Nephin Trading Limited was found guilty on all three charges by the jury. Sentencing is due to take place in 2023.

The EPA succeeded in obtaining a High Court injunction requiring Harte Peat Limited to cease the extraction of peat in bog lands in Co. Westmeath. The decision of the high court to cease the extraction of peat was appealed and the matter was heard in the Court of Appeal at the end of 2022. A judgment on the appeal is expected in 2023. In the meantime, the injunction remains in place.

Ten prosecutions were concluded in the District Court during 2022, resulting in six convictions with two licensees given the benefit of the Probation Act and a further two struck out on payment of charitable donations. The Courts imposed fines of €14,650 and total costs of €111,103 awarded to the EPA.



Industrial-scale peat harvesting

2.3 Monitoring and Assessment

Air Quality

The EPA manages and operates the National Ambient Air Quality Monitoring Network (Figure 6), in collaboration with local authorities and other bodies. Data from the network was made available to the public during 2022 through the EPA website and reported in compliance with the requirements of the EU Clean Air for Europe Directive (CAFE) and 4th Daughter Directive. Data is assessed against European legal limit values and the revised (2021) World Health Organization (WHO) guideline values.

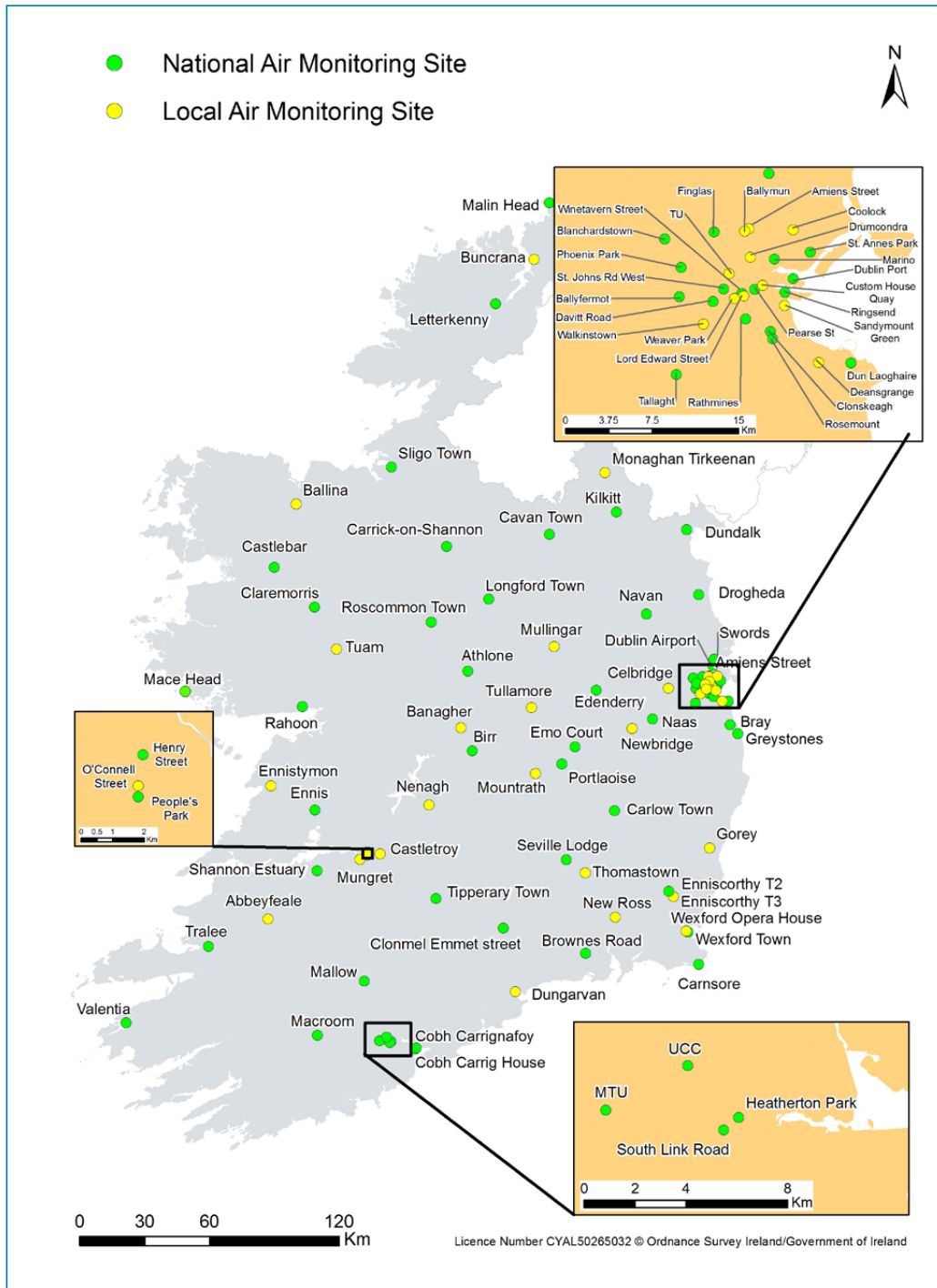


Figure 6. National Ambient Air Quality Monitoring Network

During 2022 the network was further expanded with the addition of eight new monitoring stations compared to 29 in 2017.

In September, the EPA published [Air Quality in Ireland 2021](#) in an updated, readily accessible online format. The report concluded that, while air quality in Ireland is generally good and compares favourably with many of our European neighbours, there are concerning localised issues which lead to poor air quality. While Ireland met EU legal air quality limits, it did not meet the health-based World Health Organization (WHO) air quality guidelines for several pollutants including: particulate matter (PM), nitrogen dioxide (NO₂), sulphur dioxide (SO₂) and ozone (O₃) due to the burning of solid fuel in our towns and villages and traffic in our cities.

Air quality impacts people’s health and there are an estimated 1,300 premature deaths in Ireland due to air pollution. Research carried out by the Health Service Executive (HSE) in conjunction with the EPA has shown the clear link between increased admissions to Dublin hospitals and poor or very poor status of the Air Quality Index for Health. Levels of particulate matter (fine particles) in air is of growing concern. Levels of this pollutant are particularly high during the winter months as shown in Figure 7, when people’s use of solid fuels such as coal, peat and wet wood negatively impacts air quality – especially in small towns and villages. Any movement along the spectrum of home heating choices and solid fuel choices towards cleaner modes (Figure 8) will have a subsequent improvement on air quality. Similarly, the health impact from transport emissions can be mitigated by making the right transport choices.

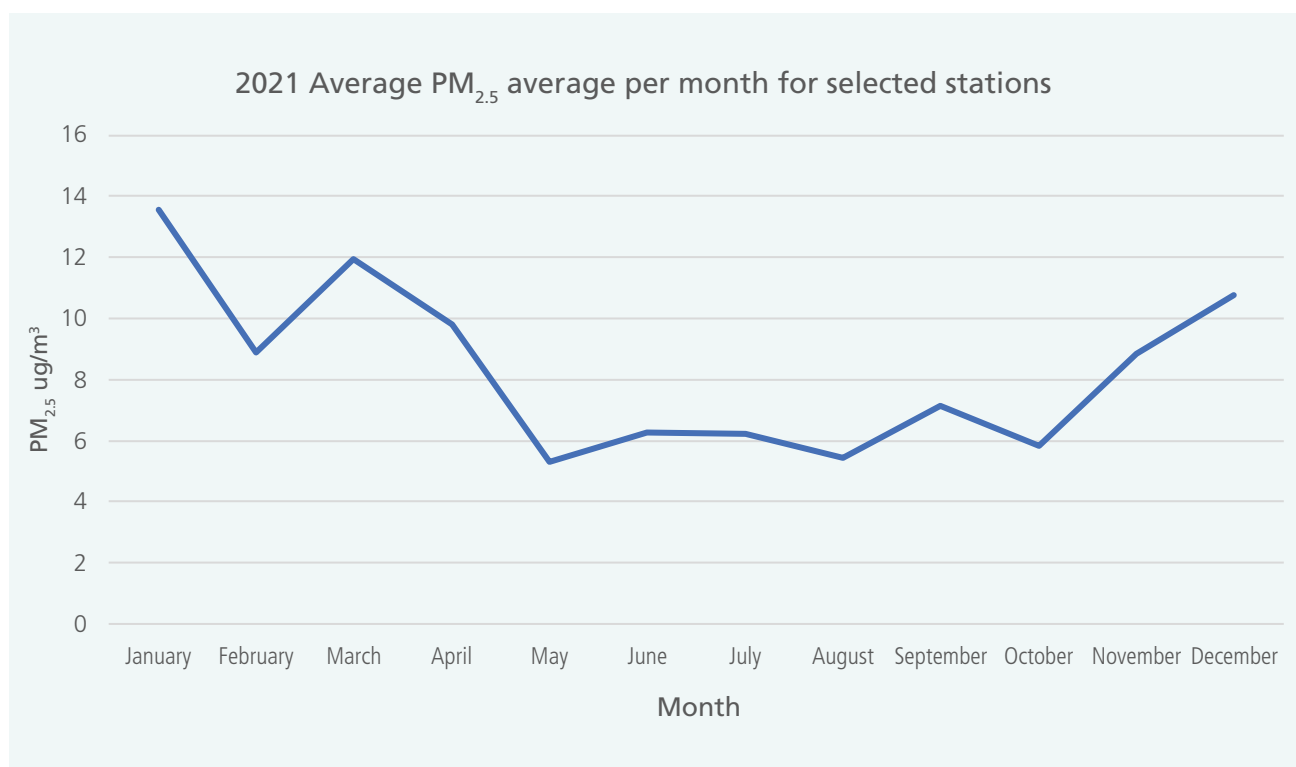


Figure 7. Average PM2.5 per month for selected stations

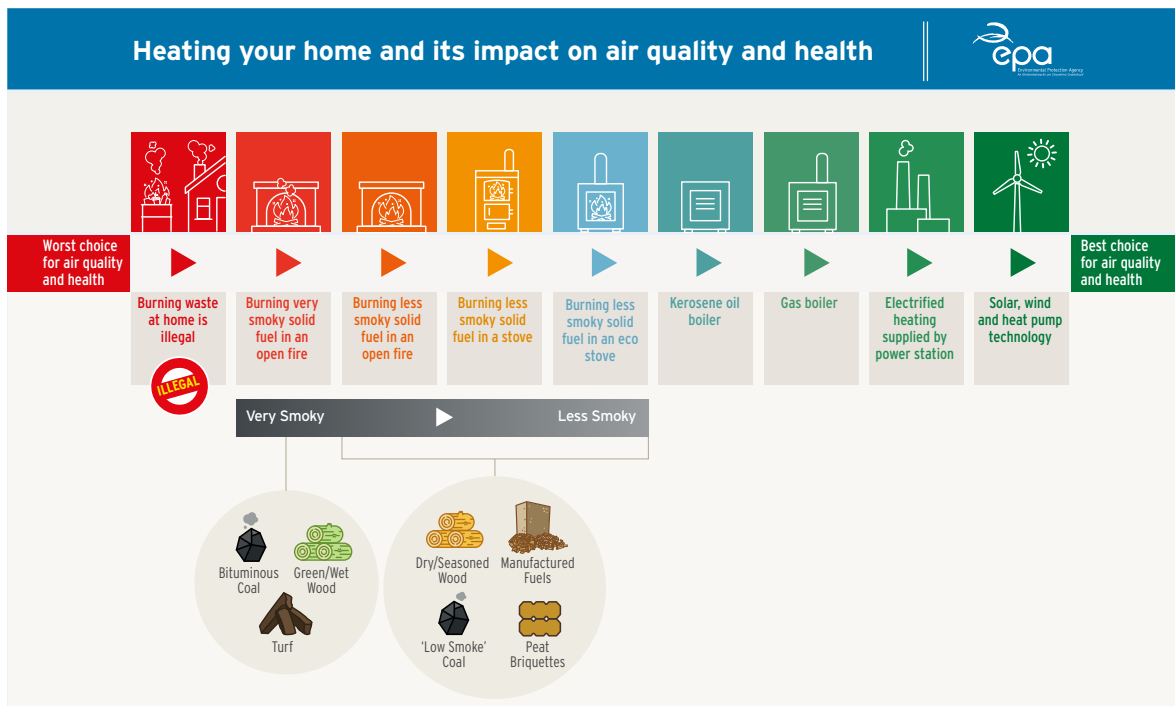
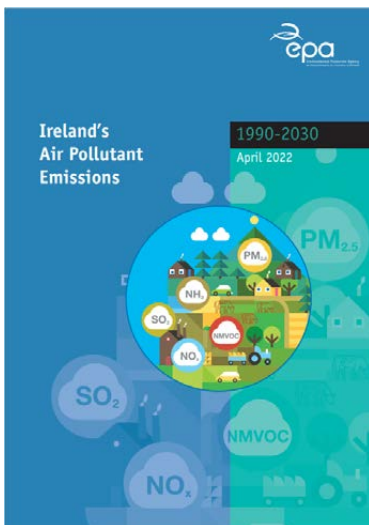


Figure 8. Infographic on the air quality and health aspects of home heating choices

Air Pollutant Emission Inventories and Projections



In 2022, EPA published a report on its assessment of emissions of five key air pollutants – ammonia, non-methane volatile organic compounds, sulphur dioxide, nitrogen oxides and fine particulate matter. These pollutants impact air quality, health and the environment and are subject to reduction commitments under the EU National Emission Reduction Commitments (NEC) Directive. In addition, emissions projections for these air pollutants to 2040 were prepared and submitted to the United Nations Economic Commission for Europe (UNECE), under the Convention on Long-range Transboundary Air Pollution (CLRTAP).

This report shows that although ammonia emissions decreased slightly in 2020, they remained non-compliant with the National Emissions Reduction Commitment. The 2020 data shows that increased use of abatement technologies has led to a reduction in ammonia emissions. Low emissions spreading techniques were used to apply approximately 36% of cattle slurries in 2020, a greater percentage than had been projected, which avoided over 5,600 tonnes of ammonia emissions. A 62% increase in the uptake of protected urea fertiliser also saved over 500 tonnes of ammonia emissions, though usage remains low compared to other fertiliser types.

Emissions of nitrogen oxides (NO_x) decreased by 6% in 2020, with transport NO_x emissions decreasing by almost 16%. This reflected the reduction in transport activity seen as a result of the Covid-19 restrictions as well as improvement in vehicle NO_x abatement technologies.

Despite 7% lower emissions of fine particulate matter (PM_{2.5}) from the transport sector, overall PM_{2.5} emissions increased in 2020 due to higher emissions from home heating. NO_x and PM_{2.5} emissions have human health implications, particularly in urban environments. Despite compliance with NEC Directive reduction commitments, particulate matter levels recorded at EPA ambient air quality monitoring stations in 2020 continued to be a concern in villages, towns and cities.

Water Quality

The EPA is responsible for co-ordinating and implementing the national water quality monitoring programme, undertaking technical and scientific assessments to understand the pressures impacting on water, and helping to inform the measures which need to be taken to protect and improve water quality. This information is also required for reporting to the EU on the Water Framework Directive (WFD) and other water related activities.

The national surface water and groundwater monitoring programme was substantially completed during 2022 and included the following:

- ▲ Chemical analysis of 14,861 water samples from rivers, lakes and estuaries

- ▲ Ecological surveys and chemical sampling from 2060 waterbodies including rivers, lakes, estuaries and coastal water bodies
- ▲ Sampling and analysis of 765 groundwater samples from approximately 270 springs and wells

During 2022, the EPA conducted a review of the water quality monitoring programme. This has resulted in a more agile and flexible monitoring programme which retains its statistical and scientific robustness.

In October 2022, the EPA published the [Water Quality in Ireland 2016–2021](#) report providing an update on the quality of water in Ireland’s rivers, lakes, transitional and coastal waters and groundwater. Figure 9 summarises the ecological status of our waterbodies between 2016 and 2021.

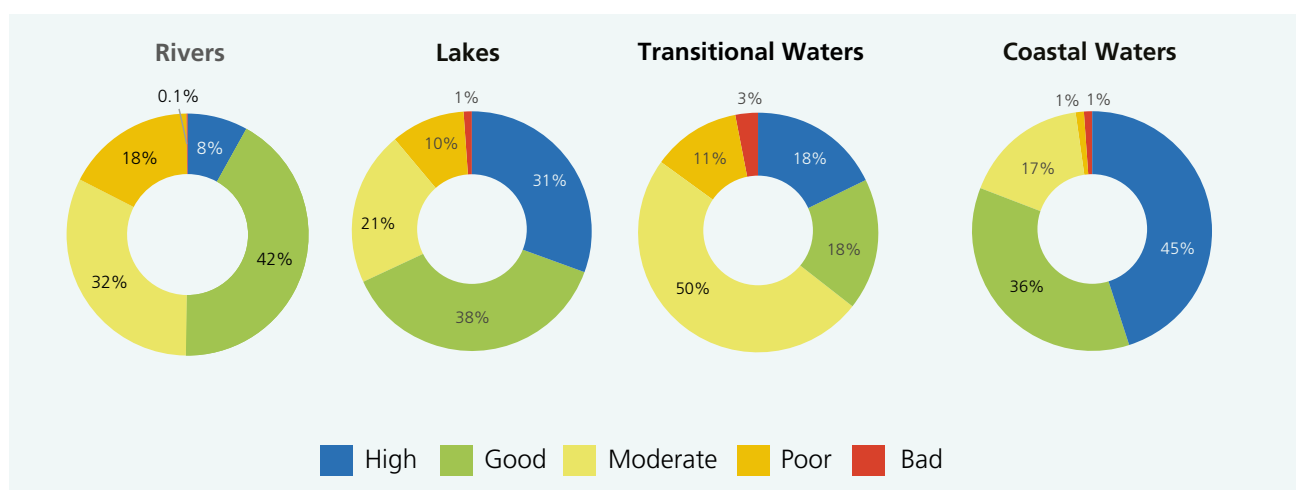


Figure 9. Proportion of surface water body categories in each ecological status class 2016 - 2021

The water quality report highlighted that over half (54%) of our surface waters are in good or high ecological status which means that nearly half (46%) are in unsatisfactory condition. Overall, our water quality has declined. The number of water bodies in satisfactory condition in our estuaries and coastal waters has declined by almost 16%, and 10% respectively, since the last assessment (2013-2018). There has also been a relatively small decline in the water quality of our rivers and lakes.

Of the river sites, 43%, mostly in the south and southeast of the country, have high nitrate concentrations while nearly a third of river sites (30%) and a third of lakes (33%) have

elevated phosphorus concentrations. Phosphorus levels are particularly high in lakes in the northeast of the country. When nutrients such as nitrogen and phosphorus enter our waterways they cause an increase in the growth of plants and algae. This in turn clogs up our water courses, uses up oxygen and harms other aquatic life such as insects and fish. The report outlined that agriculture is the most prevalent significant pressure impacting over 1,000 water bodies (see Figure 10), followed by hydromorphology (physical changes) (453 water bodies impacted), forestry (232 water bodies impacted) and urban waste water (214 water bodies impacted).

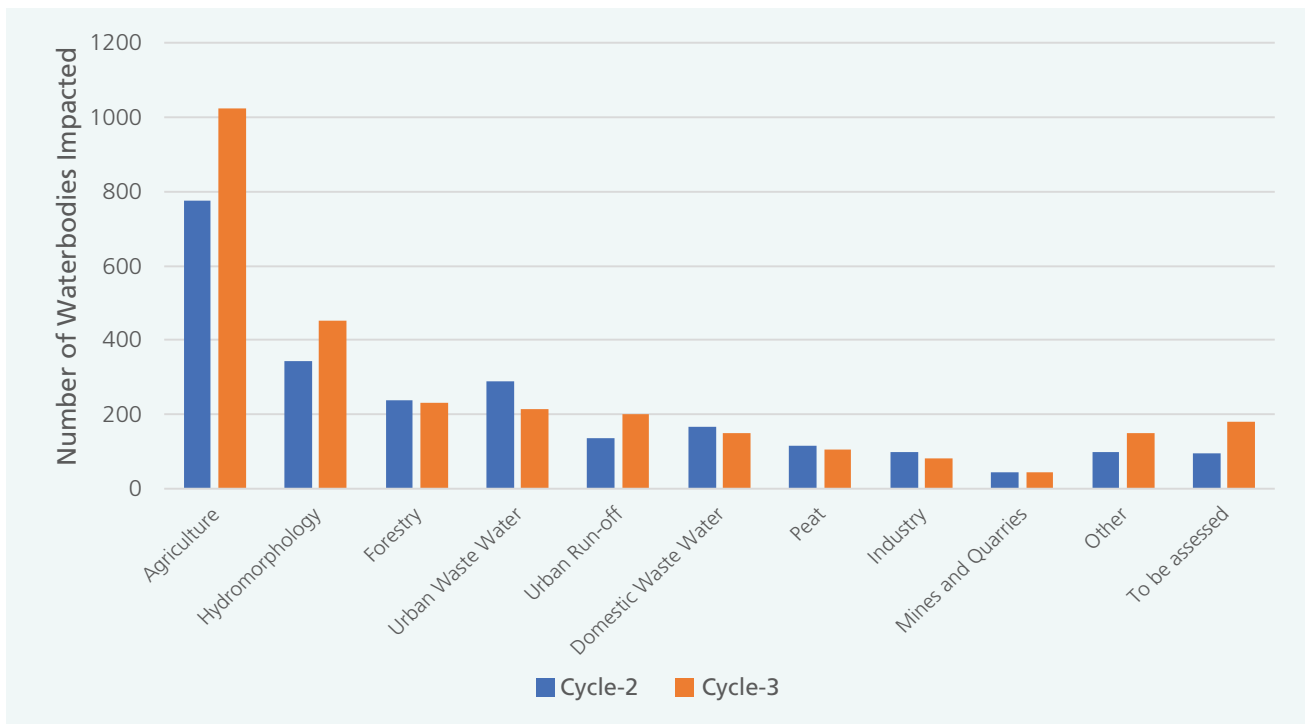


Figure 10. Comparison of significant pressures Cycle-2 and Cycle-3

Improvements within the Priority Areas for Action exceeded improvements outside these areas and further work is ongoing to understand why.

In 2022, the EPA also coordinated and published the annual report on emissions of nitrogen and phosphorus to water for 2021. This work supports the assessment of the impact of Ireland's Nitrates Derogation on water quality.

Evidence and Assessment Tools

In May, the EPA completed a review of heavily modified waterbodies including a public consultation process. In total, 466 waterbodies were found to be substantially modified, and based on their current use, would meet the criteria for designation as a heavily modified waterbody. A report on the review was submitted to the Minister for Housing, Local Government and Heritage for consideration.

During 2022, an evidence-based risk assessment approach was developed for selecting farms to be inspected under the new National Agricultural Inspection programme. This approach will focus inspections to address the specific water quality issues in each waterbody.

A modelling approach to assess the ecological status of unmonitored lakes and rivers was developed and implemented. Work commenced on a gap analysis to assess what the programme of measures in the draft river basin management plan would likely achieve in terms of outcomes. This work will be further refined in 2023. The

EPA continued the development of tools for assessing the risks of sediment impacts on water quality which helps provide the evidence base to target measures.

Hydrometric Programme

The EPA continues to provide hydrometric data to support national and international reporting obligations, water resource planning and management, flood risk management, infrastructure design and a variety of other activities.

During 2022, the EPA carried out 1,779 assessments of groundwater levels and surface water levels and/or flow at sites throughout the country. These assessments primarily focused on the EPA/local authority network of sites, but also included targeted flow measurements where data was needed for specific purposes. The data are available for download via the [EPA's HydroNet web tool](#).

The EPA continues to maintain the National Abstraction Registration portal under the abstraction registration regulations. At the end of 2022, there were 2,904 individual abstraction points registered with the EPA.

Under the EU WFD Working Group on Groundwater, Ireland led a task to develop tools for assessing the impacts of climate change on groundwater which was completed in 2022. A review of data and analysis of Member State practices was completed, and its findings and guidance recommendations were published by the Working Group.

Bathing Water Quality

In May 2022, the EPA published the annual bathing water report which assessed results for the 2021 bathing season. Details of the 2021 assessments are summarised in Figure 11.

The report found that 97% of bathing waters (144 of 148) in 2021 met or exceeded the minimum required standard. This is up from 96% in 2020.

The EPA worked with the Bathing Water Expert Group, which is led by DHLGH, to develop an approach to protecting bathers' health outside the bathing water season.



Figure 11. Infographic on bathing water quality in 2021

European Pollutant Release and Transfer Register

The EPA is required to submit the European Pollutant Release and Transfer Register (EPRTTR) data to the European Commission each year. The 2021 data set for the EPRTTR was submitted to the European Commission in advance of the 30 November deadline.

Chemicals in the Environment

The EPA prepared reports for submission to international conventions covering persistent organic pollutants (UN Stockholm Convention) and mercury (UN Minamata Convention). These reports collate information from across the EPA and from other organisations including The Food Safety Authority Ireland, Marine Institute, Customs and HSA.

Monitoring studies continued for hazardous substances in 2022 with two projects underway to study PFAS levels in the environment.

Environment Laboratory

The EPA laboratories in Castlebar, Dublin, Kilkenny and Monaghan undertake analysis to support the implementation of monitoring programmes, licensing, enforcement, and the Water Framework Directive.

These laboratories, together with the sampling team in Cork, carry out monitoring, analysis and reporting of samples taken for enforcement at licensed facilities, as well as auditing at waste water treatment sites. Auditing at drinking water treatment sites and at licensees' laboratories

are initiatives that were piloted in 2022 and will continue into 2023. The laboratories also analyse samples from rivers, lakes, groundwaters and transitional and coastal waters under the National Water Framework Directive Monitoring Programmes. During 2022, the laboratories

carried out a range of analyses on 15,626 WFD samples (14,861 from rivers, lakes and estuaries and 765 from groundwaters). This is slightly more than the 15,391 samples analysed in 2021. A breakdown of the sample numbers analysed in 2022 is provided in Figure 12.

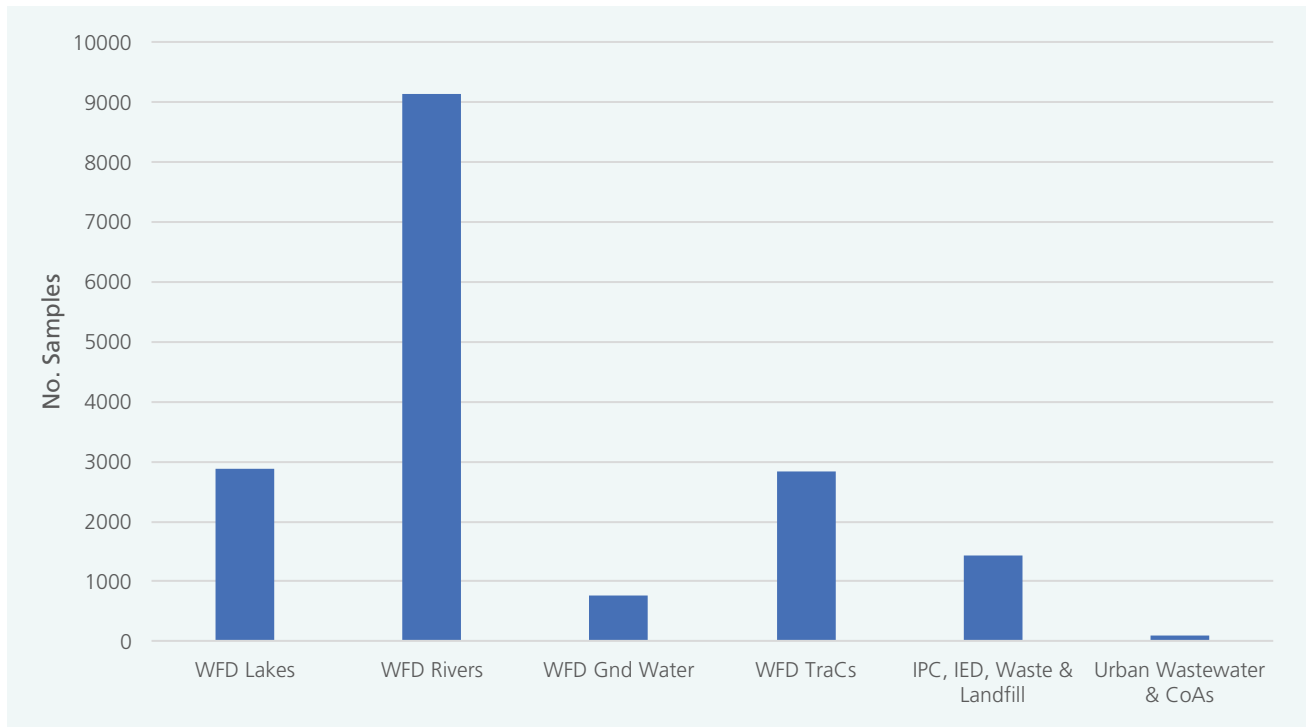


Figure 12. Number of samples, by type, analysed by EPA water laboratories in 2022

In October 2022, the air, radiation, and water laboratories were re-assessed against the requirements of the ISO 17025:2017 standard by the Irish National Accreditation Board (INAB). The successful audit recognised the work of the EPA in continuous development, maintenance and support of the quality system across several sites.

The Lean Change Programme continued to deliver benefits for the EPA's laboratories in 2022. This included a review of the Water Framework Directive monitoring programme for rivers and lakes in terms of frequency of monitoring, turnaround times for analyses, identification of priority substances and river basin specific pollutants, report preparation and publication. The changes arising from the review were communicated to all local authorities prior to the start of the 2023 monitoring programme.

Radiation Monitoring

Instrument Calibration

The EPA's Instrument Calibration Service provides an accredited calibration service for a range of radiation protection instruments, including survey meters, contamination monitors and electronic personal dosimeters. This service supports radiation safety and the

monitoring of radiation levels in the workplace for licensees and stakeholders in industry, medicine, defence, research, regulation, and emergency response.

The service continued to provide high quality calibrations for radiation monitors used to protect workers and the public from external exposures with 242 instruments calibrated in 2022. A new online booking system through the EPA's website was launched for customers in 2022.

Radioanalytical

The EPA measures radioactivity in a wide range of foodstuffs and environmental samples. This work is undertaken both in support of the EPA's environmental radioactivity monitoring programmes and on a contract basis for external clients.

The contract radioanalytical services provided during 2022 included:

- ▲ Testing of Irish produce for compliance with the requirements of importing countries as well as imported animal-feed grains from third- countries.
- ▲ Testing of drinking water for compliance with the requirements of the European Communities Regulations.

- ▲ Testing of wipe-tests undertaken on radioactive sources to identify leakages.
- ▲ Testing of dredged samples for compliance with the requirements of the Dumping at Sea Act 1996, as amended.

The 2022 radiation monitoring programme involved sampling and testing for radioactivity in air, drinking water, soil, seawater, seaweed, sediments, fish, shellfish, mixed diet and other foodstuffs as well as the continuous measurement of the ambient gamma dose rate at fixed monitoring stations around the country.

The 2017-2022 national surveillance programme for verifying compliance of drinking water with levels of radioactivity set out in legislation continued in 2022.

A total of 528 environmental samples were analysed for various monitoring programmes during the year. The findings of this monitoring showed that, although the levels of artificial radioactivity in the Irish environment remain detectable, they are low and do not pose a significant risk to human health.

The EPA also supports the Irish food and agriculture industry through the assessment of the radioactivity status of Irish foodstuffs. This assessment provides the basis for certifying radioactivity in produce for export following the 1986 Chernobyl accident. The number of product certificates issued in 2022 was 2,831.

National Radiation Monitoring Network

The National Radiation Monitoring Network is maintained as part of the EPA's responsibilities under the EURATOM Treaty and the National Plan for Nuclear and Radiological Emergency Exposures. The Network currently includes fifteen monitoring stations throughout the country that constantly monitor radiation levels in the environment and send live data to the EPA website as well as to the European Commission. The network also includes instruments to measure radioactivity concentrations in air. Some of these provide live data to the EPA while others contain aerosol filters that are collected and sent to the EPA's Radiation Monitoring Laboratory for analysis. In addition, the Network has ten rainwater samplers which continuously gather samples for analysis in the EPA. In the event of an overseas nuclear or radiological accident, the Network would detect if there were any enhanced levels of ambient radiation in Ireland.

In 2022, the EPA made significant progress in upgrading the Network with new instrumentation (Figure 13) deployed and additional monitoring sites added. When these instruments are brought online the total number of monitoring stations in the network will have increased to 26. The upgraded network will be completed in 2023.



Figure 13. Equipment installed as part of the Network upgrade



National Radon Control Strategy

The National Radon Control Strategy (NRCS) is a cross-government strategy that aims to reduce the number of radon related lung cancers in Ireland. A key action under the Strategy was to update the 2002 maps to use knowledge of local geology to the better target resources to those areas most at risk from radon. EPA published updated radon risk maps in May at the National Radon Forum. The new maps are based on work completed by Trinity College Dublin, the Geological Survey of Ireland and EPA. The new maps have improved accessibility and searchability allowing the radon risk in an area to be displayed to street level, a significant improvement on the previous map. Publication of the maps resulted in an unprecedented 80,000 visits to the website in the days following the launch, compared to an average of 3,000 visits per month beforehand. In total, radon-related pages were viewed more than 510,000 times during 2022.

Based on the new maps, it is now predicted that 170,000 homes have radon concentrations above the national reference level. This is an increase of 45,000 homes since the previous estimate made in 2002.

During 2022, EPA continued to provide webpages with advice on radon testing and remediation for householders, businesses and building professionals. In addition, EPA provides for a freephone radon advice number 24 hours a day, seven days a week.

European Radon Day 2022 was marked on the 7 November with a week-long radon awareness campaign that highlighted the importance of testing and remediation through a series of radio advertisements and a social media campaign. EPA continues to recommend that all homeowners should test their homes for radon.

Non-ionising Radiation

During 2022, EPA completed a national monitoring programme for Non-Ionising Radiation (NIR) within the frequency range 0 Hz to 300 GHz. Measurements were completed at street level in 55 urban sites throughout the country. The focus was predominantly on frequencies used for telecommunication like mobile phones, radio and TV broadcasting, Wi-Fi and Bluetooth (100 kHz - 300 GHz). The results found that levels in all urban sites measured were well below international guideline limits. No adverse health effects have been shown at EMF exposure levels below international guidelines.

During 2022, the European Commission mandated its scientific committee (SCHNEER) to review the implications for EU legislation of new international 2020 guidelines for radiofrequency electromagnetic fields levels from the International Commission on Non-Ionising Radiation Protection (ICNIRP). SCHNEER is expected to give its final opinion in 2023 which considers submissions from the public. The EPA is monitoring this evaluation in the context of its statutory advice role and what it may mean for Ireland.

Ecosystems Monitoring and Reporting

Under the revised National Emissions Reduction Commitments (NEC) Directive (2016/2284) a network is being set up in Ireland to monitor impacts of air pollution on sensitive ecosystems. The network, called the National Ecosystems Monitoring Network, consists of a collection of sites that are representative of different habitats across the country. The network is particularly focussed on providing evidence of the impacts of nitrogen deposition including ammonia, on these habitats. The monitoring on the network sites is being delivered by the EPA and other organisations including the National Parks and Wildlife Service, where contractors have completed ecological surveys of raised bogs, calcareous grasslands and Molinia meadows.

During 2022, work on establishing the network progressed well. A significant proportion of the terrestrial habitat surveys were completed, and EPA set up two atmospheric monitoring sites towards the end of the year. EPA submitted a report to the European Environment Agency on the site locations and what they are being monitoring for as per the requirements of the directive in the middle of 2022. EPA will report the first sets of data related to those sites in mid-2023.

Noise

Work continued by the EPA to coordinate the national strategic mapping of environmental noise from major transport sources. This is a requirement of the Environmental Noise Directive (END) which is implemented through the European Communities (Environmental Noise) Regulations 2018, as amended. These maps are designed to highlight areas that could then be addressed by local authorities through their noise actions plans to avoid, prevent or reduce the harmful effects of environmental noise.

The EPA provided technical mapping guidance and worked closely with the designated noise mapping bodies (Local Authorities, Transport Infrastructure Ireland, Irish Rail and Dublin Airport Authority) to progress the fourth

round of Strategic Noise Mapping which covers roads, rail, agglomerations, and airport sources. These maps are based on 2021 data and for the first time the noise maps were developed using a new EU common noise modelling approach.

The modelling work involved in preparing the maps included extensive data collection, collaboration and technical work across the mapping bodies. Most of the data covering Dublin, Cork and Limerick, plus the major roads was finalised for submission to the European Environment Agency (EEA) by end of 2022 but there were some close-out items and data sets continuing into 2023. The mapping bodies and the EPA will make the finished maps available on their respective websites in 2023. The EPA will report this data to the European Environment Agency in due course.

The maps are just one element, the noise action plans are the key to reducing the impacts from noise and protecting quiet areas. Local authorities must annually report progress on their action plans to the EPA. These progress reports have been reviewed by the EPA and the assessment included in the EPA's Local Authority Performance Framework.

Land cover and Land use

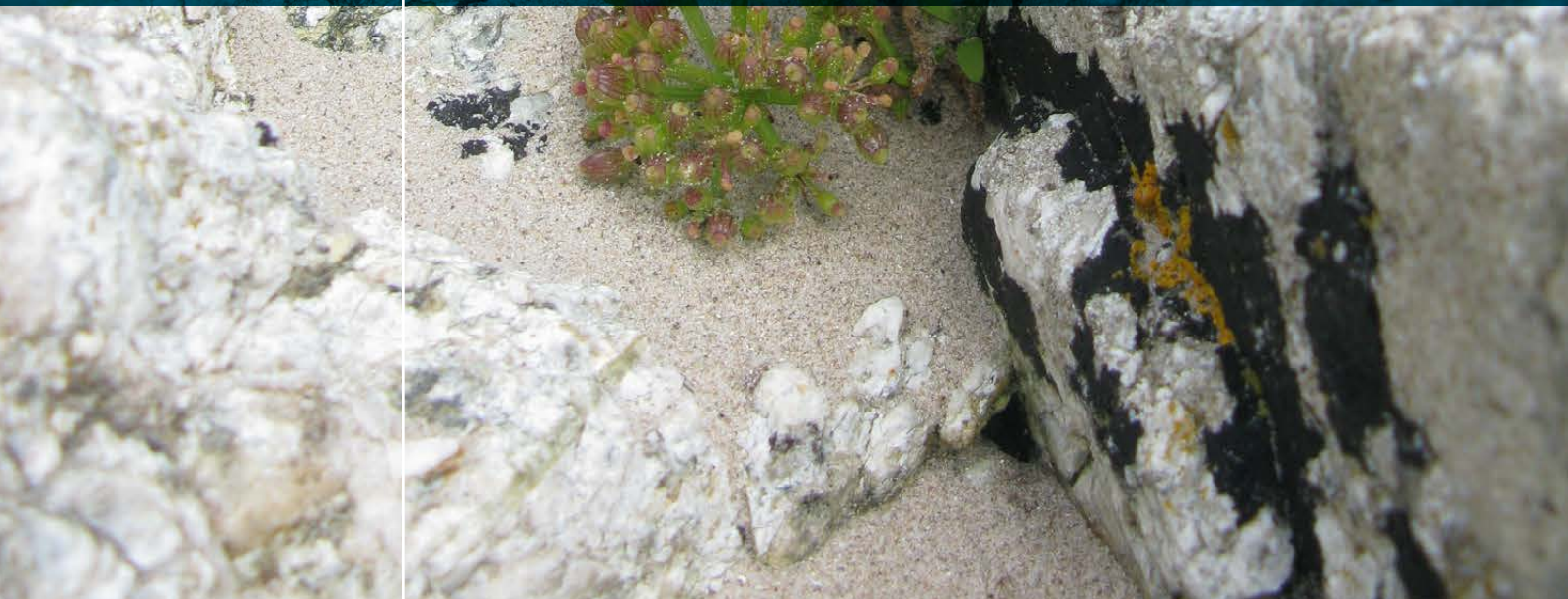
A new [National Landcover Map](#) has been co-produced by the EPA and the National Mapping Division of Tailte Éireann, formerly Ordnance Survey Ireland. This high-resolution map shows landcover types in the Republic of Ireland mapped against Tailte Éireann PRIME2 boundaries. It is a very significant addition to Ireland's land mapping and assessment capability.

The EPA was tasked by Government in 2020 to develop the evidence part of to determine the characteristics of land types across Ireland. Phase 1 was completed at the end of 2022 and provides a comprehensive evidence base about current land use patterns, policies, stakeholders, environmental status and socio-economic factors. The outputs will inform the next phase of the Land Use Review, which will build on the evidence gathered.



3

Climate Action



We use our knowledge to drive climate action

We drive the transition to climate neutrality and resilience through our evidence and engagement work.

We lead by example by reducing our greenhouse gas emissions

3. CLIMATE ACTION

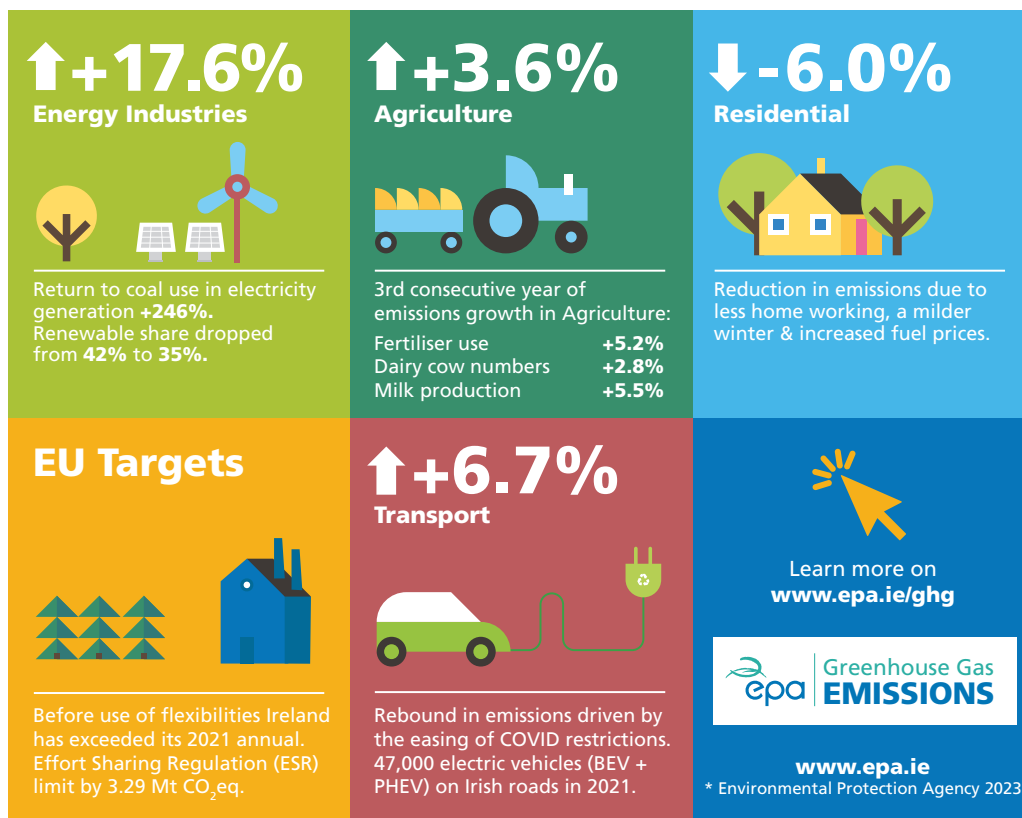
The EPA’s role in addressing climate change challenges include preparing Ireland’s greenhouse gas inventories and projections; regulating emissions from industrial sectors; supporting climate science research; supporting behavioural change and facilitating the National Dialogue on Climate Action.

3.1 Inventories and Projections

Emission Inventories

The EPA [Provisional Greenhouse gas Inventory for 1990-2021](#) was published in July 2022. This was followed up with an updated, final publication in April 2023. Key findings were that overall greenhouse gas (GHG) emissions increased by 5.2% in 2021, driven by an increase in coal-fired electricity generation, as well as increases in the other key sectors, Agriculture and Transport. A continued increase in dairy production and the ending of Covid-19 transport restrictions were key drivers for emissions from the Agriculture and Transport sectors.

2021 is the first of ten years over which compliance with targets set in the European Union’s Effort Sharing Regulation (ESR - EU 2018/842) will be assessed. This Regulation sets 2030 targets for emissions outside of the Emissions Trading Scheme (known as ESR emissions) and annual binding national limits for the period 2021-2030. Ireland’s target is to reduce ESR emissions by 30% by 2030 compared with 2005 levels, with a number of flexibilities available to assist in achieving this.



Ireland's 2021 greenhouse gas ESR emissions exceeded the annual emissions allocation for 2021 by 3.29 million tonnes carbon dioxide equivalent (Mt CO₂eq), indicating that Ireland will need to make use of available flexibilities, borrow emissions allocations from subsequent years and/or purchase emissions allocations from other Member States to achieve compliance with its 2021 Effort Sharing Regulation annual limit. The Agriculture and Transport sectors accounted for 74% of total ESR emissions in 2021.

Emissions Projections

EPA [Greenhouse gas Projections for 2021-2040](#), published in June 2022 indicated that already implemented ('existing') measures would achieve a 9% reduction on emissions in 2030 compared to 2018, while additional measures in the 2021 Climate Action Plan would achieve a 28% reduction. The report highlighted the need for faster implementation of known measures as well as greater clarity on how planned measures are expected to operate if a 51% reduction in overall greenhouse gas emissions by 2030 is to be achieved. The report noted that, with additional measures, existing EU targets could be met, however new more challenging targets are expected as part of the 'fit-for-55' package of measures for deeper EU decarbonisation in light of the international goal to limit global temperature rise to 1.5 degrees Celsius.

National Carbon Budgets officially took effect on 5 April 2022 having been adopted by both Houses of the Oireachtas, with legally binding sectoral ceilings being announced later in the summer. Three Carbon budgets were adopted, for the periods 2021-2025, 2026-2030 and 2031-2035 with the budgets set at 295 Mt CO₂ eq, 200 Mt CO₂ eq and 151 Mt CO₂ eq respectively. The EPA Inventory and Projections reports provided an assessment of emissions/projected emissions compared to these carbon budgets, with the first budget projected to be exceeded by 30-55 Mt CO₂ eq, the second by 77-127 Mt CO₂ eq and the third by 94-166 Mt CO₂ eq.

3.2 Behavioural Change

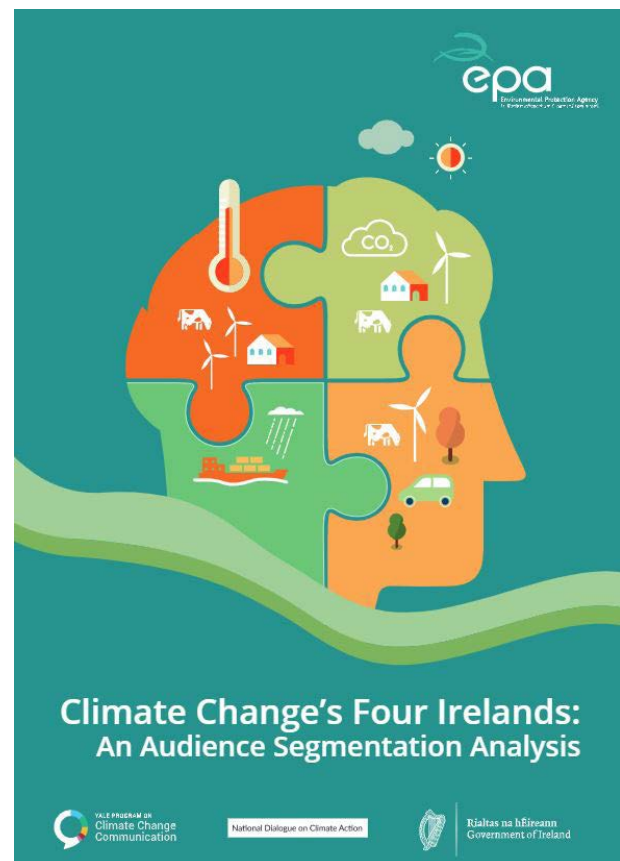
The second report from 'Climate Change in the Irish Mind' project '[Climate Change's Four Irelands: An Audience Segmentation Analysis](#)' was published in November 2022. The report identified four audience segments in Ireland:

- ▲ The Alarmed (36% of the Irish population) strongly believe that climate change due to human activity is a real and immediate threat.
- ▲ The Concerned (48% of the Irish population) are the

- ▲ largest audience. They are convinced that climate change is serious issue, but when compared to the Alarmed are less worried about it and view it as a less immediate threat.
- ▲ The Cautious (12% of the Irish population) believe climate change is happening but are less sure of the causes and are less likely to think it will personally affect them.
- ▲ The Doubtful (3% of the Irish population) believe climate change is happening, but with less certainty than other audiences.

The results of this study provide an important evidence base that can be used to inform policy development and communications campaign messaging regarding the Irish public's beliefs, risk perceptions, policy preferences and behaviours regarding climate change. The project will deliver three key outputs:

1. A 'Climate Change in the Irish Mind' report;
2. a segmentation report; and
3. an online interactive map.



The report "Climate Change's Four Irelands: An Audience Segmentation Analysis" is based on a nationally representative survey of more than 4,000 people during the summer of 2021.

3.3 Climate Science

The EPA represented Ireland at two plenary meetings of the Intergovernmental Panel on Climate Change (IPCC), during February and March 2022, that completed its major reports on adaptation to climate change and mitigation of climate change. These reports were important inputs to the work of the UN Framework Convention on Climate Change (UNFCCC) meetings later in 2022 including for its the Paris Agreement Global Stocktake. The EPA, as members of the national delegation and the EU Team, provided expert support for negotiations at these meeting; including at the 27th Conference of Parties (COP27) meeting.

The Climate Research Coordination Group (CRCG) was established by the EPA to coordinate climate change-related research in Ireland and published its fourth [Annual Report of Activities \(2021\)](#) in September 2022.

The EPA chairs the Joint Programming Initiative (JPI) on Climate Change which acts to align and coordinate climate research across the European Research Area. In 2022, JPI Climate advanced important work on climate change and culture and heritage, and on pan-European analysis of emissions and removals linked to agriculture and land use.

Following a Government decision, Ireland formally joined the European Integrated Carbon Observation System (ICOS) Research Infrastructure, in 2022. ICOS acts to align measurements of greenhouse gas emissions and removals across Europe. Key sites in Ireland will now be included in the European network. The data enable independent scientific analysis of GHG emissions and removals and can enhance the official analysis provided in National Inventories. Once verified, these analyses will complement the official data provided in Ireland's National Inventory reports. The ICOS-Ireland network includes sites owned and managed by Teagasc, Met Eireann, National Parks and Wildlife Service and the Marine Institute. The data are actively used in national and international research projects.

Ireland's Climate Change Assessment

The EPA is leading on the provision of Ireland's first Climate Change Assessment (ICCA) and is being supported by Science Foundation Ireland, Sustainable Energy Authority Ireland and the Department of Transport. The Assessment is designed to build on and localise the most recent information provided by the Intergovernmental Panel on Climate Change (IPCC) 6th Assessment Report. It is focused on information and data from climate change research and systematic observations in Ireland. The report structure largely mirrors that used by the IPCC in that it addressed scientific understanding of climate change

and response options through mitigation and adaptation. In addition, it also looks at the opportunities arising from social and economic transition and transformation. It will be completed in 2023 and published in four volumes: 1 Science: Ireland in a changing world; 2 Achieving climate neutrality by 2050; 3 Being prepared for Ireland's future climate; and 4 Realising the benefits of transition and transformation along with a Synthesis report which frames and links the information in the volumes providing an authoritative analysis of these areas.

3.4 EPA's Environmental Management System

The EPA is committed to leading by example and incorporating good environmental management and practice in everyday activities. The EPA implements an Environmental Management System (EMS), certified to the international standard ISO 14001:2015. This EMS has been essential in the delivery of the EPA's achievements to date in minimising the environmental impact of activities and drives the continual environmental improvement, to prevent pollution, to measure and reduce greenhouse gas emissions, adapt to climate change and encourage environmental awareness within the organisation. In compliance with Circular 1/2020 the EPA made the required payment to offset our 2022 emissions of 35.385 Tonnes of CO₂ associated with business air travel.

Greenhouse Gas Emissions

In 2022 the EPA, as part of our commitment to achieve permanent reductions in our total energy usage and GHG emissions, prepared the groundwork for formal reporting of our emissions under the international Greenhouse Gas Protocol standard. A baseline period (average 2016 to 2018) was adopted with formal disclosure commencing with 2021 data. A reporting scope was also adopted consisting of Scope 1 (Direct emissions from fixed and mobile combustion), Scope 2 (indirect emissions – electricity) and Scope 3 (indirect emissions – business travel, commuting, water usage and waste disposal) emissions.

Total Carbon emissions arising from the EPA's activities in 2021 were 962.92 tonnes CO₂eq. This is slightly over half the average baseline period emissions (1,828 tCO₂e) and is influenced by reduced activity due to Covid-19 restrictions. An increase is expected in 2022 emissions due to increased building occupancy and increased transport use with a return to pre-pandemic levels of operation.

Energy usage

The EPA’s energy demand is mainly from heating, lighting, electrical power, hot water and transport. In 2022, the EPA’s total energy consumption (Figure 14) amounted to 2,760 megawatt hours (MWh) showing an overall increase of 6.4% during the period 2021 to 2022. These figures were impacted by Covid-19 restrictions. When 2022 energy is compared with 2019 (pre-Covid restrictions) the figures show a reduction of 12.3%.

The EPA’s largest energy source, electricity, reduced by 1.8% from 2021 to 2022 and 13.2% during the period 2019 to 2022. Energy reduction projects such as LED lighting upgrades are helping to deliver these sustainable reductions. The EPA’s thermal energy demand increased by 9% when compared to 2021 as staff began returning to occupy buildings. Thermal energy demand is however down 4.3% since 2019 and is expected to fall further as delivery of building fabric and heating system upgrade projects progress. Fuel for Fleet Transport also rose from 2021 to 2022 as the EPA returned to normal operation but is showing a 29.6% reduction over pre-Covid-19 level. This reduction is due to a combination of reduced activity and a move towards electrification of the fleet.

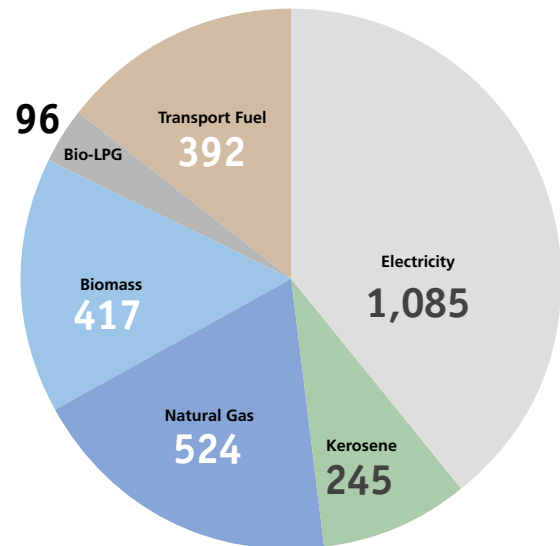


Figure 14. EPA energy usage in megawatt hours (MW h) 2022

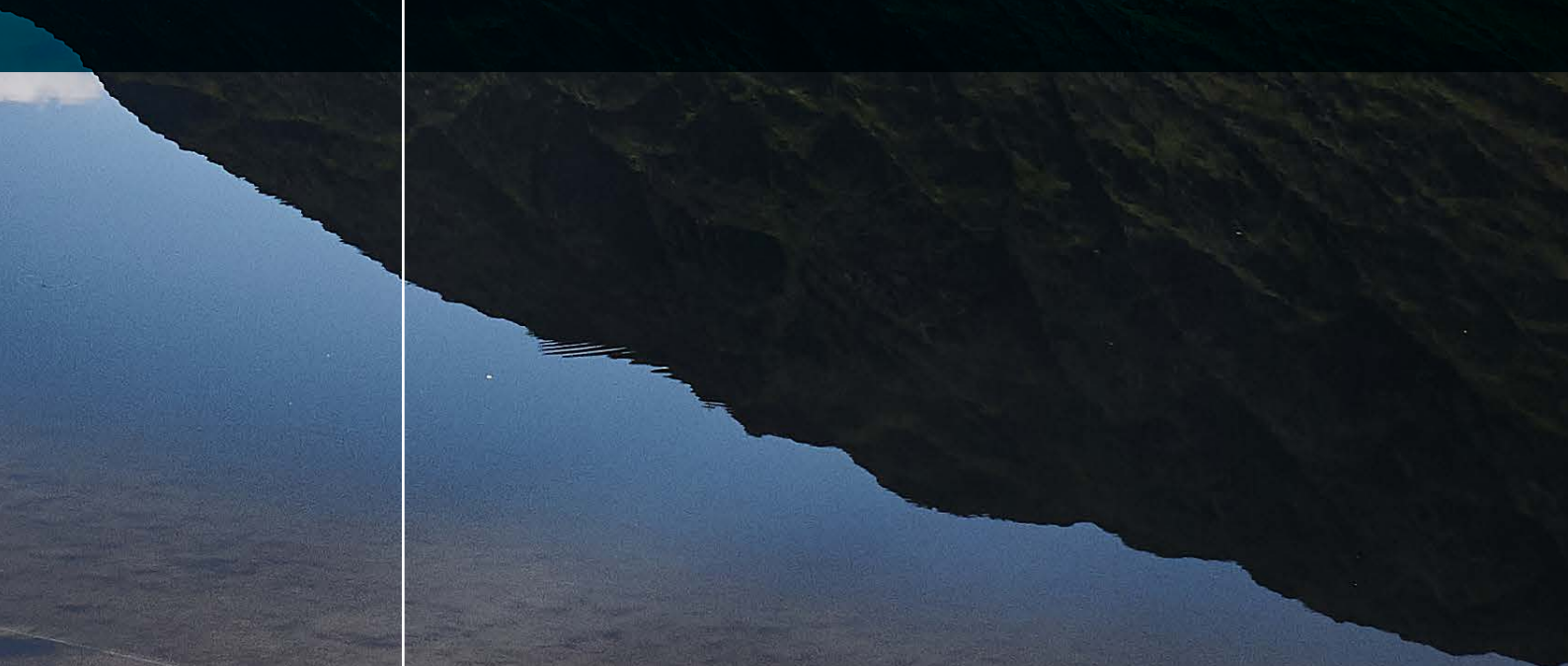






4

Sustainable Production and Consumption



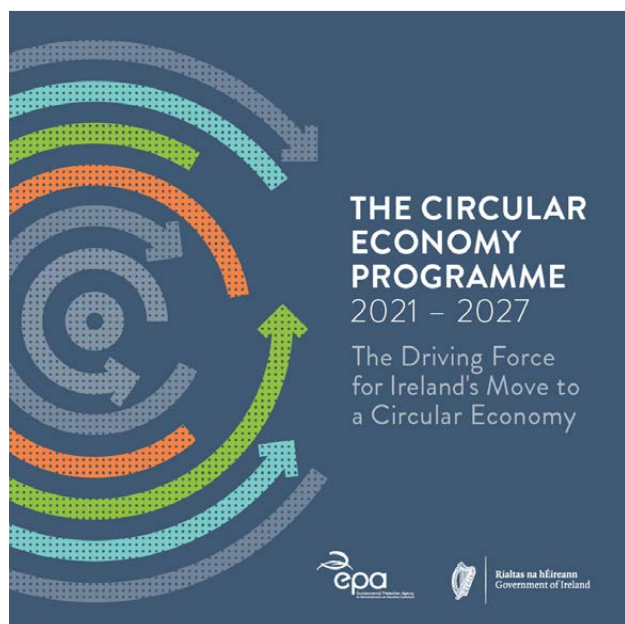
We promote the transition to sustainable production and consumption

Our evidence, engagement and regulatory activities foster and support the public and businesses to use less resources and make better choices for the environment

4. SUSTAINABLE PRODUCTION AND CONSUMPTION

In a circular economy, less raw material is used, products are designed for long-life, recyclability, shared, used for longer, repaired and reused. Material and products are recycled as much as possible and only the fraction that can't be recycled is disposed.

4.1 Circular Economy Programme



In 2022, the Circular Economy Act came into force putting the EPA's Circular Economy Programme on a statutory footing. The vision of the programme is to use less resources, prevent waste while supporting sustainable economic growth. The programme delivers a range of activities related to regulating, measuring and implementing the circular economy and waste. Collaboration with Government, local government, industry, business and social enterprises is key to the continued success in driving the transition to a low carbon circular economy.

4.2 Circular Economy Regulation

The regulatory provisions for assessing if materials can be declared as end-of-waste or as a by-product help to achieve a circular economy by allowing for the use

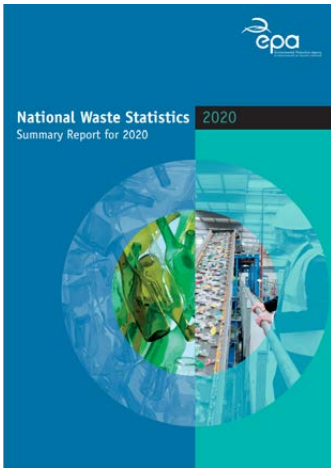
of secondary materials as a resource or product. This minimises the extraction of additional natural resources and avoids unnecessary waste generation. Focus in 2022 shifted to developing national criteria for by-product (road planings and soil and stone) and end-of-waste (recycled aggregates). The development of these national decisions has involved technical assessment, market analysis and stakeholder engagement activities.

In addition to working on the national decisions, the EPA continued to assess and issue decisions on individual by-product notifications and end-of-waste applications as illustrated by the following examples:

- ▲ Two significant by-product determinations were approved relating to industrial chemicals. These determinations will result in the prevention of significant quantities of hazardous waste, contributing to specific actions set out in the National Hazardous Waste Management Plan.
- ▲ Three end-of-waste individual application decisions were made for recycled aggregates and plastics.
- ▲ The EPA recognised a French National end-of-waste criteria and decision in relation to waste oils allowing for the transportation and use of the product in Ireland without waste authorisations being in place.

During 2022, the implementation and roll out of the new improved online system for by-product notifications continued. Efforts continue to eliminate any inefficiencies identified in the process. A total of 341 notifications were received in 2022. The total number of by-product notifications closed out in 2022 was 122 (97 determined as by-product, 20 determined as waste and five withdrawn).

4.3 Circular Economy & Waste Statistics



The EPA has statutory responsibility to monitor, collate and validate data for waste streams generated by households, businesses and industry. This information is published each year and a summary report is produced annually. By tracking waste data, the EPA can record levels of consumption in society as well as report on progress towards meeting reuse, recycling and recovery targets.

The *National Waste Statistics Report for 2020*, published in December, highlighted worrying trends. Ireland is generating too much waste, and overall waste generation increased to 16.2 million tonnes in 2020, up from 12.7 million tonnes in 2012. The increasing levels of waste undermine efforts to recycle more and the rate of recycling has stagnated.

While Ireland is continuing to meet many of its current EU targets, those for 2025, in particular for municipal waste recycling and plastic packaging recycling, are extremely challenging. The report communicated the actions needed to meet these targets such as the:

- ▲ introduction of mandatory incentivised charging for the collection of non-household municipal waste;
- ▲ accelerated implementation of eco fee modulation to support the production of high-quality recyclables plastic packaging;
- ▲ national roll-out of brown bins; and
- ▲ targeted enforcement campaigns to lower contamination rates in the recyclable bin.

COMPLIANCE WITH EU TARGETS

Ireland **CONTINUED TO MEET ALL CURRENT RECYCLING AND RECOVERY TARGETS** for packaging waste



However **SIGNIFICANT IMPROVEMENTS** in municipal recycling will be required to meet the target of **55%**



RECYCLING RATES REMAIN WORRYINGLY LOW for plastic packaging at **29%** with a continuing trend towards **ENERGY RECOVERY** **71%**



FUTURE PLASTIC RECYCLING targets of

50% by **2025**

55% by **2030**

will be **VERY CHALLENGING** for Ireland to meet



IRELAND MET ALL RECYCLING AND RECOVERY TARGETS FOR WEEE



however Ireland **FAILED TO MEET THE NEW WEEE COLLECTION TARGET** of achieving a separate collection rate of **60%**

65%

Ireland **CONTINUED TO MEET ALL REUSE AND RECYCLING RATE TARGETS** for end-of-life vehicles



Ireland **MET THE 2020 RECOVERY TARGET** of

70%

for **C&D waste**, achieving a material recovery rate of **78%** in 2020



4.4 Circular Economy Implementation

A broad range of circular economy implementation activities took place during 2022 including those outlined below.

Green Public Procurement



Under the Climate Action Plans 2019 and 2021 the EPA is assigned lead responsibility to measure and report on Green Public Procurement (GPP) activity by government departments on an annual basis. In April 2022, the [first report, for reference year 2020](#), was published showing that – of the total reported spend of over €322 million on contracts worth over €25,000 – only 17% (approximately €53 million) included green criteria. The EPA worked with the Office of Government Procurement to support Green Public Procurement and continued to deliver training to government departments and public bodies.

Green Enterprise

The Green Enterprise: Innovation for a Circular Economy funding call supports the transition to an effective circular economy. In 2022, seven proposals were awarded a total of €597,000 in grant aid to complete pilot/demonstration projects.

Campus Living Labs

Under the Campus Living Labs partnership with the Irish Universities Association, campus populations were supported to make better choices in relation to waste prevention and recycling. The following activities took place in 2022:

- ▲ Roll out of behavioural science-designed intervention The Waste Game in four universities.
- ▲ Three campuses were supported to pilot the EPA Food Waste Pathway for the Hospitality Sector.
- ▲ The Rediscovery Centre provided workshops on bike repair in four campuses and sewing repair skills in three campuses.
- ▲ Community Resources Network Ireland provided workshops on bulky item reuse and potential for reuse/repair to staff at two campuses.

Circular Insights Series

The Circular Insights Series provides evidence and insights to inform policy and to support circular economy implementation. Two papers were published in 2022.

The first paper focused on Ireland's digital sector. Data and digitally-enabled solutions are already being leveraged to improve circularity across economies and there remains significant scope to strengthen this transition globally. The engagement and research undertaken for this paper has informed the development of a suite of recommended opportunities for the public and private sector to accelerate a digitally-enabled circular economy in Ireland.



The second paper focused on government interventions to support transition to a circular economy and identified barriers to the uptake of a circular economy. Stakeholder engagement and extensive desk-based research was undertaken to identify opportunities for targeted government interventions to overcome the barriers and embed circularity across the Irish economy.

Food Waste

Food Waste is a major issue nationally and across the EU – both in terms of waste prevention and climate change. The EPA leads Ireland’s food waste prevention effort which is focussed on Ireland’s commitment to halve food waste by 2030.

In 2022, the EPA worked with the Department of Environment, Climate and Communications to develop Ireland’s National Food Waste Prevention Roadmap 2023-2025 which was published in November 2022. The roadmap sets out several priority actions to bring focus on food waste prevention across key sectors in the food supply chain. Tackling food loss and food waste is one of the key steps we can take to achieve sustainability, help combat climate change and support Ireland’s transition to a circular economy.

The EPA’s Stop Food Waste communications campaign continued to engage with audiences with its #PlanToSave initiative taking place in November with a reach of 1.3 million.



Understanding Our Attitudes and Behaviours to Plastics

Plastics is a priority area for the Circular Economy Programme. One of the ways the programme works is through providing data and evidence, building knowledge and informing policy. To provide baseline information on the Irish public’s behaviours & attitudes to plastic and plastic waste, the EPA commissioned an online survey of nationally representative samples of adults and reported the findings.

The survey found that the main issues of concern were littering & illegal dumping of plastic, impacts on ocean health & marine life, unnecessary or excessive plastic packaging and plastic waste that cannot be readily recycled. It also found that over half of the population believe that they produce most of their plastic waste at home, with plastic food packaging from supermarkets considered to be the main source.







5

Effective Voice

We are an effective voice for Ireland's environment

We are trusted as an independent and transparent source of environmental evidence and information.

We improve the environment through working with others and proactively influencing policy, legislation and behavioural change.

5. EFFECTIVE VOICE

5.1 Partnering and Networking

Oireachtas Committees

The EPA welcomes the opportunity to engage with and inform Joint and Select Committees of the Oireachtas in their legislative and administrative oversight functions. During 2022, the EPA attended the Joint Oireachtas Committee on Housing, Local Government and Heritage on water quality and supply issues.

Oversight Agreement

In line with requirements of the Code of Practice for the Governance of State Bodies, a written Oversight Agreement that clearly defines the relationship between the parent Department and the EPA is in place with the Department of Environment, Climate and Communications (DECC). The Oversight Agreement recognises that the Department of Housing, Local Government and Heritage (DHLGH) has responsibility for several areas of direct relevance to the EPA's remit and defines the EPA's relationship with DHLGH.

A Performance Delivery Agreement forms part of the Oversight Agreement and focuses on the key priorities and objectives of the EPA. The agreement defines clear service ownership and accountability in relation to the roles and responsibilities of each party with a view to ensuring that the statutory functions of the EPA are discharged in an efficient and effective manner.

Memoranda of Understanding/Service Level Agreements

The EPA has adopted Memoranda of Understanding (MoU) and Service Level Agreements (SLA) with various organisations that involve or contribute to matters relating to the environment. Memoranda of Understanding are published on the EPA website when agreed with the other party.

European Environment Agency

The European Environment Agency (EEA) provides timely, targeted, relevant and reliable information to policy-making agents and the public across a wide range of environmental topics. Its country network, called the

European Environment Information and Observation Network (Eionet), is Europe's leading network for policy-relevant environmental and climate knowledge.

In 2022, the EPA worked to identify and enlist national experts to become involved in Eionet. Over 100 Irish experts from across 20 organisations were enlisted for the 13 Eionet groups, including those on climate, circular economy and biodiversity. These Eionet groups will work with leading European experts on shared environment and climate priorities.

Laura Burke, Director General of the EPA, continued to serve as the Chairperson of the EEA Management Board.

Citizen Science

The EPA continued to work with partner organisations on several citizen science projects. The GLOBE Programme - in partnership with the Environmental Education Unit of An Taisce continued with its nitrogen dioxide (NO₂) air monitoring campaigns at schools nationwide. In 2022, 368 schools nationwide registered to take part in air quality campaigns, with 40 schools participating in both campaigns in March and October (i.e. 328 unique school participants). For the October campaign, 178 schools participated.

2022 saw the continuation of the large-scale citizen-based nitrogen dioxide monitoring project 'Clean Air Together'. Over 1,700 citizen scientists participated in the first two phases of the project in Dublin and Cork city, with over 3,000 expressions of interest received from both campaigns. These citizen-based projects provide data in many areas that currently cannot be monitored and will be used to develop models to better forecast air quality in Dublin and Cork. The third phase of the project is planned for Galway city in late 2023 following the publication of the Cork city phase in early 2023.

The EPA continued to work in partnership with the National Biodiversity Data Centre (NBDC) on the Dragonfly Ireland (2019–2024) project with an 18% increase in dragonfly and damselfly records in 2021. Almost 4,000 records of dragonflies and damselflies had been submitted by 4 December and records have now been received from almost 80% of Ireland's land area with the remaining area being a priority for 2023.



The EPA also worked with the NBDC on the Explore Your Shore survey, with the objective of empowering and supporting volunteer citizen scientists to survey and record intertidal and coastal marine species. By end of 2022, 5,249 records of 645 marine species had been submitted to the NBDC.

The successful partnership with Wexford Libraries continued in 2022 with digital radon monitors being made available to borrow by Wexford library members. This collaboration was key in the delivery of the EPA's work under the EU project RadoNorm Citizen science Project. This project involved Citizen Scientists with radon levels above the EU reference levels in their households, helping to co-design a toolkit that shows people with high radon levels how to carry out work to reduce these levels on a 'Do-It-Yourself' basis.

Two in-person workshops were held in New Ross library in June and October that resulted in the participation of citizens to the co-create of the radon DIY remediation toolkit. The toolkit will include an instructional video and the equipment required to remediate.

Strategic Environmental Assessment

The EPA promotes sectoral engagement in Strategic Environmental Assessment (SEA) and the application of good SEA practice across all public authorities.

The EPA made 141 submissions to SEA-related notifications in 2022. Key submissions made in 2022 included submissions on: Ireland's Fifth Nitrates Action Programme, the Third Cycle of the River Basin Management Plan, Policy Statement for Geothermal Energy for a Circular Economy, and Ireland's Forest Strategy Implementation Plan. These are published on the [submissions section of the EPA website](#).

The EPA published [Good Practice Guidance on Strategic Environmental Assessment in the Water Sector](#) in September 2022, adding to the EPA's existing suite of SEA sectoral guidance notes.

The EPA continued to coordinate and provide secretariat support to the National SEA Forum, which facilitates information sharing and collaboration between national SEA authorities.

Environmental Policy Assessment Consultations

The EPA's Environmental Policy Assessment and Coordination (EPAC) work area manages the preparation of submissions to consultations. Key submissions made in 2022 included *inter alia* submissions on: The Draft National Food Waste Prevention Roadmap, Clean Air Strategy for Ireland, Forest Strategy and Forestry Programme, Review of the National Adaptation Framework, National Horticulture Strategy, Sourcing of Science Advice, Hydrogen Strategy for Ireland, and the Reform Programme for the Better Regulation of Food in Ireland. These submissions are available on the [submissions section of the EPA website](#).

NIECE

The Network for Ireland's Environmental Compliance and Enforcement (NIECE) provides a forum which encourages and supports organisations and individuals to work together to deliver improvements in priority environmental areas. Network membership, for the most part, includes local authorities, state agencies and government departments involved in the enforcement of environmental legislation, engagement and promotion.

The NIECE network remained very active throughout 2022 with many of the activities moving to in person and hybrid events. There were 13 Networks and four Working Groups operating under the NIECE umbrella in 2022. These covered themes across waste, water and air enforcement. A new

agriculture inspection working group was established. The members and groups worked to implement the National Enforcement Priorities for 2022 and later in the year fed into fine tuning the Priorities for 2023. Communications and networking continued through in person, hybrid and virtual meetings, workshops, training events, guidance preparation and the NIECE online portal. Local authority staff also participated in the National Air, the Circular Economy and the National Water conferences.

Irish Environmental Network

The Irish Environmental Network is a network of individual environmental Non-Government Organisations (NGOs) that work together to represent the views of the Irish environmental sector. The EPA meets with the Network at least annually and met with some members in June 2022. Topics discussed included: the Water Framework Directive, environmental liability directive, bogland restoration and waste water treatment.

Ireland's National Action Plan for Antimicrobial Resistance 2021-2025

EPA continued its participation in the National Implementation Committee for the Antimicrobial resistance (AMR) action plan group through attending inter-departmental and inter-agency meetings. Monitoring for antibiotics in water continued under the Water Framework Directive watchlist monitoring. EPA also continued to support action on antimicrobial resistance via calls for research projects on AMR as part of its 2022 call.

Water Quality

The EPA manages, assesses and reports on the analytical data generated from the Water Quality monitoring programme. Based on this information, EPA published the [Water Quality in Ireland 2016–2021](#) report, which sets out the latest assessment of Ireland's rivers, lakes, canals, groundwaters, transitional (estuaries) and coastal waters. This data is also used for annual reporting to the European Environment Agency's WISE (Water Information System for Europe) that provides water related information ranging from inland waters to marine across Europe, and for other water related activities.

The EPA is actively engaged in several expert working groups led by DHLGH. The EPA supports the Bathing Water Expert Group to develop an approach to protecting bathers' health outside the bathing water season. The Drinking Water Expert Group supports DHLGH to implement the recast Drinking Water Directive. With the support of external consultants and the expert group, the EPA developed an approach for protecting drinking water

quality in the catchment that is integrated with the existing drinking water and water quality protection structures in Ireland.

The EPA participated in the Department of Agriculture, Food and the Marine's (DAFM) Common Agricultural Policy (CAP) Consultative Committee and the DAFM Nitrates Expert Group and continues to engage constructively with DAFM through these and other mechanisms. EPA's key message is that emissions to water from agriculture need to reduce and that measures need to be integrated in a whole-farm planning approach, to meet water quality, biodiversity, climate, air and other environmental goals. The EPA's evidence base is used to inform the actions under the Nitrates Action Programme, and the new Agri-Environment and Climate Scheme (Acre) measures under CAP. The EPA meets with the Northern Ireland Environment Agency (NIEA) to discuss and share information on WFD monitoring, classification and reporting, including the status of cross-border water bodies and research projects of joint interest.

Air Quality

The Air Quality Health Information working group, chaired and facilitated by the EPA, provided a forum during 2022, to support: enhanced communication of accessible real-time information on air quality and health – linked to expansion of the monitoring network – modelling, including LIFE Emerald; and citizen science activities including Clean Air Together. This group includes stakeholders in environment and health such as the Health Service Executive (HSE) and enables discussion on air quality-related health topics.

Nuclear Safety

The EPA monitors developments relating to nuclear safety abroad and to keep relevant state organisations informed of any implications for Ireland. The EPA also takes an active role in national and international committees on nuclear safety. During 2022, the EPA monitored the evolving nuclear safety situation at nuclear facilities in Ukraine. In particular, the occupation of the Zaporizhzhya Nuclear Power Plant and events around the Chornobyl Exclusion Zone. The EPA liaised with relevant government departments and agencies and continued to keep them updated on nuclear safety matters in Ukraine, including any information coming to the EPA from international notification systems.

Reprocessing of nuclear waste at the Sellafield nuclear facility in the UK ceased in 2022. Representatives from the EPA and DECC visited the site in July and met with the UK's Office for Nuclear Regulation to develop a better understanding of the site.

Heads of the European Radiological Protection Competent Authorities

The Heads of the European Radiological Protection Competent Authorities (HERCA) is an association of the radiation safety authorities in Europe and aims to facilitate practical and harmonised solutions on important regulatory issues in radiation protection. HERCA provides an important forum for national authorities to share information and experience on the implementation of European legislation and international standards. In 2022, the EPA played an active role in this work with representatives on the HERCA Board of Heads as well as the Working Groups on natural radioactivity, emergencies, medical applications, non-medical sources & practices, and education & training.

European Nuclear Safety Regulators Group

The EPA is actively involved in the European Nuclear Safety Regulators Group (ENSREG) and its working groups on Nuclear Safety & International Cooperation and Transparency & Communications. During 2022, in addition to the regular ENSREG plenary meetings scheduled, the EPA attended several extraordinary plenary meetings that were convened as a result of the war in Ukraine and the safety of nuclear facilities in that country. EPA participated in ENSREG working groups to develop a review of fire protection at nuclear installations.

Bilateral meetings with the UK and France on radiological and nuclear matters

During 2022, the EPA hosted the UK–Ireland Contact Group on Radiological Matters in Dublin. Discussions included UK energy policy, updates on new nuclear build at Hinkley Point C in the UK, nuclear decommissioning of UK nuclear facilities and geological disposal of nuclear waste.

The EPA also met with the UK Environment Agency and the UK's Office for Nuclear Regulation, to discuss radiological and nuclear issues. These discussions centred on the new nuclear power plant under construction at Hinkley Point C, activities at Sellafield, the development of other new nuclear power plants (both large scale nuclear power plants and small modular reactors), and the development of a Geological Disposal Facility.

In September 2022, the EPA and the French Nuclear Regulator, ASN, met virtually to discuss the regulation of ionising radiation in both countries, nuclear emergencies, the situation in Ukraine and opportunities for future exchange between the two organisations.

International Obligations on Nuclear Safety and Radioactive Waste Management

The Joint Convention on the Safety of Spent Nuclear Fuel and on the Safety of Radioactive Waste Management is aimed at achieving and maintaining a high level of safety in spent fuel and radioactive waste management through a peer review process, which takes place every three years. The Joint Convention is relevant to countries with nuclear power programmes and countries, like Ireland, that do not have nuclear power but use radiation sources in medicine, industry, third level sector, etc. Ireland must demonstrate compliance with the Convention and undergo a peer review by the other contracting parties.

Representatives from the EPA and DECC attended the seventh review meeting of contracting parties which was held in-person at IAEA buildings in Vienna. The EPA presented Ireland's national report at the meeting which included updates since the submission of the national report and the impact of the Covid-19 pandemic. The Rapporteurs summary report of Ireland's progress identified highlights, challenges, planned measures to improve safety, areas of good performance and concluded that Ireland has made progress since the 6th review meeting.

The Convention on Nuclear Safety is another international convention the related to the safety of civil nuclear power plants at an international level. The Convention aims to achieve this through establishing fundamental safety principles for nuclear safety and undertaking a peer review process. All contracting parties to the Convention, including Ireland, must demonstrate compliance with the Convention and undergo a peer review by the other contracting parties. The eighth review meeting of this Convention was postponed in 2020 because of the Covid-19 pandemic and a joint eighth and ninth review meeting is planned for 2023. In 2022, the EPA prepared Ireland's national report for the submission to the meeting scheduled for 2023 and reviewed several national reports on compliance with the obligations of the Convention including those from the UK, France and Belgium.

Emergency Planning

In 2022, the EPA organised and facilitated a national nuclear emergency exercise to test Ireland's National Plan for Nuclear and Radiological Emergency Exposures.

The exercise was chaired by DECC with over twenty government departments and public bodies participating as well as observers from the UK and Northern Ireland. The exercise resulted in positive and ongoing engagement with several government departments and agencies including DAFM, Department of Health and Department of Foreign Affairs. On foot of the exercise, the EPA established a subgroup on nuclear and radiological emergencies to help address key recommendations from the National Nuclear Emergency Exercise. This work will inform the future revision of the national plan by DECC. The EPA

also used the national exercise as an opportunity to test the notification arrangements to the UK-Ireland bilateral agreement on early notification of a nuclear accident or incident of radiological significance.

The EPA also participated in several international emergency exercises organised by the European Commission and the International Atomic Energy Agency.

The EPA continued to be active participants in the Government Task Force on Emergency Planning and its subgroups. The EPA continued to support the Nuclear Energy Agency and the IAEA by participating in technical working groups, consultancy meetings and contributing to conferences.



5.2 Timely, Targeted Data and Information

The EPA provides independent, evidence-based information, in an open and transparent manner to inform decision making by a broad range of stakeholders including government, non-governmental organisations, state agencies, industry and the public. Data and information is provided in a timely and accessible manner, principally through online resources.

Ireland's Environment

The [Ireland's Environment web resource](#) was updated regularly during 2022 with new data across a range of environmental themes including climate, air, water, waste, land and soil, environment and wellbeing.

The EPA published [Ireland's Environment: Maps and Charts](#) in April 2022 as a supplement to the most recent State of the Environment report Ireland's Environment: An Integrated Assessment 2020.

The EPA's [My Local Environment](#) webtool was also updated and re-developed in 2022 with a new design, improved access for mobile devices and the addition of new data.

The webtool gives members of the public access to environmental information from a local context where users can search using an Eircode or address and the information returned is centred on that location. It also directs users to further information on the EPA website to learn more about the different topics presented.

Air Quality

In 2022, the [EPA's air quality webpages](#) were a valuable resource for the public, with their optimised functionality allowing easy access to real-time air quality information from the substantially expanded national monitoring network. This web resource provides a station-based Air Quality Index for Health (AQIH) that translates measured data into a colour-coded scale from green (Good) to purple (Very Poor) indicating how good, poor or very poor the air quality is. The scale is linked to health advice for the public (Figure 15) and those vulnerable to poor air quality.

		Accompanying health messages for at-risk groups and the general population	
Band	Index	At-Risk Individuals	General Population
Good	1	Enjoy your usual outdoor activities.	Enjoy your usual outdoor activities.
	2		
	3		
Fair	4	Adults and children with lung problems, and adults with heart problems, who experience symptoms, should consider reducing strenuous physical activity, particularly outdoors.	Enjoy your usual outdoor activities.
	5		
	6		
Poor	7	Adults and children with lung problems, and adults with heart problems, should reduce strenuous physical activity, particularly outdoors, and particularly if they experience symptoms. People with asthma may find they need to use their reliever inhaler more often. Older people should also reduce physical exertion.	Anyone experiencing discomfort such as sore eyes, cough or sore throat should consider reducing activity, particularly outdoors.
	8		
	9		
Very Poor	10	Adults and children with lung problems, adults with heart problems, and older people, should avoid strenuous physical activity. People with asthma may find they need to use their reliever inhaler more often.	Reduce physical exertion, particularly outdoors, especially if you experience symptoms such as cough or sore throat.

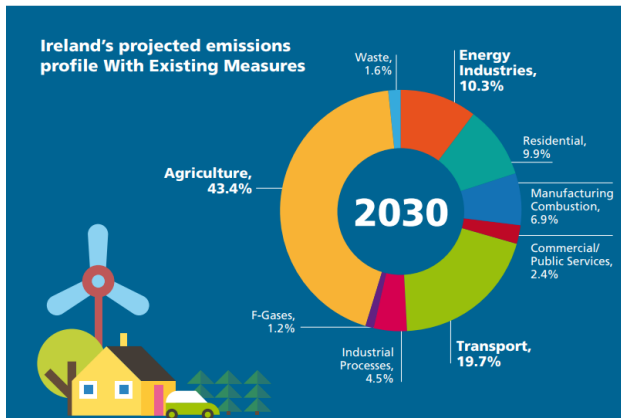
Figure 15. The AQIH and its linked health advice

As well as the website, the twitter feed, @EPAAirQuality, also kept the public up to date with air quality in their AQIH region.

Real-time data for selected air pollutants continued to be provided hourly to the European Environment Agency (EEA) for display on European air quality maps.

Emissions Inventories and Projections

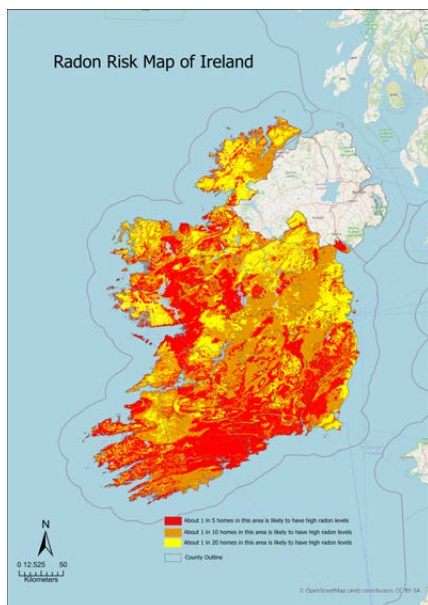
[Greenhouse gas and air pollutant emissions data](#) is made available on the EPA website. Along with detailed reports, graphs and tables there are short animations providing key highlights and messages together with infographics to communicate clear messages about the country's performance on climate action.



National Waste Statistics

The EPA's [National Waste Statistics web resource](#) continues to provide the most recent available waste data for Ireland to view and download. During 2022, online data releases were published for a range of waste streams including municipal, household, packaging, hazardous, composting, waste electrical and electronic equipment (WEEE), end-of-life vehicles, tyres and construction & demolition waste.

Radon



The EPA is the main provider of information and guidance to stakeholders in relation to radon gas. In May 2022, EPA published a new radon risk map on the [radon web resource](#). This is the first update of this map since 2002.

The map, based on work completed by Trinity College Dublin, the Geological Survey of Ireland and EPA, makes use of data on local geology and results of radon monitoring to better identify areas at risk of having high radon. The radon webpages provide advice on radon testing and remediation for householders, businesses and building professionals. In total, radon pages were viewed more than 510,000 times during 2022. EPA continues to provide a freephone radon advice number 24 hours a day, seven days a week.

Water Quality

The shared public facing website for the Water Framework Directive (WFD)



(www.catchments.ie) continues to provide a single source of water quality data and catchment management information in Ireland. Maps, dashboards, trends and charts are publicly available for almost 5,000 water bodies, as well as reports, assessments and stories of actions carried out by local community groups. The EPA continues to provide the most recent available water quality data, including groundwater quality for Ireland. The data can be download via the [EPA Geoportal](#).

The EPA also distributes the Catchments Newsletter to over 3,000 email subscribers and to local groups and individuals. Articles from the Newsletter are also promoted through the EPA's social media channels.

Water Levels and Flow

The EPA provides hydrometric data on river flows and lake and groundwater levels to support water resource and flood risk management and a variety of other activities. Data are available to view and download via the EPA's [HydroNet web pages](#).



The EPA continues the publication of monthly [National Hydrometric Bulletins](#). The bulletin provides a factual summary of river flows, lake levels and groundwater levels for a sample of surface water and groundwater hydrometric stations across Ireland. The bulletin also contains maps which show how flows and levels at stations across the country compare to the average for the month.

Drinking Water

The EPA's [Remedial Action List](#) (RAL) is a list of the public water supplies with the most serious problems. Action must be taken at these supplies to reduce the risk to the water quality. The RAL is updated twice per year and gives

the location of each supply, the reason the supply is on the RAL and the planned completion date for the remedial works.

Waste Water

The EPA’s Priority Urban Area List is a list of areas where action is needed to protect the environment and public health from the harmful effects of waste water discharges. Information on the EPA’s Priority Urban Area List is available on the EPA [Sewage Treatment Maps](#).

Beaches

The Beaches.ie website (www.beaches.ie) provides information about bathing water quality at Ireland’s beaches and lakes, including the recent water quality at each beach, any swim restrictions that are in place, weather and tide information. There is also a bathing water profile available for every beach that sets out the facilities, the known pressures and



any management plans that are in place. The website also publishes out-of-season monitoring data which are collected voluntarily by some local authorities. The site is regularly updated during the summer as results of monitoring become available from local authorities. Details of pollution incidents and remedial actions are also made available on a dedicated twitter feed (@EPABeaches).

National Radiation Monitoring Network

The EPA operates a National Radiation Monitoring Network consisting of equipment, located throughout the country, which continuously monitors ambient radiation levels and can detect radioactivity in Ireland, if any, following a major incident at an overseas nuclear facility. No increased levels of the ambient gamma dose rate above the normal fluctuations in background levels were observed during the year. Live data (Figure 16) is publicly available on the EPA, European and the International Atomic Energy Agency websites.

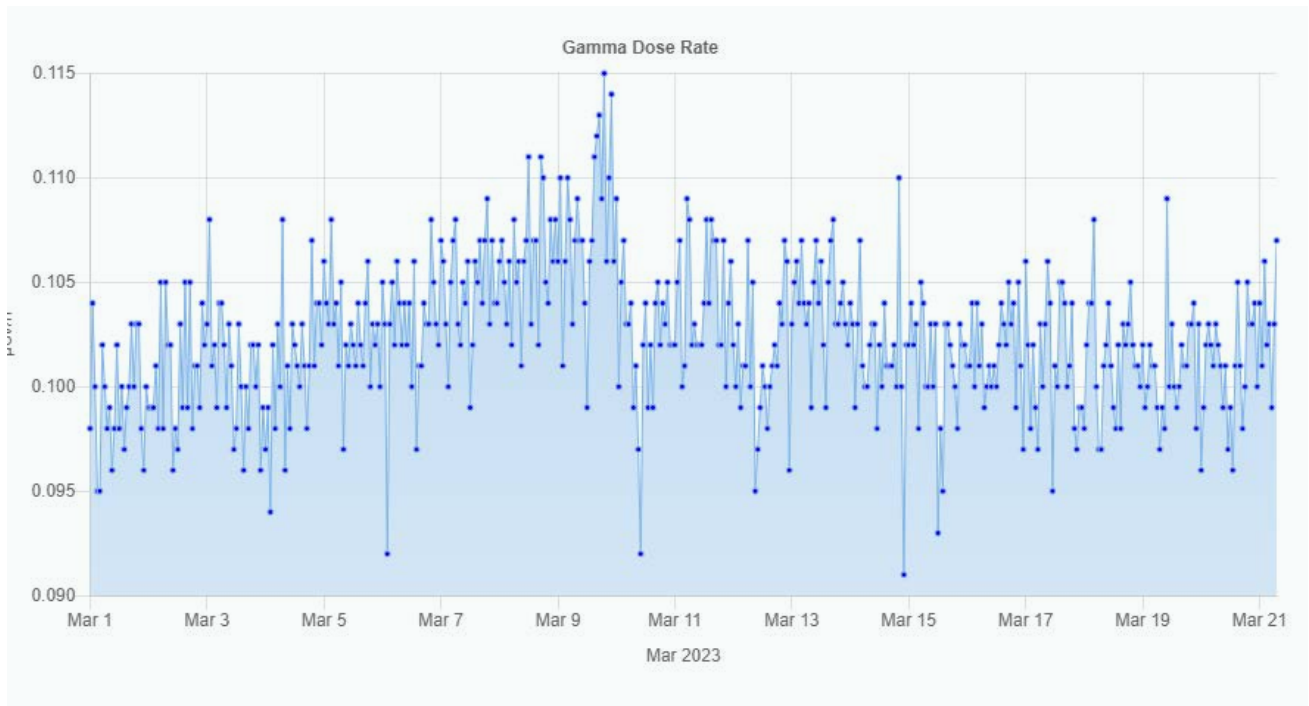


Figure 16. Ambient Gamma Dose Rate Monitoring at Dundalk, Co. Louth

Non-ionising radiation

In 2022, the EPA completed its monitoring programme of radio frequency electromagnetic field (EMF) measurements in 55 urban areas. This monitoring was undertaken to determine the exposure of citizens to this non ionising radiation. In all cases the levels of EMF measured were

significantly below international guidelines. The WHO has stated that below these guideline values EMF will not impact on health. EPA also maintained its [EMF web content](#) in response to public enquiries on 5G technology and mobile phone handsets. The EPA continued to respond to queries from the public in relation to EMF during 2022.



Open Data

The Open Data Directive is an EU Directive that encourages EU member states to make as much public sector information available for re-use as possible in an Open Data format. Open data format is data that can be freely used, re-used and redistributed by anyone – subject only, at most, to the requirement to attribute and share alike. The Directive introduces the concept of high-value datasets, defined as documents the re-use of which is associated with essential benefits for society and the economy. Under the Directive, the EPA will continue to report several datasets to Europe under three of the six high-value dataset thematic categories of geospatial, earth observation and environmental.

Under this Directive, any individual or entity can request EPA data to be provided in an Open Data format. The EPA received two such requests in 2022, the first request made to a public body in Ireland under this new legislation, though neither request was granted.

Data Portals

The EPA publishes information on a routine basis to its [Geographical Information System](#) portal, having regard to the principles of openness, transparency, interoperability, free and re-usable formats, which is then made available on the [EPA's Environmental Open Data Portal](#) and [Ireland's Open Data Portal](#). The EPA's Open Data portal is primarily intended as a resource for software developers wishing to write applications using EPA's Open Data REST APIs. Currently, there are six APIs available on the portal ranging from Bathing Water to Radiation Monitoring.

To date the EPA has made 409 datasets available on Ireland's Open Data Portal, with 198 of these being published in 2022. Collectively these have had over 92,900 views to date.

INSPIRE

The EPA worked closely with DHLGH during 2022 to implement the requirements of the INSPIRE Directive - establishing an infrastructure for spatial information in Europe to support Community environmental policies, and policies or activities which may have an impact on the environment. Full compliance was achieved in December 2022 for all 37 identified datasets held by the EPA.

Pollutant Release and Transfer Register

Ireland's *Pollutant Release and Transfer Register* (PRTR) provides a publicly accessible and searchable database which the public can use to search for facilities where specified industrial activities are carried out and are releasing pollutants or transferring waste more than specific thresholds. The register also fulfils the requirements of the Aarhus Convention as a simple means of affording access to information about environmental emissions and transfers.

Licensing and Permitting

As part of the EPA's policy of openness and transparency and in accordance with the Access to Information on the Environmental Regulations and various licensing/permit regulations, licensing files are available for public inspection. To provide greater access to all stakeholders, the EPA displays application files and related documents for public viewing purposes.

Information on Industrial Emissions (IE) and Integrated Pollution Control (IPC) applications

received since December 2004, and all Inspectors' reports and licences issued to-date are available. Since December 2017, all applications are received online and most interactions with the applicants and the public are electronic and published on the EPA website, including the receipt of submissions and objections.

During 2022, there was over 320,000 unique page views of the IE/IPC licence search web pages. By the end of 2022 there were 5,417 submissions received from the public using the user-interface.

Enforcement information

In 2022, the EPA continued to provide public access to enforcement information by publishing a summary of key enforcement data for industrial and waste licensed sites on the EPA website as well as updating the list of National Priority Sites (NPS) for enforcement. This information is updated quarterly. The NPS identifies the industrial and waste licensed sites with the poorest compliance records over the previous six-month period. The enforcement data provides a summary of site visits, complaints, compliance investigations, financial provisions, non-compliances and incidents. The online publication of key enforcement documents such as inspection and monitoring reports for licensed sites continued.



5.3 Communications and Outreach

Communicating key messages

Digital media

The EPA's website is the principal communication channel for disseminating information to the public with over 909,500 visits during 2022. Peaks in activity during the year corresponded with publication of reports and media coverage of environmental issues. High volumes of traffic to the website related to the retrieval of information on EPA-licensed sites; downloading publications; accessing information on licensing and enforcement; careers in the EPA and accessing information on environmental thematic areas including radon, climate change, air, water, waste, etc.

2022 saw continued growth and innovation in how the work of the EPA is portrayed across social media platforms. Content is now provided in several new formats including 'reels' and live videos, more engaging content was developed to attract and build new audiences. The EPA's Facebook page went live in 2022 and a presence on Mastodon was created.

Media relations

The EPA provides a 24-hour service to the media and during 2022 handled 753 media queries and issued 38 press releases. Environmental news stories relating to the EPA featured in over 3,570 newspaper articles throughout the year.

Outreach activities

The EPA has continued to play an important role in raising levels of awareness and supporting initiatives that increase public engagement with environmental issues and those that particularly target younger audiences.

Science Week encourages people of all ages and from all walks of life to be informed, inspired and involved in STEM events and the EPA participated in a variety of events in 2022, once again delivering the EPA's climate change lesson as part of our partnership with Junior Achievement Ireland. The EPA also again hosted the 'Story of Your Stuff' Competition, aimed at empowering young people and raising environmental awareness.

In 2022, the EPA again supported the "10 Things to Know About..." TV Series that aired on RTE. The eighth season was a six-part series highlighting some of the outstanding work being undertaken by Irish scientific researchers across a range of disciplines including Insects, Sports Science, Hemp, Circular Economy, Heat and Mental Health.

As part of the EPA's corporate sponsorship commitments, many local initiatives were supported that raise awareness about environmental issues or the work of the EPA. The EPA also partnered with and supported a number of other diverse outreach initiatives including:

- ▲ Partnering with Engineers Ireland's on their STEPS programme which aims to foster STEM skills development in Ireland
- ▲ Again, supporting the 'Environmental Resilience' speaker series hosted by the Institute of International & European Affairs'
- ▲ Again, partnering with ECO UNESCO, supporting the Young Environmentalist Awards and other initiatives.
- ▲ Sponsoring the environmental award at the BT Young Scientist competition
- ▲ Sponsoring the Environmental Journalism Award for the National Student Media Awards.

Story of Your Stuff

The awards ceremony for the sixth 'Story of Your Stuff' competition for secondary schools took place in April 2022. The competition received 210 entries with students creatively telling their stories, through visual media, of the environmental impact of everyday items or activities. A student from St Columba's College in Dublin won the overall prize with a topical video exploring the environmental lifecycle and impact of tissues. The Climate topic prize was won by Saint Eunan's College, Co. Donegal for their entry 'The Story of Beef'. The Irish-language prize was won by Gaelcholáiste Charraig Uí Leighin, Co. Chorcaí for its entry, 'Scéal Certíní' which looked at wet wipes. Information on all of the winning entries including the climate topic prize and the Irish language prize can be found on the [Story of Your Stuff website](#).



Junior Achievement Ireland programme

For the sixth year the EPA continued its partnership with Junior Achievement Ireland (JAI) in 2022, with 28 staff delivering a selection of JAI programmes to 989 students in 32 schools.

For the third year, the EPA climate change lesson was delivered during Science Week in November. Twenty-six EPA volunteers delivered the workshop to 747 students from 24 schools across 11 counties. The EPA's climate change lesson was also delivered by volunteers from other organisations, with 21 business volunteers, from 12 different organisations, delivering to 575 students. The EPA directly engaged with over 1,564 students across Ireland

as part of this partnership, delivering key environmental messages and knowledge along with reinforcing messages about the value of education.

Environmental queries

The EPA provides an Environmental Queries Service to its stakeholders including the public, students, local authorities and government departments. The service operates in accordance with the commitments set out in the EPA Customer Charter. The service handled 2,047 queries during 2022. The main areas of concern to the public were: Waste, Wastewater, Air, Climate Change and Drinking Water Quality.

Conferences and exhibitions

The EPA supported several public engagement events during 2022. National and local events included the BT Young Scientist & Technology Exhibition (where the EPA also presented a Special Environmental Award), the 90th National Ploughing Championships and regional Science Festivals. These events provided an ideal opportunity to raise awareness of, and engage the public's support in, environmental issues.

Outlined below are key conferences and events held during 2022.

EPA National Climate Conference

The EPA National Climate Conference was held in Croke Park on 1 June, 2022 and livestreamed as a hybrid event. The conference was entitled "Creating Ireland's Climate Future". The EPA's data on Greenhouse Gas Emissions Projections was delivered as part of the event. The conference set out the vision for a climate-neutral and resilient Ireland by 2050 and how that vision will be achieved in terms of strategic planning, built and natural environments. It also focused on how we scale up and speed up the implementation of climate actions. The event was opened by Eamon Ryan TD, Minister for Transport and the Minister for the Environment, Climate and Communications and included keynote speakers such as Dr Debra Roberts, co-author of the IPCC WGII report, Paddy Hayes, Chief Executive of ESB Group and Paul Hogan from DHLGH. A recording of the [Climate Conference can be viewed on the EPA's YouTube channel](#)

Climate Change Lecture Series

The Climate Change Lectures were delivered as hybrid events in 2022. The first lecture was delivered on 27 April 2022 in the Epic Centre by Dr. Anthony Leiserowitz founder and Director of the Yale Programme on Climate Change Communication who partnered with the EPA on the Climate Change in the Irish Mind Study. The lecture

focused on the role of communications in driving climate action. The event was moderated by Dr John Bowman. A recording of the [first climate change lecture can be viewed on the EPA's YouTube channel](#)

The second lecture was held on 26 October 2022 in Cork City Hall, in partnership with Cork City Council and delivered by Professor Neil Adger, Professor of Human Geography at the University of Exeter. Prof. Adger spoke about the how adapting to climate risks can make us happier and healthier, focussing specifically on flood resilience in the context of the challenges faced by Cork City. The event was moderated by Ella McSweeney. A recording of the [second climate change lecture can be viewed on the EPA's YouTube channel](#)

Circular Economy Conference

The annual Circular Economy Programme Conference was held as a hybrid event (Aviva/online) on 22 September 2022. This full day event had four sessions: policy focus; regulation for circularity; statistics/indicators; implementation (circular solutions).

EPA Water Conference

The EPA held its Annual National Water Conference in May as a hybrid event in Salthill, Galway with over 800 attendees. Speakers shared their knowledge on how to protect & improve water quality and highlighted case studies from around Ireland. Topics included the latest on policy, agriculture, physical changes to waterbodies, health and water services, and local measures and solutions in action. [Presentations from the conference are available on the EPA's YouTube channel.](#)

National Air Event

The National EPA Air Event, 'Let's talk about Clean Air', was held in Kilkenny on 23 November 2022. This in-person and online event was an opportunity for those interested in air quality to learn more, from a range of speakers, about recent developments, emerging evidence regarding health impacts and the actions being taken to improve air quality. Speakers included Eamon Ryan TD, Minister for Transport and the Minister for the Environment, Climate and Communications, as well as officials from DECC and representatives from the EPA, the World Health Organisation and local authorities, amongst others. [Presentations from the air event are available on the EPA's YouTube channel](#)

Environment Health and Wellbeing Conference

Managing Risks in our changing environment was the theme of this year's conference, that was held in collaboration with the Health Service Executive (HSE) and

the Economic and Social Research Institute (ESRI). The conference is aimed at policy makers, non-governmental organisations, and academics.

The conference heard about managing a broad range of environment and health risks and challenges that Ireland faces in a changing environment that need a co-ordinated and integrated response. The conference examined how Ireland can respond to these converging crises and what is being done to create a healthy environment and society. It also examined, at a local level, at how environment and health risks can be tackled. [Presentations from the conference are available on the EPA's YouTube channel.](#)

Environment and Law Conference 2022

Convened by the Irish Centre for Environmental Law and the EPA, the joint conference was held on 30 November 2022 in King's Inns, Dublin. Ms. Laura Burke, Director

General EPA and Ms. Margaret Gray SC KC, provided opening remarks which set the scene. Legal experts considered several contemporary themes relating to environmental law enforcement including protecting the natural environment, current enforcement issues and emerging matters in environmental law research, challenges in access to justice and water and climate litigation.

EPA/IIEA Lecture Series

The EPA continued its partnership with the Institute of International and European Affairs (IIEA) on the 'Environmental Resilience' lecture series. This series hosted lectures by international experts, to address the most critical environmental issues of our time including: tackling air pollution, zero-waste design, mobilising climate action, and ecological economics.

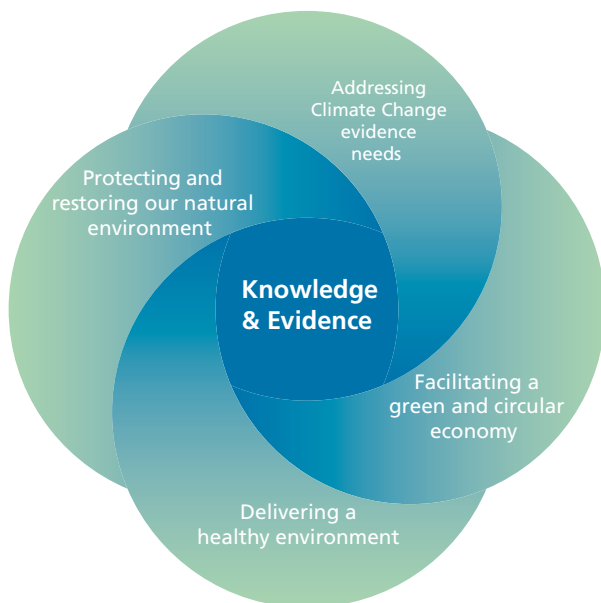


5.4 Research

The EPA manages an environmental research programme that delivers essential scientific support for environmental policy development, implementation and broader decision making. The scope of EPA-funded research is informed by its relevance to policy and its alignment with the key activities of the EPA. This reflects the vision of [EPA Research 2030](#) of 'putting science and innovation at the centre of environmental protection in Ireland through the development and proactive transfer of knowledge'.

EPA Research is delivered with a thematic structure comprising four interconnected hubs, namely:

- ▲ Addressing climate change evidence needs.
- ▲ Facilitating a green and circular economy.
- ▲ Delivering a healthy environment.
- ▲ Protecting and restoring our natural environment.



Research Management

At the end of 2022, the EPA was managing 247 EPA Research & Collaborative projects, as well as administering another 84 awards from strategic partnerships and event support schemes. The [EPA Research 2030 Action Plan for 2022](#) was published in March 2022 and includes measures of the Key Performance Targets and Indicators.

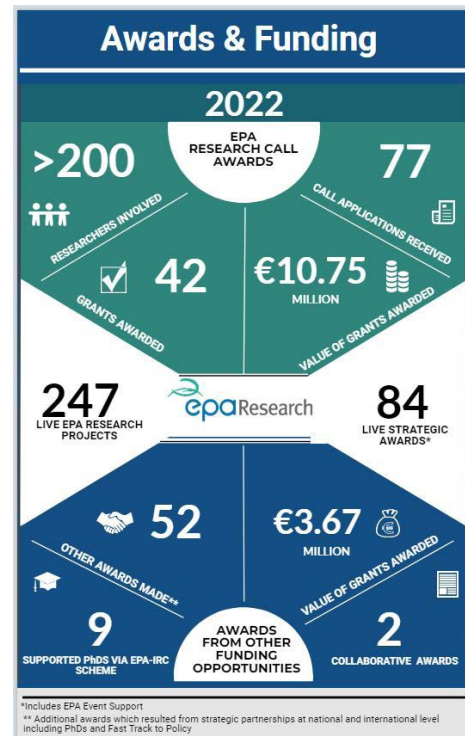
New Awards in 2022

During 2022, a total of 94 awards were made:

- ▲ 42 awards (€ 10.75 million commitment) under the 2022 EPA Research Call.
- ▲ Seven awards (€ 0.6 million commitment) under the 2022 Innovation and Demonstration Call.

- ▲ 14 awards (€ 0.04 million commitment) under the Event Support scheme.
- ▲ 31 awards (€ 3 million commitment) under national and international strategic partnership.

Further details on the [2022 EPA research awards](#) are available on the EPA website.



EPA national Strategic Partnerships

Two awards were made in June 2022 as part of the 2021/2022 Fulbright-EPA awards.

Nine scholarships were awarded in June 2022 under the 2021/2022 EPA-Irish Research Council (IRC) Postgraduate Scheme.

The tri-agency [DOROTHY](#) Research Fellowship programme (involving the IRC, Health Research Board and EPA, co-funded by the European Commission) launched its first joint call on public health crises, with eight proposals recommended for funding.

The EPA embarked on a new strategic partnership with Science Foundation Ireland (SFI) as part of the SFI-IRC [Pathways Programme](#), supporting early-stage researchers.

Other ongoing strategic partnerships included the [EPA-ESRI Research Framework](#) and the [EPA-IPA Research Framework](#).

EPA international Strategic Partnerships

Under Horizon Europe, the EPA is involved as national contact point for [Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture and Environment](#), working closely with the other contact points (Enterprise Ireland, Marine Institute, Department of Agriculture, Food and the Marine). Under the 2022 Call for Cluster 6, the Irish Research community secured €26.5 million with 36 successful proposals, of which seven (€3.68 million) have environment as the primary focus.

The first Joint Transnational Call under the [European Partnership Water4All](#) is on-going and focuses on the management of water resources for increased resilience, adaptation and mitigation to hydroclimatic extreme events.

The first Joint Transnational Call under the [European Partnership Biodiversa+](#) focused on “supporting the protection of biodiversity and ecosystems across land and sea”. The EPA is funding two related projects with Irish partners, with co-funding from the Department of Agriculture, Food, and Marine, The National Parks and Wildlife Service and the European Commission. The second Joint Transnational Call on biodiversity monitoring, is on-going.

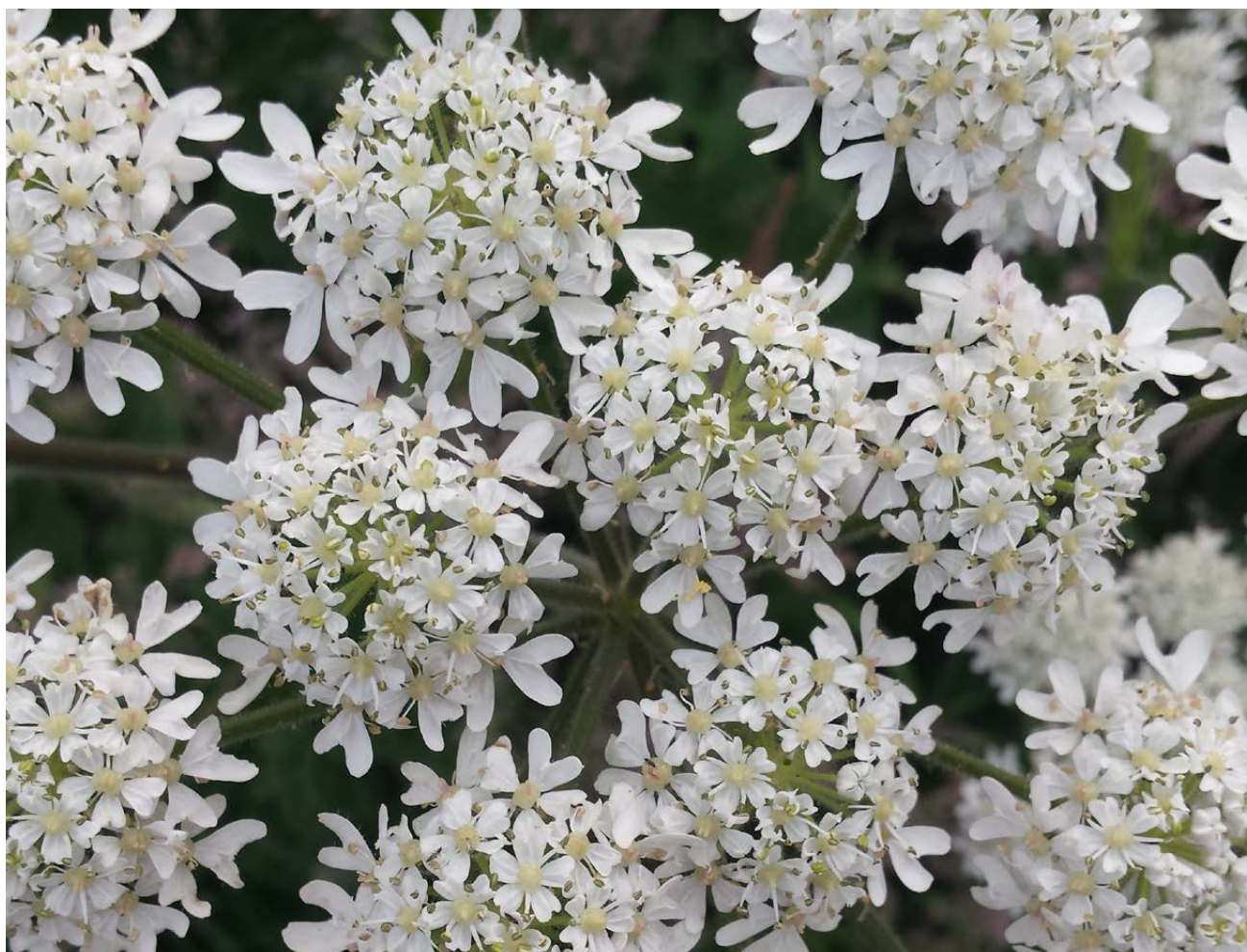
The EPA is also a partner in the [European Partnership PianoForte](#), which is a partnership for radiation protection research.

The EPA continued to chair the Climate Joint Programming Initiative and successfully participated in the Horizon Europe MAGIA proposal as a partner.

In 2022, the EPA started discussions with the [PARC partnership](#) (Partnership for the Assessment of Risks from Chemicals) regarding joining the consortium.

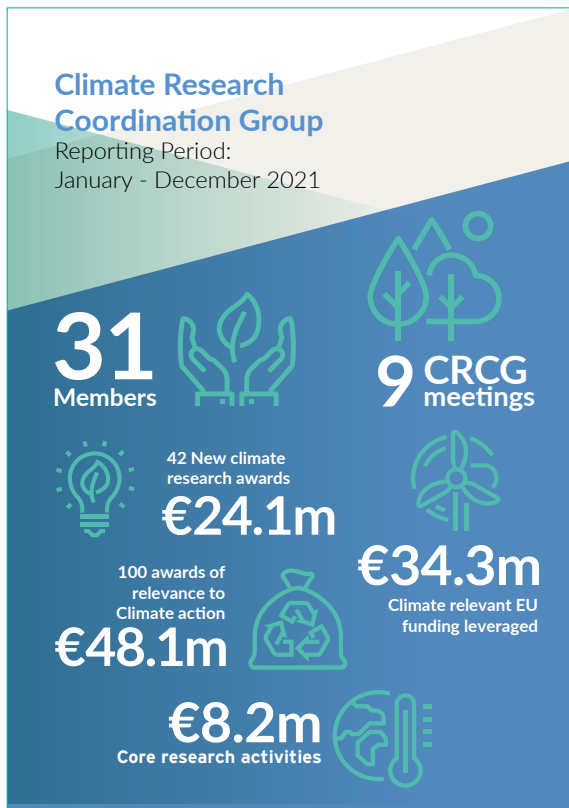
Research Linkages

The EPA participates in the Implementation Group for ‘Impact 2030’, the new national Research and Innovation Strategy published in 2022. The EPA also continued its participation in the national Research Integrity Forum; the National Open Research Forum; and in the Gender-related and Engaged research fora. The EPA endorsed Ireland’s [National Action Plan for Open Research 2022-2030](#), which was launched in November 2022.



Research coordination

The EPA-led [National Environmental Research Coordination Group](#) (NERCG) met twice in 2022. The Library & Research Service of the Houses of the Oireachtas joined the NERCG in 2022.



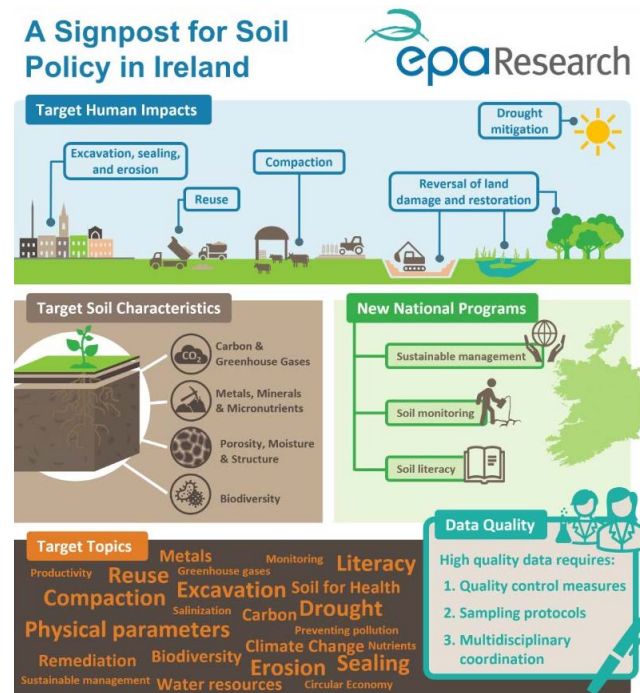
The EPA-led Climate Research Coordination Group (CRCG) met four times in 2022. The [fourth Annual Report of Activities \(2021\)](#) was published in September 2022. Work is progressing on identifying metrics for climate research.

The first five-year assessment of climate research is in preparation and scheduled to be published in 2023.

Research Communication & Knowledge Transfer

The EPA published 27 new research reports and 19 Project Highlights Videos during 2022. These are available on the [Research Publications section of the EPA website](#).

In addition, the first Evidence Synthesis Report from the EPA's Fast-Track to Policy Funding Scheme was published in June 2022: [A Signpost for Soil Policy in Ireland](#) (co-funded by the Geological Survey Ireland).



The EPA piloted new approaches to publicising the EPA research call in 2022, including a pre-announcement flyer and a webinar for applicants.

Significant progress was made in the development of strategic Knowledge Transfer activities for EPA-funded research in 2022, with the support of ERINN Innovation Ltd. These Knowledge Transfer activities are focused on transferring the scientific evidence generated by EPA-funded research into the policy system in Ireland, to better inform environmental policy development and implementation. Approximately 70 EPA-funded research projects were included in the first phase of implementation. Training for both researchers and the EPA on Knowledge Transfer was rolled out in 2022, designed to support the EPA in delivering impactful research that is readily usable by end-users.





6

Culture of Excellence

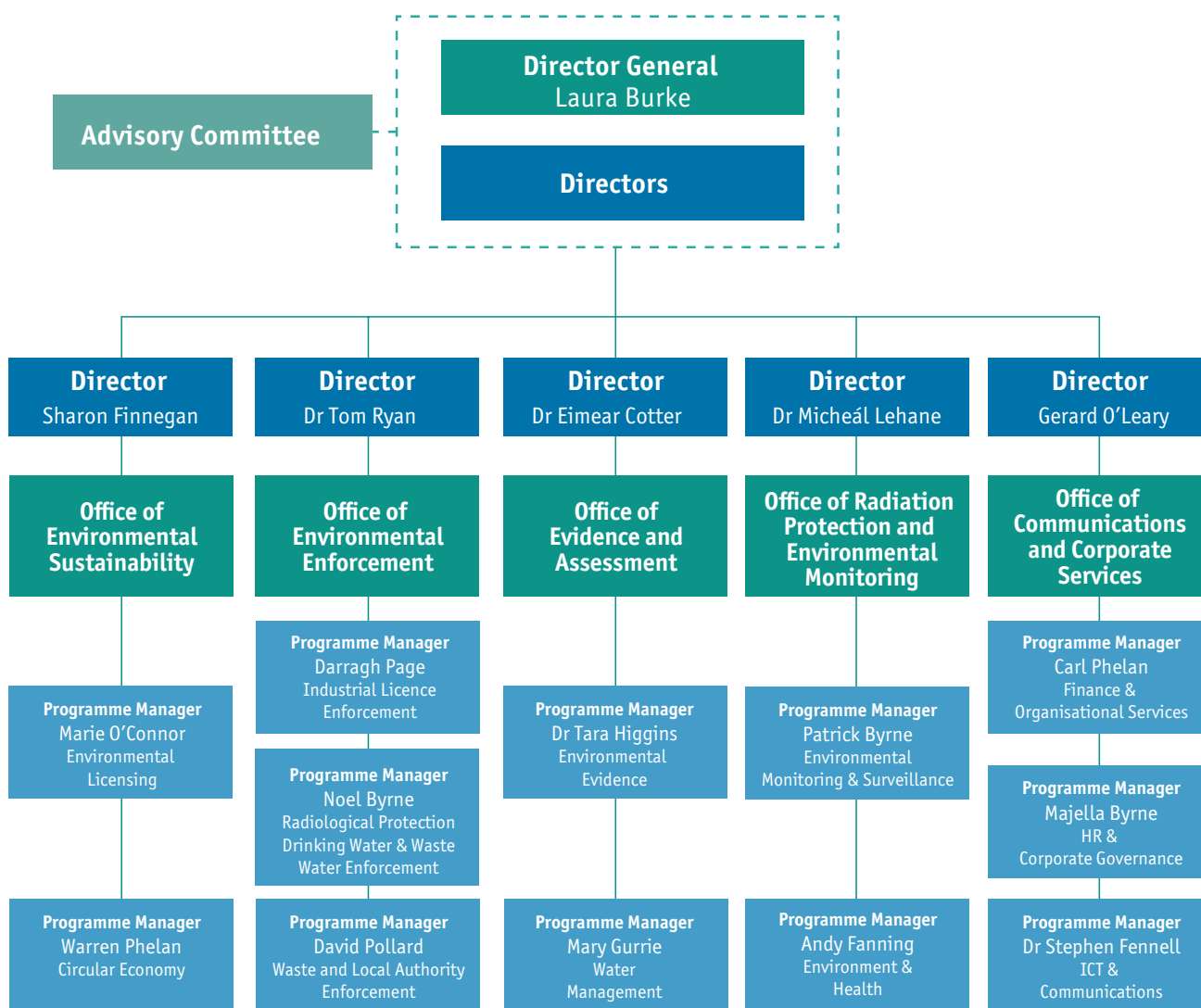


We create a culture of excellence where people are supported and can give their best

We live our values and behaviours in a supportive, inclusive and flexible workplace, to deliver public value and our vision

6. CULTURE OF EXCELLENCE

6.1 Organisation Structure



Board of Directors



Pictured (left to right). Dr Micheál Lehane (Director, Office of Radiation Protection and Environmental Monitoring), Dr Eimear Cotter (Director, Office of Evidence and Assessment), Dr Tom Ryan (Director, Office of Environmental Enforcement), Ms Laura Burke (Director General), Mr Gerard O'Leary (Deputy Director General and Director, Office of Communications and Corporate Services), and Ms Sharon Finegan (Director, Office of Environmental Sustainability).

Board meetings

The EPA Board comprises six full-time Executive Directors. A total of 50 Board meetings were held in 2022: 14 general meetings, at which corporate policy, governance, strategy, finance and planning issues were dealt with, and 36 technical meetings, at which licence applications, prosecutions and operational issues were dealt with.

EPA Advisory Committee

The EPA is assisted by an Advisory Committee with a term of office of three years. The 12 members are nominated by prescribed organisations and appointed by the Minister for the Environment, Climate and Communications. The Advisory Committee has a wide range of advisory functions including making recommendations to the EPA and/or the Minister. The Director General of the EPA is, ex officio, a member and Chairperson of the Committee. Ms Aebhín Cawley was re-appointed on 1 July 2022 for a further three-year period.

Appointees from prescribed bodies

Ms Sadhbh O'Neill (nominated by the Irish Environmental Network)
 Professor John Wenger (nominated by the Institute of Chemistry of Ireland)
 Professor Frances Lucy (nominated by the Environmental Sciences Association of Ireland)
 Ms Elaine Mahon (nominated by the The Wheel)
 Dr Brendan Dunford (nominated by Heritage Ireland)
 Mr Thomas Cooney (nominated by the Irish Farmers Association)

Ministerial appointees

Professor Aoife Foley
 Ms Aebhín Cawley
 Ms Yvonne Mullooly
 Ms Elaine Nevin
 Dr Niamh Lynam Lennon

Chairperson

Ms Laura Burke, Director General, EPA

6.2 Human Resources

Recruitment

During 2022, the EPA received sanction for an additional six posts, bringing the EPA's approved staff complement at 31 December 2022 to 454. The EPA has 182 staff located at its headquarters in Wexford, with the remainder strategically located in the five Regional Inspectorates and two Hydrometric Offices throughout the country.



EPA Staff at Agency Day, 2022

Internships & Placements

The EPA continued to engage with a wide range of third-level educational institutions under the Internship Programme to ensure that the student intake is of the highest calibre and that students are afforded an opportunity to work in a highly effective and complex public service organisation. A total of 20 paid internship were offered and filled during 2022. In addition, the summer student placement programme continued in 2022 with 20 third-level students provided with an opportunity to put into practice and enhance the theory and skills they have learned during their coursework in a relevant workplace setting, while adding value to the organisation.

Strong leadership

The Senior Management Network (SMN) comprising Directors, Programme Managers and Regional Managers has been in place since 2014 and meets at least five times each year. The SMN provides an oversight role in relation to the delivery of the EPA Strategic Outcomes and leads by example by actively demonstrating how it lives the EPA's cultural values and behaviours of Professional, Trustworthy, Customer & Stakeholder Focussed, Collaborative and Innovative. During the first half of 2022, the focus of the SMN's work was on the finalisation of the new five-year Corporate Strategic Plan. In addition, the SMN also participated in a review of the EPA's 2021 Employee

Engagement Survey findings; considered the role of social media in the public sector and how it could benefit the EPA in reaching new audiences; the development of the annual work programmes to support the implementation of the new Strategic Plan; as well as continuing to develop and support senior management leadership across the EPA.

Partnership

During 2022 the EPA's Partnership Committee, Meitheal, continued to ensure there was a collaborative approach to building a more productive and innovative workplace. This culture of collaboration is key to delivering on EPA's goals, a workplace that is customer focused, responsive to employee needs, and proactively diverse.

Safety, health and welfare at work

The EPA recognises that safety, health and welfare are essential requirements of its operations. In this regard, it is EPA policy to conduct its business in a manner that protects the safety, health and welfare of staff, visitors, contractors, and members of the public who may be involved in or with EPA activities. The EPA provides, in so far as is reasonably practicable, a safe place of work and a safe system of work for its staff in accordance with the Safety, Health and Welfare at Work Act, 2005 and associated regulations.

6.3 Information and Communications Technology

The EPA uses its Information and Communications Technology (ICT) services to support reform and innovation across the organisation. These services are key to delivering timely and targeted data and information to meet its stakeholder needs, as set out in its corporate strategy. A Board subcommittee oversees the governance and strategic direction of ICT-enabled change. The key priorities for ICT investment are in areas such as information provision, data management, online and shared services, security, leading-edge technologies and building internal ICT capabilities.

Information security

Information is a key asset of the EPA and the protection of the EPA's information, technologies and applications is critical to ensuring the EPA can continue to carry out its functions. Within the EPA, information security practices encompass three main elements: confidentiality, integrity and availability. Accordingly, the EPA has introduced policies and technologies in the last few years to assist in the protection of its assets, and to meet the growing demands in the information security space which are periodically reviewed.

In 2022, the EPA commenced an assessment against the National Cyber Security Centre Baseline Standards, which are a set of standards that aim to improve the resilience and security of public sector ICT systems.

A new approach to raising awareness around cyber security was implemented in 2022, for staff and anyone who uses EPA systems, with regular phishing exercises and security training carried out.

2022 again saw significant successful cyberattacks both within Ireland and worldwide. The EPA worked closely with the National Cyber Security Centre (NCSC) throughout the year to strengthen its defences and successfully implemented NCSC guidance in relation to major cyber incidents and alerts during the year, including multiple guidance notes in relation to the on-going situation in Ukraine.

New ICT systems and technologies

Information and communications technologies are constantly changing and improving. The EPA endeavours to keep up to date with best practice in ICT; to ensure that the best technical options are selected, to maximise use of new technology, and to ensure value for money in ICT investments.

Significant work continued in 2022 to support staff during the pilot on blended working arrangements by providing them with similar ICT environments as if they were working in the office.

During the year the EPA also focused on preparatory work to start developing in-house applications in the 'Cloud', including putting in place the necessary governance and oversight arrangements. As the EPA moves more of its applications to the Cloud in the coming years, it will be able to offer improved, more secure and resilient services to teams across the organisation.



6.4 Governance

Corporate governance

Corporate governance is vitally important for the EPA in effectively discharging its statutory remit. It ensures a framework of structures and processes is in place to allow Board members to assess management and corporate performance while ensuring members also meet their own governance responsibilities objectively and effectively. It is the policy of the EPA to comply fully with governance and accountability obligations and to follow best practice in so doing.

The Code of Practice for the Governance of State Bodies 2016 (the Code) is mandatory for all State Bodies and came into effect on 1 September 2016. During 2022, the EPA continued to implement governance requirements and maintained compliance with the Code. A Corporate Governance Unit is in place with responsibility for overseeing and reporting on the implementation of and compliance with the Code.

Requirements arising from the Annex to the Code, on Gender Balance, Diversity and Inclusion recommends that State Boards achieve 40% representation of women and of men on State Boards. On 31 December 2022, the EPA Board included a gender balance of 50% female and 50% male.

Risk management

The EPA is committed to managing its risks and has a risk management framework in place which complies with the provisions of the Code of Practice for the Governance of State Bodies.

An Executive Risk Committee (ERC) (chaired by the Chief Risk Officer) is in place and is made up of two Directors and five Programme Managers. In addition, an Audit and Risk Committee (ARC) is also in place with the membership comprising six external members and one EPA senior manager. The ERC and the ARC together have a responsibility for providing assurance to the EPA Board and advising on risk management (see Figure 17). The ERC meets on a regular basis and met four times in 2022. The ARC meets on a regular basis and met five times in 2022. Risk Management is a standing item at the ARC meetings.

A comprehensive review of the EPA’s Risk Management Processes was completed in 2022 culminating in a new risk management policy. A revised Corporate Risk Register (CRR) and Office Risk Registers (ORR) are now in place that better meet the needs of the organisation. The Corporate Risk Register is more dynamic and identifies the key risks facing the EPA. The Corporate Risk Register is monitored, maintained and reported on by the ERC, reviewed by the ARC and presented to the EPA Board for approval.

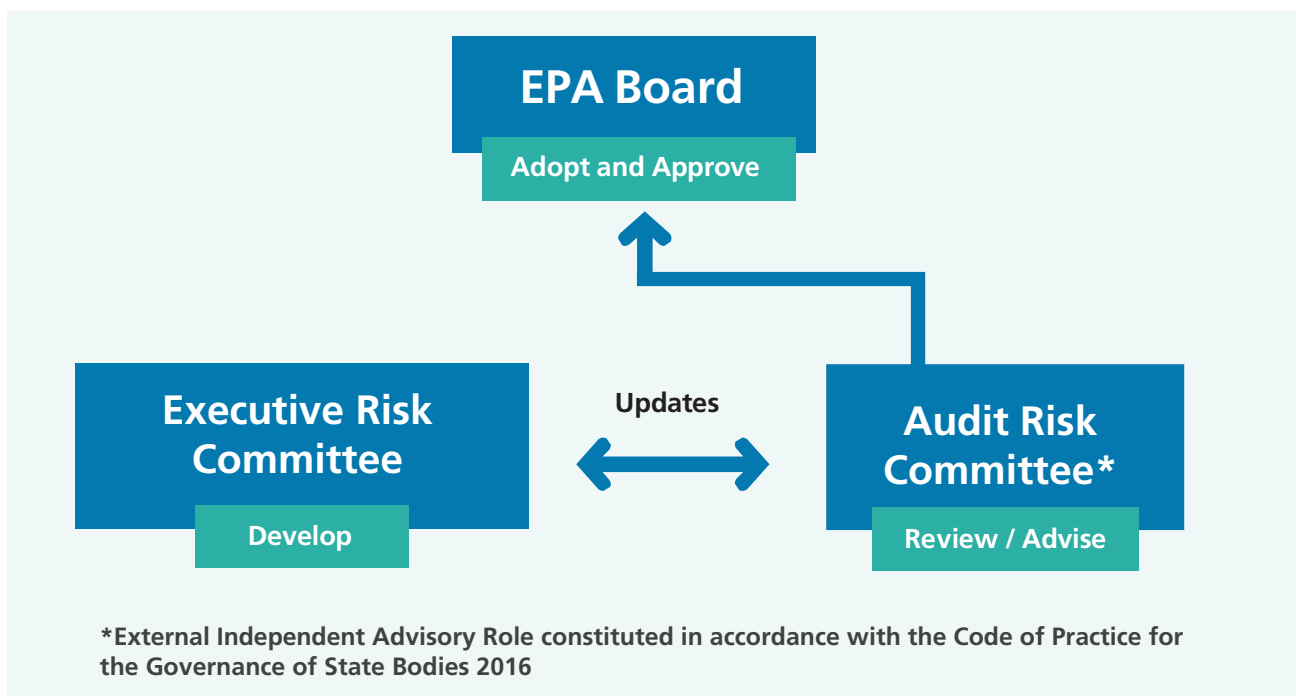


Figure 17. Relationship between the Executive Risk Committee, the Audit & Risk Committee and the EPA Board.

The EPA carried out an assessment of the EPA's risks using the processes outlined in its Risk Management Policy. The key risks managed by EPA in 2022 are summarised in the table below:

No.	Risks Managed	Response
1	Risk of serious injury to staff member(s) due to working in high risk environments.	<p>The EPA continued to embed and review the Health and Safety Management System throughout the organisation in 2022 and a Board Sub Committee continued to monitor the implementation of the Health and Safety Management System.</p> <p>There was continued ongoing collaboration with the Health & Safety Authority to identify improvements in health and safety issues at local authority and industrial sampling and inspections sites.</p> <p>The EPA continued to roll-out the IT solution for Safety Management System and continued to manage staff transition back to the Office in the context of the uncertainty around Covid-19.</p>
2	Risk of loss of ICT systems or critical data due cyber security related incident (incl. human error).	<p>The EPA has ICT Security Policies and Procedures in place and ran regular ICT Security awareness training for all staff. Controls to mitigate against threats were in place in 2022, which were supported by the National Cyber Security Centre in DECC. The EPA has a dedicated Information Security Officer and carried out regular information security testing, including vulnerability assessments and penetration tests in 2022.</p>
3.	The risk of a failure to respond appropriately to an international Nuclear Incident.	<p>The EPA updated the EPA Plan on Nuclear Emergencies in 2022 and trained EPA personnel on their roles under the Plan. In addition, EPA, in conjunction with DECC, organised a scheduled National Exercise under the Government's National Plan for Nuclear and Radiological Emergency Exposures in September 2022. This exercise included participation of government departments and agencies to improve clarity on organisational roles and responsibilities under the Plan. The EPA also progressed the re-development of the National Radiation Monitoring Network, which commenced in 2020 and will be completed in 2023. The network will improve the EPA's ability to detect the arrival or non-arrival of radioactivity associated with any radioactive discharge.</p>

Internal audit

During 2022, the internal audit programme was actively progressed and recommendations from previous audits were implemented. In accordance with the Code, a review of the effectiveness of the Audit and Risk Committee was carried out in 2022.

Strategic Plan

In May 2022 the EPA published a new five-year Strategic Plan 2022–2026 which sets out what it intends to achieve over the next five years in delivering its mandate and its purpose to protect, improve and restore Ireland's environment through regulation, scientific knowledge and working with others. The Plan identifies five Strategic Outcomes which will inform the EPA's work programmes in the coming years:

- ▲ We are an effective voice for Ireland's environment
- ▲ We use our knowledge to drive climate action
- ▲ We deliver a protected and healthy environment
- ▲ We promote the transition to sustainable production and consumption
- ▲ We create a culture of excellence where people are supported and can give their best

The Senior Management Network, comprising of the EPA Directors, Programme Managers and Regional Managers provides oversight of the implementation of the Plan on an ongoing basis.

Access to information

The EPA is committed to be an open and accessible organisation. The Freedom of Information (FOI) Act, 2014, as amended, and the Access to Information on the Environment (AIE) Regulations are two methods of accessing information for those members of the public who have not been able to access the information they require under alternative routes. The EPA publishes as much information as possible in an open and accessible manner on a routine basis outside FOI, having regard to the principles of openness, transparency and accountability. This allows for the publication or giving of records outside of FOI, provided that such publication or giving of access is not prohibited by law.

During 2022, the EPA received 58 FOI requests and a further three were carried over from 2021. Under the AIE Regulations, the EPA received 79 requests and nine were carried over from 2021. Figure 18 illustrates the Decisions issued on the requests processed during 2022. Where requests were refused, the information refused was either: personal; not environmental information (AIE); was formulated in too general a manner; was not held by the EPA; could prejudice a prosecution; did not exist; or the requests were voluminous or manifestly unreasonable.

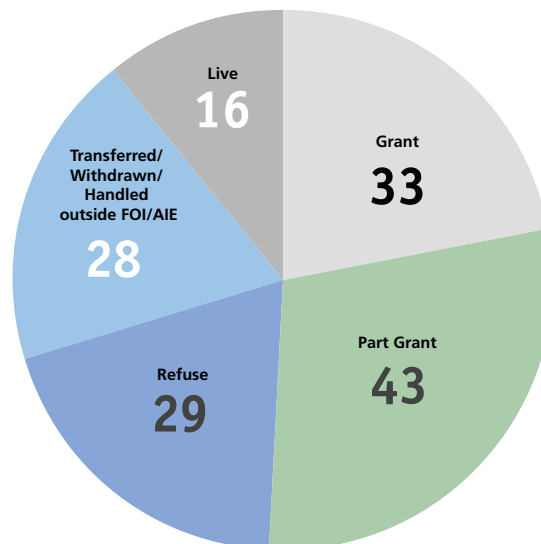


Figure 18. FOI and AIE Decisions, January to December, 2022

Protected disclosures

Section 22 of the Protected Disclosures Act 2014 requires the publication of an Annual Report each year relating to the number of protected disclosures made in the preceding year and any actions taken in response to such disclosures.

The EPA confirms that no disclosures were made to the EPA as an employer, under Section 6 of the Act in 2022.

The Director General of the EPA, in the context of her role as a Prescribed Person in relation to disclosures of relevant wrongdoings of all matters relating to the protection of the environment in the State, received four disclosures from a party external to the EPA during the year.



7

Appendices



7. APPENDICES

7.1 Prompt Payment of Accounts Act, 1997

The Environmental Protection Agency comes under the remit of the Prompt Payment of Accounts Act, 1997 and the European Communities (Late Payment in Commercial Transactions) Regulations 2002.

It is the policy of the EPA to ensure that all invoices are paid promptly. Specific systems and procedures have been put in place to enable invoices to be tracked and to ensure that payments are made before their due date.

These controls are designed to provide reasonable, but not absolute, assurance against material non-compliance with the Act and Regulations.

There were no late payments with a value in excess of €317 during 2022.



Laura Burke
Director General, EPA

27 June 2023

7.2 Consultants and Advisers Engaged

Acustica Ltd	Halloran HR Resolutions Ltd
AECOM Ireland Ltd	Hendrik W van der Kamp
CDM Smith	Inhouse Technologies Ltd
RPS Group	Integrated Risk Solutions
APEM	Keith Faulkner
Wallingford Hydro Solutions	KM Consultancy Services
Compass Informatics	Land Use Consultants (LUC) Ltd.
River Crossing Business Solutions	Levett-Therivel
Botanical, Environmental & Conservation (BEC) Consultants Ltd	Mason Hayes & Curran
ByrneWallace	Mazars
Camp Dresser & McKee (Ireland) Ltd	MRA Consulting Ltd.
Carr Communications Ltd	ReidyBrophy Ltd.
Centre for Ecology and Hydrology, UK	Pat Horton
CERC (GBP)	Synergy Environmental Ltd t/a Enviroguide Consulting
Certification Europe Ltd	Ryan Hanley consulting engineers
Christopher Hone	Rivercrossing Business Solutions Ltd
Compass Informatics	Sweco Ireland Ltd
Cpl Occupational Healthcare	Think HR
eir evo	VITO (Flemish Institute for Technological Research)
Gartner Ireland Ltd.	Wallingford Hydrosolutions Ltd
Geosyntec Consultants Ltd	

7.3 EPA Publications 2022

Air

The following [air reports are published on the EPA website](#):

- ▲ *Air Quality in Ireland 2021*
- ▲ *Annual Air Quality Bulletin 2021*

Corporate

The following [corporate reports are published on the EPA website](#):

- ▲ *EPA Strategic Plan 2022-2026*
- ▲ *EPA Annual Report & Accounts 2021*
- ▲ *Tuarascáil Bhliantúil agus Cuntais 2021*
- ▲ *EPA Year in Review 2021*
- ▲ *Athbhreithniú ar 2021*
- ▲ *EPA Scéim Teanga 2022-2025*
- ▲ *EPA Environmental Performance Report 2017-2020*
- ▲ *EPA Corporate Governance Framework*
- ▲ *EPA Code of Conduct*

Radon

The following [radon reports are published on the EPA website](#):

- ▲ *Radon in Workplaces*
- ▲ *Radon in Homes*

Public Authority

The following [Public Authority report is published on the EPA website](#):

- ▲ *Focus on Local Authority Environmental Enforcement Activity report 2021*

Waste

The following [waste reports are published on the EPA website](#):

- ▲ *National Waste Statistics Summary Report for 2020*
- ▲ *Smart Garage Guide*
- ▲ *Factsheet on Packaging Waste in Ireland 2020*

Circular Economy

The following [circular economy reports are published on the EPA website](#):

- ▲ *Government interventions to support transition to a circular economy*
- ▲ *Role of Ireland's digital sector in accelerating the transition to a circular economy*

Water quality

The following [water quality reports are published on the EPA website](#):

- ▲ *Water Quality in Ireland 2016 – 2021*
- ▲ *Water Quality in Ireland 2016 – 2021 Summary Report*
- ▲ *Assigning WFD Status to Unmonitored Water Bodies in 2013-2018 Report*
- ▲ *Water Quality Monitoring Report on Nitrogen and Phosphorus Concentrations in Irish Waters 2021*
- ▲ *How We Assess Water Quality - fact sheet*
- ▲ *Bathing water quality in Ireland in 2021*
- ▲ *Designation of heavily modified waterbodies for the third River Basin Management Plan*
- ▲ *National Hydrometric Monitoring Programme 2022 – 2027*
- ▲ *12 monthly publications of the 'Hydrology Summary Bulletin' (Dec 2021 to Nov 2022)*

Drinking water

The following [drinking water reports are published on the EPA website](#):

- ▲ *Drinking Water Quality in Private Group Schemes and Small Private Supplies 2021*
- ▲ *Drinking Water Quality in Public Supplies 2021*

Waste Water

The following [waste water reports are published on the EPA website](#):

- ▲ *Domestic Waste Water Treatment Systems (DWWTS) Inspections 2021*
- ▲ *Urban Waste Water Treatment in 2021*

Assessment

The following [assessment reports are published on the EPA website](#):

- ▲ *Good Practice Note on SEA for the Water Sector*
- ▲ *Guidance on the information to be contained in Environmental Impact Assessment Reports (EIAR)*
- ▲ *Ireland's Environment: Maps and Charts*

Environmental research reports

The following [research reports are published on the EPA website](#):

Addressing climate change evidence needs

- ▲ Fourth Report on Activities: *Climate Research Coordination Group: Fourth Report on Activities: January - December 2021*
- ▲ Research 401: *Peatland Properties Influencing Greenhouse Gas Emissions and Removal*
- ▲ Research 402: *Climate Change Adaptation: Risks and Opportunities for Irish Businesses*
- ▲ Research 404: *PhenoClimate: Impact of Climate Change on Phenology in Ireland*
- ▲ Research 415: *A Roadmap for Local Deliberative Engagements on Transitions to Net Zero Carbon and Climate Resilience*
- ▲ Research 418: *Built Environment Climate Resilience and Adaptation*
- ▲ Research 419: *Enhancing Integration of Disaster Risk and Climate Change Adaptation into Irish Emergency Planning*
- ▲ Research 422: *Soil Organic Carbon and Land Use Mapping (SOLUM)*
- ▲ Research 425: *Connecting People to Climate Change Action: Informing Participatory Frameworks for the National Dialogue on Climate Action (C-CHANGE)*

Delivering a healthy environment

- ▲ Research 407: *Residential Solid Fuel Use in Ireland and the Transition Away from Solid Fuels*
- ▲ Research 412: *Emissions from and Fuel Consumption Associated with Off-road Vehicles and Other Machinery*
- ▲ Research 416: *Development and Application of Monte Carlo Models for High-purity Germanium Gamma Spectrometry*
- ▲ Research 417: *Assessment of the Environmental and Health Impacts Arising from Mercury-free Dental Restorative Materials*
- ▲ Research 420: *Pollen Monitoring and Modelling (POMMEL)*
- ▲ Research 423: *Environmental Transport Noise and Health: Evidence from Ireland (Noise–Health)*
- ▲ Research 427: *Fungal Monitoring Network and Algorithm*

Facilitating a green and circular economy

- ▲ Research 405: *Qualifying and Quantifying the Reuse Sector in Ireland*
- ▲ Research 408: *Sustainable Production and Consumption: The Influence of Social Norms*
- ▲ Research 409: *Co-designing for Resilience in Rural Development through Peer-to-peer Learning Networks and STEAM Place-based Learning Interventions*
- ▲ Research 410: *Food Loss and Waste from Farming, Fishing and Aquaculture in Ireland*
- ▲ Research 411: *Innovative Valorisation of Dairy Processing Wastewater Using a Circular Economy Approach (Newtrients)*
- ▲ Research 426: *Packaging Waste Statistics, Producer Motivations and Consumer Behaviour*

Protecting and restoring our natural environment

- ▲ Evidence Synthesis Report 1: *A Signpost for Soil Policy in Ireland MUCKISOILS (Mapping Understanding and Current Knowledge of Irish Soils)*
- ▲ Research 403: *EcoMetrics – Environmental Supporting Conditions for Groundwater-dependent Terrestrial Ecosystems*
- ▲ Research 406: *Sharing Lessons Learned from Water Governance*
- ▲ Research 413: *The Diversity and Resilience of Kelp Ecosystems in Ireland*
- ▲ Research 414: *Managing Invasive Alien Plants in Ireland*
- ▲ Research 421: *Assessment of the Extent and Impact of Barriers on Freshwater Hydromorphology and Connectivity in Ireland (Reconnect)*
- ▲ Research 424: *ESDecide: From Ecosystem Services Framework to Application for Integrated Freshwater Resources Management*





8

Financial Statements



8. FINANCIAL STATEMENTS

8.1 GOVERNANCE STATEMENT AND DIRECTORS' REPORT 2022

Governance

The Environmental Protection Agency (Agency/ EPA) was established under the Environmental Protection Agency Act, 1992, as amended (the Act). In accordance with Section 19 of the Act the Agency consists of a Director General and five Directors.

The Director General and other Directors are appointed by the Government in accordance with Sections 21 and 24 of the Act. The functions of the EPA are set out in Part III of the Act. The Director General and the Directors are accountable to the Minister for the Environment, Climate and Communications and the Minister for Housing, Local Government and Heritage. The Director General and Directors are responsible for ensuring good governance and perform this task by setting strategic objectives and targets and taking strategic decisions on all key business issues. The regular day-to-day management, control and direction of the EPA are the responsibility of the Director General and the Directors.

The Act does not use the term 'Board' to designate the organisation's governing body; instead, the Act refers to 'the Agency' and designated 'Directors of the Agency'. The Director General serves as Chair of the Executive Board (the Board) and operational chief executive of the EPA, fulfilling both governance and management roles and is responsible for running the Agency. The Director General is accountable to the Oireachtas through the Public Accounts Committee.

The Directors of the Agency are referred to as 'Board Members', and the Agency's governing body is known as the Board. The Board fulfils both governance and management roles and its activities are organised into five Offices, with each Director having operational responsibility for an Office.

Board Responsibilities

The EPA has been granted a wide range of powers and duties under the Environmental Protection Agency Act, 1992, as amended and other relevant environmental and radiation protection legislation.

The role of the Board of any public body is to provide strategic leadership, direction, support and guidance for the body and promote commitment to its core values, policies and objectives. In addition to the special Board responsibilities set out in the Code of Practice for the Governance of State Bodies (the Code) and in the Act, the EPA's Board holds specific governance and management responsibilities as the Board of a State body which include:

- ▲ to ensure that the body carries out its responsibilities as set out by statute or by ministerial order
- ▲ to provide leadership, vision and direction for the body
- ▲ to define the mission of the body, decide its strategic goals and develop the policies required to achieve those goals
- ▲ to ensure good management, to monitor the achievements of management and to ensure that a proper balance is achieved between the respective roles of board and management
- ▲ to set performance targets, including key financial targets and, in particular, to agree and closely monitor the budget
- ▲ to ensure that the body behaves ethically and in a manner that accords with the core values of the body
- ▲ to define and promote the body's role in the community by developing mechanisms for gathering the views of customers and stakeholders and by keeping people informed in an open, accountable and responsible way.

Legislatively, the Board has responsibility for the management of the EPA, but for practical purposes it is empowered to delegate responsibility to other staff for operational purposes. Section 25(6) of the Act provides that the Agency may perform or exercise any of its functions through or by any director or other person or body who has been duly authorised by the Agency in that behalf.

Since the establishment of the EPA, the Board has delegated discretionary powers to various levels in the EPA. The delegation of powers continues to grow as the Agency acquires further legislative functions over time.

The EPA's Strategic Plan was published in May 2022 and sets out the priority actions that the EPA will take to deliver on our purpose of protecting, improving and restoring our environment.

The work and responsibilities of the EPA are set out in: the EPA Strategic Plan; the EPA Work Programme; and the Oversight Agreement with the Department of Environment, Climate and Communications and the Department of Housing, Local Government and Heritage.

Each month, the Board has a dedicated meeting on governance and management issues which include but not limited to:

- ▲ Declaration of interests
- ▲ Progress reports on operational issues from individual Offices
- ▲ Financial management
- ▲ Strategic planning
- ▲ Communications management
- ▲ Corporate Governance issues (including internal audit)
- ▲ HR and staffing issues
- ▲ Risk Management

Section 50 of the Environmental Protection Act, 1992, as amended requires the EPA to keep, in such form as may be approved by the Minister for the Environment, Climate and Communications with consent of the Minister for Public Expenditure and Reform, all proper and usual accounts of money received and expended by it.

In preparing these financial statements, the EPA is required to:

- ▲ select suitable accounting policies and apply them consistently;
- ▲ make judgements and estimates that are reasonable and prudent;
- ▲ prepare the financial statements on the going concern basis unless it is inappropriate to presume that it will continue in operation;
- ▲ state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements.

The EPA is responsible for keeping adequate accounting records which disclose, with reasonable accuracy at any time, its financial position and enables

it to ensure that the financial statements comply with Section 50 of the Act. The maintenance and integrity of the corporate and financial information is the responsibility of the Director General and Directors.

The Board is responsible for approving the annual plan and budget. The performance of the EPA is monitored on a monthly basis through the submission to the Board of progress reports on the EPA's Key Performance Indicators. A year-end evaluation of the 2022 EPA Work Programme Activities was completed, and the 2022 year-end Financial Management Report was submitted to the Board in February 2023.

The EPA is also responsible for safeguarding its assets and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Board considers that the financial statements of the EPA give a true and fair view of the financial performance and the financial position of the EPA at 31 December 2022.

Board Structure

The Board consists of a Director General and five other Directors, one of whom acts as Deputy Director General, all of whom are appointed by the Government. The Director General is appointed for a period of seven years and the other Directors are appointed for a period of five years. The Director General and Directors respectively may be reappointed by the Government for a second or subsequent term of office.

Requirements arising from the Annex to the Code of Practice for the Governance of State Bodies 2016, on Gender Balance, Diversity and Inclusion recommends that State Boards achieve 40% representation of women and of men on State Boards. The procedures for the appointment of the Director General and Directors of the EPA are laid down in Sections 21 and 24 of the EPA Act respectively. The EPA Director General and the Directors are selected by a committee as prescribed in the EPA Act and appointed by the Government via an open recruitment process. In selecting candidates, the committee has regard to knowledge and experience, including relevant experience in environmental and radiological matters. At 31 December 2022 the EPA Board included a gender balance of 50% female and 50% male.

The Board met for General Board meetings on fourteen occasions in 2022. The table below details the appointment date for Board members who served during 2022:

Board Member	Role	Date Appointed
Laura Burke	Director General	8 November 2011*
Gerard O'Leary	Deputy Director General	8 May 2012**
Micheál Lehane	Director	1 May 2016*
Eimear Cotter	Director	1 September 2017*
Tom Ryan	Director	25 August 2018
Sharon Finegan	Director	19 April 2021

* Second term

** Third term

Audit and Risk Committee

The EPA has established an Audit and Risk Committee (ARC) that comprises six external members and one member from EPA Senior Management. The role of the ARC is to support the Board in relation to its responsibilities for issues of risk, control and governance and associated assurance. The ARC is independent from the financial management of the organisation. In particular, the ARC ensures that the internal control systems including audit activities are monitored actively and independently. The Chairperson of the ARC meets regularly with the Director General and reports at least annually to the Board on the performance of the ARC.

There were five meetings of the Audit and Risk Committee (ARC) in 2022. The ARC was established on a permanent basis by the EPA on 25 January 2022. The membership of the ARC at the end of 2022 is set out in the following table:

ARC Member	Change to Term During 2022
Tom Barry (Chairperson)	Unchanged
Caroline Bocquel	Unchanged
Áine Ryall	Unchanged
Raymond Smith	Unchanged
Philomena Poole	Unchanged
Harvey Bradshaw	Appointed March 2022
David Owens	Appointed December 2022

Board Sub Committees

The Board has established two Board Sub Committees.

- 1. ICT Board Sub-Committee:** comprises three Board members and is supported by senior Programme Managers, the senior ICT team and a senior Analytics team representative. The Board members of this committee are: Dr Micheál Lehane (Chairperson), Dr Eimear Cotter and Mr Gerard O'Leary. There were 8 meetings of the ICT Board Sub-Committee in 2022.
- 2. Safety, Health and Welfare (SHW) Board Sub-Committee:** comprises three Board members at the end of 2022. The members of this committee are: Mr Gerard O'Leary (Chairperson), Dr Micheál Lehane and Dr Tom Ryan. There were five meetings of the SHW Board Sub-Committee in 2022.

The Terms of Reference for a new People and Culture Board Sub-Committee was approved by the Board in 2022. This Committee will commence in 2023.

External Advisory /Consultative Committees

The Board is also advised by the following key external committees, each of which was established under legislation:

- ▲ EPA Advisory Committee
- ▲ Dumping at Sea Advisory Committee
- ▲ Genetically Modified Organisms (GMO) Advisory Committee
- ▲ Health Advisory Committee
- ▲ Radiological Protection Advisory Committee

Schedule of Attendance, Fees and Expenses

There were 14 General Board meetings in 2022. A schedule of attendance at the General Board meetings for 2022 is set out below. 10 of the 14 General Board Meetings were held in EPA headquarters and 4 General Board Meetings were held in EPA Inspectorate, Dublin:

Number of meetings	Board Attended/Out of Possible	Fees 2022 €	Expenses 2022 €
Laura Burke	14/14	0	420
Gerard O'Leary	14/14	0	0
Micheál Lehane	14/14	0	0
Eimear Cotter	12/14	0	0
Tom Ryan	14/14	0	0
Sharon Finegan	12/14	0	0
Total		0	420

A schedule of attendance at the ARC meetings for 2022 is set out below including the fees and expenses received by each member:

Number of meetings	Audit & Risk Committee Attended/Out of Possible	Fees 2022 €	Expenses 2022 €
Tom Barry (Chairperson)	5/5	4,916	864
Nuala Bannon	3/3	0	102
Caroline Bocquel	5/5	0	318
John Maher	4/4	0	213
Áine Ryall	4/5	0	0
Raymond Smith	5/5	0	0
Allan Reid	2/2	0	0
Philomena Poole	3/5	0	140
Harvey Bradshaw	2/2	0	974
Total		4,916	2,611

Disclosures Required by Code of Practice for the Governance of State Bodies (2016)

The Board is responsible for ensuring that the EPA has complied with the requirements of the Code, as published by the Department of Public Expenditure and Reform in August 2016. The following disclosures are required by the Code:

Employee Short-Term Benefits Breakdown

Employees' short-term benefits in excess of €60,000 are set out in Note 8 (c) of the financial statements.

Consultancy Costs

Consultancy costs include the cost of external advice to management and exclude outsourced 'business-as-usual' functions and staff training and development providers.

	2022 €	2021 €
Legal Advice, including Financial Provision of Licensed Activities.	1,228,728	1,049,287
Pension Scheme Actuarial Valuation	4,859	5,843
HR Consultancies	8,856	50,411
Public Relations	82,923	79,412
Internal Audit & Corporate Governance	73,099	78,845
Procurement Consultancy and Advice	21,181	56,208
Strategy Development and Implementation	58,794	69,264
Total Consultancy Costs	1,478,440	1,389,270

Legal Costs and Settlements

The table below provides a breakdown of amounts recognised as expenditure in the reporting period in relation to legal costs, settlements and conciliation and arbitration proceedings relating to contracts with third parties. This does not include expenditure incurred in relation to general legal advice received by the EPA which is disclosed in Consultancy costs above.

	2022 €	2021 €
Legal fees – legal proceedings	557,774	369,606
Conciliation and arbitration payments	0	0
Settlements	0	0
Total	557,774	369,606

Travel and Subsistence Expenditure

Travel and subsistence expenditure is categorised as follows:

	2022 €	2021 €
Domestic		
- Board	59,853	23,091
- Employees	913,928	330,005
International		
- Board	16,889	0
- Employees	142,148	12,758
Total	1,132,818	365,854

Hospitality Expenditure

The Income and Expenditure Account includes the following hospitality expenditure:

	2022 €	2021 €
Staff hospitality*	15,799	17,429
Other hospitality	0	0
Total	15,799	17,429

*Includes Employee Assistance programme and contributions to Staff Sports and Social Clubs.

Statement of Compliance

The Board has adopted and has put procedures in place to ensure compliance with the Code of Practice for the Governance of State Bodies (2016). The EPA was in compliance with the Code of Practice for the Governance of State Bodies for 2022.

Signed on behalf of the Board.



Laura Burke
Director General

Date signed: 27 June 2023

8.2 STATEMENT ON INTERNAL CONTROL 2022

1. Scope of Responsibility

On behalf of the Environmental Protection Agency (EPA) I acknowledge the Directors' collective responsibility for ensuring that an effective system of internal control is maintained and operated, for preparing the accounts of the EPA and for complying with all statutory obligations applicable to the EPA. This responsibility takes account of the requirements of the Code of Practice for the Governance of State Bodies (2016).

2. Purpose of the System of Internal Control

The system of internal control is designed to manage risk to a tolerable level rather than to eliminate it. The system can therefore only provide reasonable and not absolute assurance that assets are safeguarded, transactions authorised and properly recorded, and that material errors or irregularities are either prevented or detected in a timely way. While the effectiveness of an internal control system can change over time, the EPA reviews and updates such systems as required.

The system of internal control, which accords with guidance issued by the Department of Public Expenditure and Reform has been in place in the EPA for the year ended 31 December 2022 and up to the date of approval of the financial statements.

3. Key Control Procedures to Provide Effective Internal Control

i) Annual Review of the Effectiveness of Control

The Executive Board (the Board) conducted an annual review of the effectiveness of the internal controls which concluded in February 2023. In undertaking this review the Directors considered the following:

- ▲ Details of the system of internal controls in 2022 including Risk Management, Financial Management, Internal Audit, Ethics, Information Systems, Business Planning & Reporting,
- ▲ Report on the Review of the Effectiveness of Internal Financial Controls 2022
- ▲ Compliance Officer's Report 2022,
- ▲ ICT Compliance Report 2022,

- ▲ Annual Report on Compliance with Corporate Legislation
 - ▲ Safety, Health & Welfare Report 2022, and
 - ▲ Risk Management Assurance Statements 2022
- Annual Assurance Statements in relation to Budgetary Responsibilities for 2022 have been signed and presented to the Director General, in line with the provisions of the EPA Finance Manual. The COVID-19 pandemic significantly changed the way the EPA operated. Throughout 2022, the EPA continued to enhance work practices culminating in the EPA Board approving the EPA's first Blended Working Policy in December. The blended working model adopted provides an opportunity to direct and shape the future work of the EPA, in a way that takes full advantage of this new way of working.

ii) Breaches in Control

There were no reported instances of breaches in control in 2022.

iii) Material Losses or Frauds

The EPA was subjected to a Phishing attack in September 2022. A sum of €21,060 was paid by EPA into a bank account controlled by a fraudster. Following swift action, the sum was subsequently returned to the EPA. As part of our response, the EPA engaged with the appropriate bodies, including An Garda Síochána and the National Cyber Security Centre. The EPA has also reviewed and strengthened internal controls following the incident.

iv) Review of Statement on Internal Control

This Statement on Internal Control 2022 was reviewed by the EPA Internal Auditors, EPA Audit & Risk Committee (ARC) and the Directors in February 2023 to ensure that it accurately reflects the control system in place during 2022.

v) Steps taken to ensure an appropriate control environment

The Directors of the EPA have taken steps to ensure an appropriate control environment within the EPA by:

- ▲ Publishing and implementing the EPA Strategic Plan 2022 –2026. This strategy, the EPA's sixth, was published in May 2022 and sets out what we intend to achieve over the next five years in delivering our mandate and our purpose to

protect, improve and restore our environment through regulation, scientific knowledge and working with others.

- ▲ Implementing the recommendations of the OECD review of EPA’s institutional and organisational set-up. The review examined our structures, accountability, business processes, reporting and performance management as well as role clarity, relationships, distribution of powers and responsibilities with other government and non-government bodies. The overall finding of the review was that “the EPA has established itself as a trusted and respected body for environmental and radiological protection that is recognised for its scientific integrity.”
- ▲ Agreeing a detailed work programme each year and monitoring and evaluating progress against that work programme on a monthly basis.
- ▲ Holding regular Board meetings, including monthly management meetings where the Agenda includes strategic issues such as Corporate Governance, Financial Management, Corporate Strategy and staffing matters.
- ▲ Adopting an EPA Finance Manual and a set of financial policies and procedures to control the significant financial elements of the EPA’s business.
- ▲ Adopting a Corporate Governance Manual to provide a clear and comprehensive summary of the principal aspects of corporate governance for the Directors and senior managers.
- ▲ Maintaining a comprehensive schedule of insurances to protect the EPA’s interests.
- ▲ Establishing and maintaining an Audit & Risk Committee. (see Section 3(ix) Monitoring Effectiveness of the System of Internal Control)
- ▲ Revising and operating a Risk Management Policy and Framework, appointing an Executive Risk Committee (ERC) and a Chief Risk Officer. (see Section 3(vi) Risk and Control Framework)
- ▲ Monitoring and assessing compliance with corporate legislation in accordance with EPA Policy.
- ▲ Defining management responsibilities, delegating appropriate functions, and reviewing and approving all EPA policies and procedures.
- ▲ Adopting a Code of Business Conduct for Directors and Staff in accordance with the requirements of the Code of Practice for the Governance of State Bodies.

- ▲ Ensuring compliance with the Ethics in Public Office Acts requirements and Sections 37 & 38 of the EPA Act 1992, relating to the Declaration and Disclosure of Interests.
- ▲ Establishing mechanisms for ensuring the adequacy of the security of its information and communication technology (ICT) systems which include;
 - ▶ the establishment of appropriate policies and control procedures,
 - ▶ effective organisational structures including segregation of duties and
 - ▶ the delegation to the internal audit unit of the responsibility for specific reviews and evaluations of ICT systems through the process of Annual Internal Audit Plans.

Legislatively, the Board has responsibility for the management of the EPA, but it is empowered to delegate responsibility to other staff for operational purposes. Section 25(6) of the EPA Act provides that the EPA may perform or exercise any of its functions through or by any Director or other person or body who has been duly authorised by the EPA in that behalf. The Programme Managers in charge of various functions are delegated operational responsibility for carrying out the work of the EPA.

Since the establishment of the EPA, the Board of the Agency has delegated discretionary powers to various levels in the EPA. The delegation of powers continues to grow as the EPA is assigned further statutory responsibilities over time. The EPA maintains a comprehensive register of relevant environmental legislation, a register of powers delegated by the Board and Board Reserved Functions. These registers are reviewed and approved by the Board as required.

vi) Risk and Control Framework

The EPA has implemented a risk management system which identifies and reports key risks and the management actions being taken to address and, to the extent possible, to mitigate those risks.

In 2022, the EPA published its revised Risk Management Policy following a review of its risk management processes. The review process resulted in amendments to both the Office Risk Registers and the Corporate Risk Register resulting in a risk management process which is more dynamic and better meets the needs of the EPA.

The EPA's revised Risk Management Policy sets out our risk appetite, the risk management processes in place and details the roles and responsibilities of staff in relation to risk. The EPA's Risk Management Policy and Structures continue to be in compliance with the Code of Practice for the Governance of State Bodies 2016.

The Corporate Risk Register identifies the key risks facing the EPA and details the controls and actions needed to mitigate risks and the responsibility for the operation of controls assigned to specific staff. The Corporate Risk Register is developed and managed by the ERC, reviewed by the ARC and presented to the EPA Board for approval. Additionally, risk assessments of critical services have been carried out as part of a Business Continuity Project.

Each Director provides bi-annual assurance statements to the Board acknowledging responsibility for the on-going update, monitoring and review of the Risk Register for their Office and for ensuring the implementation of the Risk Management Policy.

I can therefore confirm that a control environment containing the following elements is in place:

- ▲ procedures for key business processes have been documented,
- ▲ financial responsibilities have been assigned at management level with corresponding accountability,
- ▲ there is an appropriate budgeting system with an annual budget which is kept under review by senior management,
- ▲ there are systems aimed at ensuring the security of the information and communication technology systems,
- ▲ there are systems in place to safeguard the assets, and
- ▲ a system for the control of programme expenditure including procedures for the approval and payment of grants and processes to monitor the progress towards achieving the objectives.

vii) Financial & Budgetary Information

The system of internal controls is based on a framework of regular management information, a system of delegation and accountability, a set of financial and administrative procedures including segregation of duties. In particular it includes:

- ▲ A comprehensive budgeting system with an annual budget, which is reviewed and approved by the Board. The budgeting system also includes the preparation of two formal revised budgets in June and September, both of which are submitted to the Board for approval.
- ▲ The assignment of budgets and budgetary authority and responsibility for specific functions to selected managers.
- ▲ Arrangements for all purchasing to be conducted and controlled through the EPA's financial management system and procedures.
- ▲ Monthly reviews by the Board of financial management reports.
- ▲ Adoption of an annual Corporate Procurement Plan and the appointment of a Procurement Officer.

The inbuilt controls in the Financial Systems have continued to operate as normal during 2022 with no procedures or Key Controls being overridden in order to maintain business-as-usual.

viii) Procedures for addressing financial implications of major business risks

The financial implications of business risks have been considered through the formal business risk assessment process and in the preparation of the EPA Internal Audit Plans. These are further assessed and evaluated through the phased implementation of the EPA's Internal Audit Plan.

ix) Monitoring effectiveness of the System of Internal Control

The EPA has established and maintained an Audit & Risk Committee, comprising six external members, one of whom is the Chairperson, and one EPA senior manager, as part of the on-going systematic review of the control environment and governance procedures within the EPA, to oversee the internal audit function and advise the Board in relation to the operation and development of that function.

The EPA has established an internal audit function which is adequately resourced and conducts a programme of work agreed with the ARC. The EPA engages external expertise to conduct internal audits.

The EPA Internal Audit Plan 2022-2023 was implemented during the year with progress on the implementation of the actions required arising from

each audit reviewed regularly and reported to the Audit & Risk Committee at each ARC meeting and the Board.

The Internal Audit Plan 2023-2024 was developed during 2022 and reflects the corporate risks identified for the EPA by the Executive Risk Committee, audits identified by EPA Management and the Audit and Risk Committee and developments and issues in relation to Corporate Governance that have arisen in the Public Sector in general. This Internal Audit Plan was reviewed by the Audit & Risk Committee and approved by the EPA Board in October 2022.

4. Procurement

I confirm that the EPA has procedures in place to ensure compliance with current procurement rules and guidelines. There were no instances of non-compliant procurement in 2022.

5. Research Funding

The Department of Public Expenditure and Reform (DPER) Circular 13/2014 Management of and Accountability of Grants from Exchequer Sources (the Circular) outlines the public financial management principles, procedures and additional reporting requirements to be followed in the management of grant funding provided from public money.

The EPA has procedures for the approval and payment of grants and processes to monitor the progress towards achieving the research objectives.

Annually, the Department of the Environment, Climate and Communications informs the EPA that it can continue to operate the existing pre-funding arrangements under the EPA's Research Programme pending receipt of formal DPER approval.

6. Review of Effectiveness

I confirm that the EPA has procedures to monitor the effectiveness of its risk management and control procedures. The EPA's monitoring and review of the effectiveness of the system of internal control is informed by the work of the internal and external auditors, the Audit and Risk Committee, and the senior management within the EPA responsible for the development and maintenance of the internal control framework.

I confirm that the Directors conducted an annual review of the effectiveness of the internal controls for 2022 in both January and February 2023 and are satisfied that the system of internal control is sound.

An Internal Audit of the Review of the Effectiveness of Internal Financial Controls was undertaken in November 2022 and January 2023 in accordance with the Internal Audit Plan 2022/2023. Results from the Internal Audit indicate that reasonable assurance can be placed on the adequacy and operating effectiveness of controls to mitigate and/or manage financial risks.

7. Internal Control Issues

Other than the issue identified in section 3(iii) above, no breaches to internal controls were identified in relation to 2022 that require disclosure in the financial statements.

Signed on behalf of the Board.



Laura Burke

Director General

Date signed: 27 June 2023

8.3 COMPTROLLER AND AUDITOR GENERAL REPORT FOR PRESENTATION TO THE HOUSES OF THE OIREACHTAS

Opinion on the financial statements

I have audited the financial statements of the Environmental Protection Agency for the year ended 31 December 2022 as required under the provisions of section 50 of the Environmental Protection Agency Act 1992. The financial statements comprise

- ▲ the statement of income and expenditure and retained revenue reserves
- ▲ the statement of comprehensive income
- ▲ the statement of financial position
- ▲ the statement of cash flows, and
- ▲ the related notes, including a summary of significant accounting policies.

In my opinion, the financial statements give a true and fair view of the assets, liabilities and financial position of the Environmental Protection Agency at 31 December 2022 and of its income and expenditure for 2022 in accordance with Financial Reporting Standard (FRS) 102 – *The Financial Reporting Standard applicable in the UK and the Republic of Ireland*.

Basis of opinion

I conducted my audit of the financial statements in accordance with the International Standards on Auditing (ISAs) as promulgated by the International Organisation of Supreme Audit Institutions. My responsibilities under those standards are described in the appendix to this report. I am independent of the Environmental Protection Agency and have fulfilled my other ethical responsibilities in accordance with the standards.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Report on Information other than the financial statements, and on other matters

The Environmental Protection Agency has presented certain other information together with the financial statements. This comprises the annual report, the governance statement and Directors' report and the statement on internal control. My responsibilities to report in relation to such information, and on certain other matters upon which I report by exception, are described in the appendix to this report.

I have nothing to report in that regard.



Andrew Harkness

For and on behalf of the
Comptroller and Auditor General

28 June 2023

8.4 APPENDIX TO THE REPORT

Responsibilities of Directors

As detailed in the governance statement and Directors' report, the Directors are responsible for

- ▲ the preparation of annual financial statements in the form prescribed under section 50 of the Environmental Protection Agency Act 1992
- ▲ ensuring that the financial statements give a true and fair view in accordance with FRS 102
- ▲ ensuring the regularity of transactions
- ▲ assessing whether the use of the going concern basis of accounting is appropriate, and
- ▲ such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Responsibilities of the Comptroller and Auditor General

I am required under section 50 of the Environmental Protection Agency Act 1992 to audit the financial statements of the Environmental Protection Agency and to report thereon to the Houses of the Oireachtas.

My objective in carrying out the audit is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement due to fraud or error. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs, I exercise professional judgement and maintain professional scepticism throughout the audit. In doing so,

- ▲ I identify and assess the risks of material misstatement of financial statements whether due to fraud or error; design and perform audit procedures responsive to those risks; and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error,

as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- ▲ I obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal controls.
- ▲ I evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures.
- ▲ I conclude on the appropriateness of the use of the going concern basis of accounting and, based on the audit evidence obtained, on whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Environmental Protection Agency's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my report. However, future events or conditions may cause the Environmental Protection Agency to cease to continue as a going concern.
- ▲ I evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I report by exception if, in my opinion,

- ▲ I have not received all the information and explanations I required for my audit, or
- ▲ the accounting records were not sufficient to permit the financial statements to be readily and properly audited, or
- ▲ the financial statements are not in agreement with the accounting records.

Information other than the financial statements

My opinion on the financial statements does not cover the other information presented with those statements, and I do not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, I am required under ISAs to read the other information presented and, in doing so, consider whether the other information is materially inconsistent with the financial statements or with knowledge obtained during the audit, or if it otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact.

Reporting on other matters

My audit is conducted by reference to the special considerations which attach to State bodies in relation to their management and operation. I report if I identify material matters relating to the manner in which public business has been conducted.

I seek to obtain evidence about the regularity of financial transactions in the course of audit. I report if I identify any material instance where public money has not been applied for the purposes intended or where transactions did not conform to the authorities governing them.

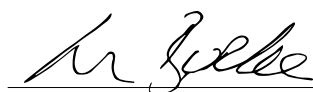
8.5 STATEMENT OF INCOME AND EXPENDITURE AND RETAINED REVENUE RESERVES FOR THE YEAR ENDED 31 DECEMBER 2022

Income	Note	2022	2021
		€'000	€'000
Oireachtas Grants – DECC	2(a)	51,480	48,636
Oireachtas Grants – DHLGH	2(b)	6,094	6,352
Emissions Trading Costs Recovered	3	1,579	1,542
Income from Radiological Activities	4	772	764
Licensing Activities	5	599	674
Enforcement Activities	6	9,777	10,133
Sundry Receipts	7	503	698
Net Deferred Retirement Benefit Funding	23(c)	10,648	7,942
Total Income		81,452	76,741
Expenditure			
Remuneration	8	30,287	27,373
Retirement Benefit Costs	23(a)	13,795	11,052
Travelling Expenses	9	1,261	466
Laboratory and Field Costs	10	1,785	1,494
Accommodation Costs	11	2,280	1,916
Administration Costs	12	10,199	8,826
Consultants	13	380	285
Grants, Contractors and External Service Providers	14	8,465	9,673
Environmental Research Programme Payments	15	9,090	8,784
Depreciation	16	5,552	5,762
Total Expenditure		83,094	75,631
Surplus / (Deficit) for the Year before Appropriations		(1,642)	1,110
Transfer (to)/ from the Capital Account	17	142	145
Surplus / (Deficit) on Disposals of Fixed Assets		7	(16)
Surplus / (Deficit) for the Year after Appropriations		(1,493)	1,239
Surplus at 1 January		4,735	3,496
Surplus at 31 December		3,242	4,735

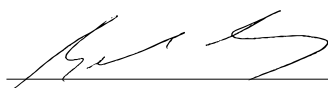
All income and expenditure for the year relate to continuing activities at the reporting date.

The Statement of Cash Flows and notes 1 to 27 form part of these financial statements.

On behalf of the Board of the Environmental Protection Agency:



Laura Burke
Director General



Gerard O'Leary
Deputy Director General

Date signed: 27 June 2023

8.6 STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 31 DECEMBER 2022

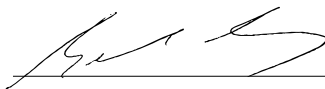
	Note	<u>2022</u> €'000	<u>2021</u> €'000
Surplus / (Deficit) after appropriations		(1,493)	1,239
Experience gains / (losses) on retirement benefit obligations	23(d)	(5,489)	3,143
Changes in assumptions underlying the present value of retirement benefit obligations		117,105	(23,421)
Actuarial (Loss) / Gain in the year		111,616	(20,278)
Adjustment to deferred retirement benefits funding		(111,616)	20,278
Other Comprehensive Income for the year		(1,493)	1,239

The Statement of Cash Flows and notes 1 to 27 form part of these financial statements.

On behalf of the Board of the Environmental Protection Agency:



Laura Burke
Director General



Gerard O'Leary
Deputy Director General

Date signed: 27 June 2023

8.7 STATEMENT OF FINANCIAL POSITION AS AT 31 DECEMBER 2022

	Note	<u>2022</u> €'000	<u>2021</u> €'000
Fixed Assets - Property, Plant & Equipment	19	37,740	37,882
Current Assets			
Receivables	20	3,683	3,252
Cash and cash equivalents	21	8,462	10,350
		12,145	13,602
Current Liabilities (amounts falling due within one year)			
Payables	22	(8,909)	(8,873)
Net Current Assets		3,236	4,729
Total Assets less Current Liabilities before Retirement Benefits		40,976	42,611
Retirement Benefits			
Retirement benefit obligations	23(b)	(233,839)	(334,807)
Deferred retirement benefit funding asset	23(c)	233,839	334,807
		0	0
Total Net Assets		40,976	42,611
Representing			
Capital account	17	37,734	37,876
Retained revenue reserves		3,242	4,735
		40,976	42,611

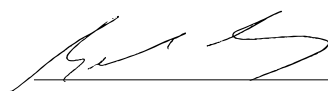
The Statement of Cash Flows and notes 1 to 27 form part of these financial statements.

On behalf of the Board of the Environmental Protection Agency:



Laura Burke
Director General

Date signed: 27 June 2023



Gerard O'Leary
Deputy Director General

8.8 STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 31 DECEMBER 2022

	2022	2021
	€'000	€'000
Net Cash Flows from Operating Activities		
(Deficit) / Surplus of Income over Expenditure	(1,493)	1,239
Depreciation and Impairment of Fixed Assets	5,552	5,762
(Increase) in Receivables	(431)	(27)
Increase / (Decrease) in Payables	36	(307)
Interest Paid	52	64
Deficit / (Surplus) on Disposal of Fixed Assets	(7)	16
Transfer (from) / to Capital Account	(142)	(145)
Net Cash Inflow from Operating Activities	3,567	6,602
Cash Flows from Investing Activities		
Payments to acquire Property, Plant & Equipment	(5,410)	(5,633)
Proceeds on disposal of fixed assets	7	0
Net Cash Flows from Investing Activities	(5,403)	(5,633)
Cash Flows from Financing Activities		
Bank Interest Paid	(52)	(64)
Net Cash Flows from Financing Activities	(52)	(64)
Net Increase / (Decrease) in Cash and Cash Equivalents	(1,888)	905
Cash and Cash equivalents at 1 January	10,350	9,445
Cash and Cash Equivalents at 31 December	8,462	10,350

8.9 NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2022

1 Accounting Policies

The basis of accounting and significant accounting policies adopted by the Environmental Protection Agency are set out below. They have all been applied consistently throughout the year and for the preceding year.

a) General Information

The Environmental Protection Agency was set up under the Environmental Protection Agency Act, 1992, with its headquarters at Johnstown Castle Estate, County Wexford.

Primary Objectives - the description of EPA's operations and principal activities is set out in the Annual Report which accompanies these Financial Statements.

The Environmental Protection Agency is a Public Benefit Entity (PBE).

b) Statement of Compliance

The financial statements of the Environmental Protection Agency for the year ended 31 December 2022 have been prepared in accordance with FRS 102, the financial reporting standard applicable in the UK and Ireland issued by the Financial Reporting Council (FRC).

c) Basis of Preparation

The financial statements have been prepared under the historic cost convention and in the form approved by the Minister for the Environment Climate and Communications, with the concurrence of the Minister for Public Expenditure and Reform under Section 50 of the Environmental Protection Agency Act, 1992. The following accounting policies have been applied consistently in dealing with items which are considered material.

d) Revenue

State Grants

Revenue is generally recognised on an accruals basis; one exception to this is in the case of State Grants which are recognised on a cash receipts basis.

Licensing Activity Income

Applicants for environmental licences/permits are required to pay the full application fee at the time of making the application. The amounts received are apportioned to the Statement of Income and Expenditure and Retained Revenue Reserves for the two main licensing activities on completion of the following stages of the licensing/permitting process:

Industrial Emissions Directive, Integrated Pollution Control and Waste Management Licences:

Application	30%
Proposed Determination	50%
Licence Issue	20%

Waste Water Discharge Licences:

Application	10%
Acknowledgement of complete application	40%
Licence Decision Issue	50%

Other Revenue

Other revenue is recognised on an accruals basis.

e) Emissions Trading Unit

The Emissions Trading Unit (ETU) was established within the Environmental Protection Agency in 2003. The costs of administering the emissions trading scheme are reimbursed to the EPA by the Department of the Environment, Climate and Communications, from the proceeds of the sale of allowances, which are paid directly to the Department.

f) Research Grant Payments

The EPA enters into commitments in respect of research projects awarded for funding. Expenditure on these research projects is charged in the financial statements on the basis of the initial payments which are made on signing of the grant award, interim payments which may be made subject to satisfactory performance and further payments which are issued on receipt and verification of claims in respect of work completed. Costs incurred by the EPA in the implementation of the research programmes are charged to the financial statements as they are incurred.

g) Property, Plant and Equipment

Property, plant and equipment are stated at cost less accumulated depreciation, adjusted for any provision for impairment. Depreciation is provided on all property, plant and equipment at rates estimated to write off the cost less the estimated residual value of each asset on a straight-line basis over their estimated useful lives, as follows:

Buildings	2% per annum
Furniture and Fittings	10% per annum
Laboratory and Field Equipment	15% per annum
Equipment	20% per annum
IT and Computer Equipment	25% per annum
Motor Vehicles	20% per annum

Leasehold improvements are depreciated over the life of the lease.

Residual value represents the estimated amount which would currently be obtained from disposal of an asset, after deducting estimated costs of disposal, if the asset were already of an age and in the condition expected at the end of its useful life.

h) Capitalisation of Internally Developed Software

The external costs of software developed for internal use are capitalised where it can be separately identified as software for use by the Agency and where it is expected to convey business benefits for a number of future years. The salary costs of software development staff are also capitalised.

i) Capital Funding

The fixed assets of the EPA and advances to fund work in progress and asset purchases are met from a combination of capital grants, approved borrowing and allocations from current revenue. Funding sourced from grants (including that used to repay borrowings) is transferred to a capital account which is amortised in line with the depreciation of the related assets.

j) Inventory

All inventory, including consumables are written off in the year of purchase.

k) Receivables

Receivables are initially measured at transaction price and are subsequently carried at this amount, less a provision for doubtful debts. The provision for doubtful debts is established when there is objective evidence that the Environmental Protection Agency will not be able to collect all amounts owed to it. All movements in the provision for doubtful debts are recognised in the Statement of Income and Expenditure and Retained Revenue Reserves.

l) Operating Leases

Rental expenditure under operating leases is recognised in the Statement of Income and Expenditure and Retained Revenue Reserves over the life of the lease. Expenditure is recognised on a straight-line basis over the lease period, except where there are rental increases linked to the expected rate of inflation, in which case these increases are recognised when incurred. Any lease incentives received are recognised over the life of the lease.

m) Employee Benefits

Short-term Benefits

Short-term benefits such as holiday pay are recognised in the year, and benefits that are accrued at year end are included in the Payables figure in the Statement of Financial Position.

Retirement Benefits

The Environmental Protection Agency previously established its own defined benefit pension schemes, which are funded annually on a pay-as-you-go basis from monies available to it, including monies provided by the Department of the Environment, Climate and Communications and from contributions deducted from staff and members' salaries. The Environmental Protection Agency also operates the Single Public Services Pension Scheme (Single Scheme), which is a defined benefit scheme for pensionable public servants appointed on or after 1 January 2013. Single Scheme members' contributions are paid over to the Department of Public Expenditure and Reform (DPER).

Pension costs reflect pension benefits earned by employees and are shown net of staff pension contributions from employees where contributions are retained by the Agency. An amount corresponding to the pension charge is recognised as income to the extent that it is recoverable, and offset by grants received in the year to discharge pension payments.

Actuarial gains or losses arising on scheme liabilities are reflected in the Statement of Comprehensive Income, and a corresponding adjustment is recognised in the amount recoverable from the Department of the Environment, Climate and Communications.

The financial statements reflect, at fair value, the assets and liabilities arising from the Environmental Protection Agency's pension obligations and any related funding, and recognises the costs of providing pension benefits in the accounting periods in which they are earned by employees. Retirement benefit scheme liabilities are measured on an actuarial basis using the projected unit credit method.

Pension liabilities represent the present value of future pension payments earned by staff to date. Deferred pension funding represents the corresponding asset to be recovered in future periods from the Department of the Environment, Climate and Communications.

n) Critical Accounting Judgements and Estimates

The preparation of the financial statements requires management to make judgements, estimates and assumptions that affect the amounts reported for assets and liabilities as at the date of the Statement of Financial Position and the amounts reported for revenues and expenses during the year. However, the nature of estimation means that the actual outcomes could differ from those estimates. The following judgements have had the most significant effect on amounts recognised in the financial statements.

Retirement Benefit Obligation

The assumptions underlying the actuarial valuations for which the amounts recognised in the financial statements are determined (including discount rates, rates of increase in the future of compensation levels, mortality rates and healthcare cost trend rates) are updated annually based on current economic conditions, and for any relevant changes to the terms and conditions of the pension and post-retirement plans.

The assumptions can be affected by:

- (i) the discount rate, changes in the rate of return on high-quality corporate bonds.
- (ii) future compensation levels, future labour market conditions.

2 State Grants

		2022	2021
		€'000	€'000
Grants from the Department of Environment, Climate and Communications:			
(a) Oireachtas Grant – Grants from the Department's Vote:			
Current	Subhead – E3	35,167	32,603
Capital	Subhead – E3	15,537	15,521
Other Programmes	Subhead – E3	776	512
Total DECC Oireachtas Grants		51,480	48,636
The Current grant shown is net of single scheme employee contributions of €420K (2021: €307K) remitted to DPER.			
Grants from the Department of Housing, Local Government and Heritage:			
(c) Oireachtas Grant – Grants from the Department's Vote:			
Current	Subhead – B3	5,358	5,655
Capital	Subhead – B3	736	697
Total DHLGH Oireachtas Grants		6,094	6,352
Total State Grants		57,574	54,988

Research Funding of €10.3M (2021: €10.0M) provided by the Department of Environment, Climate and Communications is a specific allocation to meet the cost of environmental research. €11.404M was expended on these research activities in 2022 (2021: €11.110M). See Note 15.

3 Emissions Trading Unit (ETU) Activities

	2022	2021
	€'000	€'000
Costs of Emissions Trading Unit recovered from Auction Funds, etc.	1,579	1,542
Total Funding of ETU Costs	1,579	1,542

4 Income from Radiological Activities

	2022	2021
	€'000	€'000
Calibration Service	26	28
Radiation Monitoring Service	212	227
Radiological Licensing and Enforcement	512	497
Miscellaneous	22	12
Total Income from Radiological Activities	772	764

5 Licensing Activities - IED & IPC, Waste and WWD

	2022	2021
	€'000	€'000
Licence Fees prepaid at 1 January	1,441	1,412
Fees Received	965	831
Less Refunds Paid	(42)	(128)
Licence Fees prepaid at 31 December (see Note 22)	(1,765)	(1,441)
Amount credited to the Statement of Income and Expenditure and Retained Revenue Reserves	599	674

Licensing: Industrial Emissions Directive (IED), Integrated Pollution Control (IPC) and Waste

Under Section 83 of the Environmental Protection Agency Act, 1992 the EPA is responsible for the licensing of large/complex industrial and other processes with significant polluting potential. Under Section 40 of the Waste Management Act, 1996 the EPA is responsible for the licensing of all significant waste recovery & disposal activities operated by local authorities and private enterprise.

Licensing: Waste Water Discharges (WWD)

The Waste Water Discharge (Authorisation) Regulations 2007 provide for the licensing of urban waste water discharges. Discharges from areas that serve over 500 population equivalent require a licence from the EPA. Areas that serve less than 500 population equivalent are required to be certified by the EPA. The EPA's licensing income arises from fees charged in respect of processing such licensing applications.

6 Enforcement Activities - IED & IPC, Waste, WWD and Drinking Water

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Enforcement Charges Invoiced	9,591	9,907
Enforcement Income from Prosecutions	186	226
Total Income from Enforcement Activities	9,777	10,133

Under Section 96 of the Environmental Protection Agency Act, 1992 the EPA is responsible for the regulation of large/complex industrial and other processes with significant polluting potential. Under Section 15 of the Waste Management Act, 1996 the EPA is responsible for the regulation of all significant waste recovery and disposal activities operated by local authorities and private enterprise. Under the Waste Water Discharge (Authorisation) Regulations 2007 the EPA is responsible for the regulation of waste water discharges. Under the European Union (Drinking Water) Regulations 2014 the EPA may charge for monitoring the quality of water supplies intended for human consumption. The EPA's enforcement income arises from fees charged in respect of this enforcement work.

7 Sundry Receipts

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Sundry	503	698
	503	698

8 Remuneration

(a) Aggregate Employee Benefits

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Staff short-term benefits	27,681	25,039
Termination benefits	0	0
Employer's contribution to social welfare PRSI	2,680	2,396
Total Salary Costs	30,361	27,435
IT Development Salary costs capitalised	(74)	(62)
Salary Costs charged to the Statement of Income and Expenditure and Retained Revenue Reserves	30,287	27,373

The total Salary cost of €30.4M includes an accrual of €958,000 (2021: €934,000) in respect of accumulated staff annual leave entitlements. €420,000 (2021: €307,000) of Single scheme members pension contributions has been deducted and paid over to the Department of Public Expenditure and Reform. The total number of Single Scheme members at year end was 184 (2021: 151).

In 2022, €1,066,000 of Additional Superannuation Contribution (2021: €943,000) has been deducted from staff and paid to the Department of Environment, Climate and Communications.

(b) Analysis of staff by location:

	<u>2022</u>	<u>2021</u>
Headquarters	183	183
Regional Inspectorate Castlebar	27	28
Regional Inspectorate Cork	57	59
Regional Inspectorate Dublin	139	134
Regional Inspectorate Kilkenny	26	24
Regional Inspectorate Monaghan	16	14
Regional Offices	6	6
	<u>454</u>	<u>448</u>

(c) Analysis of staff salary costs in excess of €60,000:

The number of employees whose employee benefits fell within each band of €10,000 from €60,000 upwards is as follows:

	<u>2022</u>	<u>2021</u>
€60,000 to €70,000	85	78
€70,000 to €80,000	51	52
€80,000 to €90,000	42	15
€90,000 to €100,000	24	24
€100,000 to €110,000	6	6
€110,000 to €120,000	5	3
€140,000 to €150,000	0	3
€150,000 to €160,000	4	1
€160,000 to €170,000	1	0
€170,000 to €180,000	0	1
€180,000 to €190,000	1	0

The total number of staff employed (WTE) at year end was 434.5 (2021: 415.9).

(d) Staff Short-Term Benefits

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Basic Pay	27,609	24,974
Overtime	0	0
Allowances	72	65
	<u>27,681</u>	<u>25,039</u>

(e) Key Management personnel

Key management personnel in the Environmental Protection Agency consists of the Director General and the 5 members of the Board of Directors. The Directors of the Environmental Protection Agency are full time executive Directors. They are paid an inclusive salary and consequently no Directors or Board fees are paid. The total value of employee benefits for key management personnel is set out below:

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Salary	935	860
Allowances	17	11
	<u>952</u>	<u>871</u>

This does not include the value of retirement benefits earned in the period. The key management personnel are members of the Environmental Protection Agency (Director General and Director) staff pension scheme and their entitlements in that regard do not extend beyond the terms of the model public service pension scheme.

(f) Director General Salary and Benefits

	2022	2021
	€'000	€'000
The Director General remuneration package for the financial period was as follows:		
Salary	182	175

This does not include the value of retirement benefits earned in the period. The Director General is a member of the Environmental Protection Agency (Director General and Director) staff pension scheme and her entitlements in that regard do not extend beyond the terms of the model public service pension scheme.

9 Travelling Expenses

	2022	2021
	€'000	€'000
Travel and Subsistence	1,133	366
Motor Vehicle Expenses	128	100
	1,261	466

This includes Executive Board travel expenditure of €79,237 (2021: €23,091).

10 Laboratory and Field Costs

	2022	2021
	€'000	€'000
Laboratory and Field Expenses	1,053	912
Equipment Repairs and Maintenance	689	541
Protective Clothing	43	41
	1,785	1,494

11 Accommodation Costs

	2022	2021
	€'000	€'000
Rent and Rates	735	744
Power, Light and Heat, Cleaning	889	631
Repairs, Maintenance, Security	656	541
	2,280	1,916

12 Administration Costs

	2022	2021
	€'000	€'000
Telephone and Postage	430	462
Printing of Publications and Stationery Supplies	310	384
Insurance	222	195
Computer and Data Processing Charges	4,354	4,050
Audit Fees	29	29
Corporate Governance and Internal Audit Costs	78	84
Legal fees, advice and related costs	1,791	1,419
Meeting, External Committee and Guest Speaker Expenses	496	210
Staff Appointment and other related costs	229	218
Bank Interest and Charges	63	74
Books, Periodicals, and Library	95	88
Staff Development and Training Costs	495	424
Advertising	54	80
Communications	1,256	961
Sundries	297	148
	10,199	8,826

13 Consultancy Costs

	2022	2021
	€'000	€'000
Consultants	380	285
	380	285
The EPA Offices which made use of these consultancies were:	€'000	€'000
Office of Communications and Corporate Services	35	108
Office of Environmental Sustainability	7	5
Office of Evidence and Assessment	232	86
Office of Radiation Protection and Environmental Monitoring	47	17
Office of the Director General / Cross Office	59	69
	380	285

14 Grants, Contractors and External Service Providers

	2022	2021
	€'000	€'000
Contractors and External Service Providers	6,873	7,201
Grants	1,592	2,472
	8,465	9,673
The EPA Offices which incurred costs under this heading were:	€'000	€'000
Office of Communications and Corporate Services	705	622
Office of Environmental Sustainability	2,989	3,032
Office of Evidence and Assessment	2,940	3,873
Office of Environmental Enforcement	692	926
Office of Radiation Protection and Environmental Monitoring	1,139	1,220
	8,465	9,673

15 Environmental Research

		2022	2021
		€'000	€'000
EPA Research Programme	Grant Payments	10,320	10,109
EPA Research Programme	Grant Refunds	(201)	(15)
Co-Funding Research Income		(1,029)	(1,310)
Research Programme Payments		9,090	8,784

The current EPA environmental research programme was launched in 2021. It is being funded through a combination of Exchequer funding and co-funding provided by other research funding organisations. The EPA Research Programme aims to put science and innovation at the centre of environmental protection in Ireland through the development and proactive transfer of knowledge.

Research Co- Funding		2022	2021
		€'000	€'000
In addition to the funding provided by DECC, the following research co-funding was received:			
Department of Agriculture Food and the Marine		509	346
Health Service Executive		44	211
Department of Transport		56	166
Sustainable Energy Authority of Ireland		6	147
The Marine Institute		108	138
Geological Survey of Ireland		113	87
National Parks and Wildlife Service		19	63
Met Éireann / Department of Housing, Local Government and Heritage		73	55
Office of the Planning Regulator		50	0
The Office of Public Works		36	0
Bio Diversa		0	25
Agence Nationale de la Recherche		0	21
Sundry / Other		15	51
Total Co- Funding		1,029	1,310

In 2022 EPA Research Programme expenditure was €11.404M, including Grant Payments of €10.337M as shown above and implementation and activity costs of €1,067K which are reported under the Travel, Lab and Field, Administration and Contractors cost headings.

In 2021 EPA Research Programme expenditure was €11.11M including Grant Payments of €10.109M as shown above and implementation and activity costs of €1,001K, which are reported under the Travel, Lab and Field, Administration and Contractors cost headings.

A further €269K of grant payments (2021: €327K) to research projects is included in the Grants figure at Note 14.

At 31 December 2022 commitments entered into but not yet charged to the financial statements in respect of Research projects amounted to €28.886M (2021: €24.841M) with the following breakdown:

	2022	2021
	€'000	€'000
Outstanding Grant Commitments at 1 January	24,841	24,391
Grants Approved during the year	15,758	11,166
Grants Decommited during the year	(1,328)	(295)
Grant Payments made in the year	(10,604)	(10,436)
Refunds of Grant payments received in the year	201	15
Outstanding Commitments at 31 December	28,868	24,841

These figures exclude EPA implementation costs in respect of Research programmes.

16 Depreciation of Fixed Assets

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Depreciation of Property, Plant and Equipment (Note 19)	5,552	5,762
	<u>5,552</u>	<u>5,762</u>

17 Capital Account

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
At 1 January 2022		37,876
Transfer from Income and Expenditure Account:		
Income Allocated for Capital purposes - Fixed Asset Additions	5,410	
Less:		
Disposals at cost	(299)	
Less prior depreciation on disposals	299	
	0	
Depreciation charge for year	(5,552)	
Net Transfer (to) / from Income and Expenditure Account		(142)
At 31 December 2022		<u>37,734</u>

At 31 December 2022 the Capital Account balance includes €14,175 (2021: €15,623) in respect of prepayments for fixed assets (see Note 20 - Receivables).

18 Taxation

The EPA is specifically exempted under the provisions of Section 32, and Schedule 2, of Finance Act, 1994. Accordingly, no taxation charges have been included in the accounts.

19 Fixed Assets - Property, Plant & Equipment

	<u>Total</u>	<u>Buildings</u>	<u>Furniture & Fittings</u>	<u>IT & IS Equipment</u>	<u>Lab & Field Equipment</u>	<u>Motor Vehicles</u>
Cost	€'000	€'000	€'000	€'000	€'000	€'000
At 1 January 2022	93,302	44,468	6,155	28,895	12,549	1,235
Additions	5,410	933	772	2,384	1,235	86
Disposals	(299)	0	(13)	(12)	(230)	(44)
At 31 December 2022	<u>98,413</u>	<u>45,401</u>	<u>6,914</u>	<u>31,267</u>	<u>13,554</u>	<u>1,277</u>
Depreciation						
At 1 January 2022	55,420	16,080	4,667	24,524	9,025	1,124
Charge for Year	5,552	876	656	2,758	1,181	81
On Disposals	(299)	0	(13)	(12)	(230)	(44)
At 31 December 2022	<u>60,673</u>	<u>16,956</u>	<u>5,310</u>	<u>27,270</u>	<u>9,976</u>	<u>1,161</u>
Net Book Value						
At 31 December 2022	37,740	28,445	1,604	3,997	3,578	116
At 31 December 2021	37,882	28,388	1,488	4,371	3,524	111

The EPA regional inspectorate building at Seville Lodge, Kilkenny was constructed by the Office of Public Works on a site acquired for EPA. The legal transfer of the site to the EPA is being processed by the OPW through the Chief State Solicitors Office.

In 2022 the EPA capitalised €2.088M (2021: €2.288M) in respect of the external cost and €74K (2021: €62K) in respect of the internal salary cost of software development for internal use. This is in line with our Accounting Policy for Capitalisation of Internally Developed Software.

20 Receivables

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Debtors	1,707	1,727
Prepayments	1,962	1,509
Prepayments for Fixed Assets	14	16
	<u>3,683</u>	<u>3,252</u>

21 Cash and cash equivalents

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Cash and Bank Balances	<u>8,462</u>	<u>10,350</u>

22 Payables

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Amounts falling due within one year:		
Licence Fees Prepaid	1,765	1,441
Other Deferred Income	309	586
Trade and Other Expenses	6,835	6,846
	<u>8,909</u>	<u>8,873</u>

Included in Trade and Other Expenses above are the following amounts due to the Revenue Commissioners:

Professional Service Withholding Tax	381	364
PAYE/PRSI/USC	897	769
VAT	317	371
Relevant Contract Tax	0	2
	<u>1,595</u>	<u>1,506</u>

23 Retirement Benefit Costs

(a) Analysis of total retirement benefit costs charged to the Statement of Income and Expenditure and Retained Revenue Reserves

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Current Service Cost	11,293	9,945
Interest on retirement benefit scheme liabilities	3,989	2,438
Employee Contributions	(1,487)	(1,331)
	<u>13,795</u>	<u>11,052</u>

(b) Movement in net retirement benefit obligations during the financial year

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Net retirement benefit obligation at 1 January	334,807	306,587
Current service costs	11,293	9,945
Interest costs	3,989	2,438
Actuarial (gain) / loss	(111,616)	20,278
Pensions paid in the year	(4,634)	(4,441)
Net retirement benefit obligation at 31 December	<u>233,839</u>	<u>334,807</u>

(c) Deferred Funding for Retirement Benefits

The EPA recognises these amounts as an asset corresponding to the unfunded deferred liability for retirement benefits on the basis of the set of assumptions described below and a number of past events. These events include the statutory basis for the establishment of the retirement benefit schemes, and the policy and practice currently in place in relation to funding public service pensions including contributions by employees and the annual estimates process. The EPA has no evidence that this funding policy will not continue to meet such sums in accordance with current practice.

The net deferred funding for retirement benefits recognised in the Statement of Income and Expenditure and Retained Revenue Reserves was as follows:

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Funding recoverable in respect of current year retirement benefit costs	15,282	12,383
Resources applied to pay retirement benefits	(4,634)	(4,441)
	<u>10,648</u>	<u>7,942</u>

The deferred funding asset for retirement benefits at 31 December 2022 amounted to €233.8M (2021: €334.8M).

(d) History of defined benefit obligations

	<u>2022</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>
	<u>€ M</u>	<u>€ M</u>	<u>€ M</u>	<u>€ M</u>	<u>€ M</u>
Defined benefit obligations	234	335	307	280	248
Experience gains / (losses) on defined benefit scheme liabilities:					
Amount (€ M)	(5.489)	3.143	3.606	7.264	(0.688)
Percentage of Scheme Liabilities	-2.3%	0.9%	1.2%	2.6%	(0.3%)

The cumulative actuarial loss recognised in the Statement of Comprehensive Income amounts to **€47.5M (2021: €159.1M)**.

(e) General Description of the Schemes

The schemes are defined benefit final salary pension arrangements with benefits and contributions defined by reference to current "model" public sector scheme regulations. The schemes provide staff members with a pension (being 1/80 per year of service), a gratuity or lump sum (being 3/80 per year of service) and spouse's and children's pensions. Normal Retirement Age is a member's 65th birthday, and pre-2004 members have an entitlement to retire without actuarial reduction from age 60. The schemes provide Board members with a pension (being 1/48 per year of service), a gratuity or lump sum (being 1/32 per year of service) and spouse's and children's pensions. Board members are entitled to retire when their contract ends. Pensions in payment (and deferment) normally increase in line with general public sector salary inflation.

The valuation used for FRS 102 disclosures has been based on a full actuarial valuation performed on 31 March 2023 by a qualified independent actuary, taking account of the requirements of the FRS in order to assess the scheme liabilities at 31 December 2022.

The principal actuarial assumptions were as follows:

	<u>2022</u>	<u>2021</u>
Future salary increases	3.60%	3.20%
Future retirement benefit increases	3.60%	2.70%
Future state pension increases	2.60%	2.20%
Discount rate	3.60%	1.20%
Future inflation	2.60%	2.20%
Revaluation in deferment	3.10%	2.70%

Mortality

Mortality Pre-Retirement - Nil.

Mortality Post Retirement - Male: 58% of ILT15, Female 62% of ILT15.

The mortality basis adopted explicitly allows for improvements in life expectancy over time, so that life expectancy at retirement will depend on the year in which a member attains retirement age. The table below shows the life expectancy for members attaining age 65 in 2022 and 2042.

Year of attaining age 65	<u>2022</u>	<u>2042</u>
Life expectancy - male	86.9	89.2
Life expectancy - female	89.3	91.3

24 Lease Commitments

At 31 December 2022 the Environmental Protection Agency had the following future minimum lease payments under non-cancellable operating leases for each of the following periods:

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Payable within one year	679	639
Payable within two to five years	1,991	2,004
Payable after five years	1,511	2,000

Operating lease payments recognised as an expense were €720K, (2021: €720K).

25 Related Party Disclosures

The EPA has adopted procedures to govern its decision making in accordance with the Environmental Protection Agency Act, 1992 and the Ethics in Public Office Act, 1995 and regulations made thereunder. These procedures have been adhered to by the EPA during the year.

Key management personnel in the EPA consist of the Director General and the members of the Board of Directors. Total compensation paid to key management personnel, including Directors salaries, vouched expenses and the Director General's remuneration amounted to €1,029K (2021: €894K).

In the normal course of business the Agency may approve grants and may also enter into other contractual arrangements with undertakings in which EPA Key management personnel have an interest.

The following transactions were carried out with related parties:

	<u>2022</u>	<u>2021</u>
	<u>€'000</u>	<u>€'000</u>
Purchase of Goods and Services:		
Other Related Parties	64	28
	64	28
Payable to related parties:		
Other Related Parties	13	3
	13	3

These payables arise from purchase transactions.

In cases of potential conflict of interest, Board members absent themselves and do not participate in discussions regarding these matters.

26 Comparative Figures

Some changes have been made to the presentation of items in the financial statements and the comparative figures have been reclassified where necessary on a basis consistent with the current year presentation.

27 Approval of Financial Statements

The Financial Statements were approved by the Board of Directors on 27 June 2023.



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