Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Environmental Protection Agency
Annual Report and Accounts
2020

ENVIRONMENTAL PROTECTION AGENCY

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

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

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

Knowledge: *Providing high quality, targeted and timely environmental data, information and assessment to inform decision making.*

Advocacy: *Working with others to advocate for a clean, productive and well protected environment and for sustainable environmental practices.*

Our responsibilities include:

Licensing

- Large-scale industrial, waste and petrol storage activities;
- Urban waste water discharges;
- The contained use and controlled release of Genetically Modified Organisms;
- Sources of ionising radiation;
- Greenhouse gas emissions from industry and aviation through the EU Emissions Trading Scheme.

National Environmental Enforcement

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

Waste Management and Chemicals in the Environment

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

Water Management

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

Climate Science & Climate Change

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

Environmental Monitoring & Assessment

- Design and implement national environmental monitoring systems: technology, data management, analysis and forecasting;
- Produce the State of Ireland's Environment and Indicator Reports;
- Monitor air quality and implement the EU Clean Air for Europe Directive, the Convention on Long Range Transboundary Air Pollution, and the National Emissions Ceiling Directive;
- Oversee the implementation of the Environmental Noise Directive;
- Assess the impact of proposed plans and programmes on the Irish environment.
- Environmental Research and Development
- Coordinate and fund national environmental research activity to identify pressures, inform policy and provide solutions;
- Collaborate with national and EU environmental research activity.

Radiological Protection

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

Guidance, Awareness Raising, and Accessible Information

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

Partnership and networking

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

Management and structure of the EPA

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

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

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

ENVIRONMENTAL PROTECTION AGENCY

Annual Report and Accounts, 2020

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The layout of this report has been structured and aligned to reflect the EPA Strategic Plan 2016–2020: *Our Environment, Our Wellbeing.*

Key Statistics — 2020 in Numbers

AUTHORISATIONS

131 environmental authorisations issued

69 authorisation amendments completed

2 End-of-waste criteria agreed for LDPE plastic

305 radiation authorisations and 632 technical amendments issued

494 Article 27 By-Product Notifications Processed

ENFORCEMENT

127 urban wastewater and 51 drinking water site visits

1,089 visits to industrial, waste, dumping at sea and VOC facilities

13 prosecutions concluded in 2020

75 inspections of Radiological Licensees

12 sites on the National Priority Sites for Enforcement in 2020; the agri-food and waste sectors accounted for the majority of sites on the list.

5 drinking water Directions issued to Irish Water

MONITORING

The following were monitored for chemistry parameters:

1,761

1,179 Rivers, 222 lakes, 272 Groundwaters and 88 Transitional & Coastal Waters were monitored for biological and chemical parameters.

18 AQ monitoring stations added to the network

119 Public/Private drinking water supplies for radioactivity

88 air monitoring stations operating

CIRCULAR ECONOMY

800 Close to 800 businesses registered on the national repair directory (repairmystuff.ie)

1,350+ companies and public bodies used the TREE online tool to assess resource efficiency performance and generate a tailored action plan for improvement

5 major retailers (representing nearly 70% of the Irish grocery market) signed the Food Waste Charter

33 applications received for the Green Enterprise: Innovation for a Circular Economy programme, and 6 new projects were awarded funding

4.6m a national Stop Food Waste 'Eat It or Freeze It' campaign reached 4.6 million people in November

29,000+ people engaged with the Stop Food Waste programme by following social media channels

INFORMATION

1,046,496 sessions on **www.epa.ie**

Twitter (EPAIreland, Stopfoodwaste, EPA Catchments, EPA Beaches, EPA Research, EPA Air Quality, EPA Ecology): 42,969
Instagram (EPA Ireland): 1,681
LinkedIn (EPA Ireland and EPA Research): 18,477
YouTube: 1,593

10,300+ environmental complaints reported

This includes:
5,800+ via *See it? Say it?* App; 2,200+ via National Complaints Line; 2,300+ direct to EPA including 1,300+ about licensed activities and 30+ about drinking water supplies).

2,410+ environmental queries from the public

310 EPA datasets uploaded to data.gov.ie (53,486 total views)

113 information requests (60 FOI and 53 AIE)

RESEARCH

54 Research Reports, 25 Climate, 22 Sustainability and 7 Water

EMERGENCY PREPAREDNESS

20 in-house emergency exercises held

7 international emergency exercises participated in

RADON

102,441 pageviews of radon related content on the website

We Need Vision and Implementation to Protect Ireland's Environment and our Health and Wellbeing

SOE 1: Environmental Policy Position

A national policy position for Ireland's environment.

SOE 2: Full Implementation

Full implementation of existing environmental legislation and a review of the governance around the coordination on environmental protection across public bodies.

SOE 3: Health and Wellbeing

Protecting the environment is an investment in our health and wellbeing.

Step Up to Protect the Environment Around Us as it is Under Increasing Threat

SOE 4: Climate

Systemic change is required for Ireland to become the climate-neutral and climate-resilient society and economy that it aspires to be.

SOE 5: Air Quality

Adoption of measures to meet the World Health Organization air quality guideline values should be the target to aim for in the Clean Air Strategy.

SOE 6: Nature

Safeguard nature and wild places as a national priority and to leave a legacy for future generations.

SOE 7: Water Quality

Improve the water environment and tackle water pollution locally at a water catchment level.

SOE 8: Marine

Reduce the human-induced pressures on the marine environment.

System Change – Delivery on Sectoral and Societal Outcomes Needs to be Accelerated

SOE 9: Clean Energy

Ireland needs to move rapidly away from the extensive use of fossil fuels to the use of clean energy systems.

SOE 10: Environmentally-sustainable Agriculture

An agriculture and food sector that demonstrates validated performance around producing food with a low environmental footprint.

SOE 11: Water Services

Drinking water and wastewater infrastructure must meet the needs of our society.

SOE 12: Circular Economy

Move to a less wasteful and circular economy where the priority is waste prevention, reuse, repair and recycling.

SOE 13: Land Use

Promote integrated land-mapping approaches to support decision-making on sustainable land use.

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

VISION

A clean, healthy and well protected environment supporting a sustainable society and economy.

MISSION

To protect and improve the environment as a valuable asset for the people of Ireland.

To protect our people and the environment from the harmful effects of radiation and pollution.

VALUES

Our Stewardship

We are a trusted, independent and authoritative advocate for the environment.

We make objective decisions based on the best available scientific evidence and information.

We manage our resources effectively and efficiently to deliver value to the public.

Our Work

We regulate in a fair, proportionate and transparent manner and target those who don't comply.

We make a difference by working with others to foster trust and build networks and partnerships to deliver effective outcomes.

We strive continuously for improvement and excellence through learning and development.

Our Service

We are innovative, adaptive and open to new and flexible ways of working.

We design and deliver services from the citizen's point of view.

We provide our services in a manner that is competent, courteous and responsive.

Our Colleagues

We work together to deliver effective outcomes.

We support, trust and value our colleagues and empower each other to make decisions.

We are open and honest with each other.

We constructively challenge and encourage each other to do better.

WHAT WE DO

Knowledge

Provide high quality, targeted and timely environmental data, assessments and evidence to inform decision making by citizens, businesses and Government.

Regulation

Implement effective regulation and environmental compliance systems to deliver good outcomes for people and the environment and target those who don't comply.

Advocacy

Work with others to advocate for a clean, healthy and well protected environment and sustainable environmental behaviour.

HOW WE DO IT

- Monitoring & Assessment
- Research & Expertise
- Timely & Accessible Information
- Licensing
- Enforcement
- Guidance
- Partnering & Networking
- Awareness Raising
- Promoting Sustainable Behaviour

Strategic Goals
for the period 2016-2020

Goals	Objectives	Outcomes What we will have achieved by 2020
Trusted Environmental Regulator	**Ensure** the ongoing development of a proportionate and effective regulatory approach. **Align** EPA resources to target interventions and reduce environmental risk.	◢ A risk-based, responsive regulatory approach that engages stakeholders and protects the environment and people. ◢ Reduced environmental risks at EPA-regulated facilities through tailored interventions and by ensuring appropriate financial provisions are in place. ◢ Driven the improved delivery and management of water and waste infrastructure.
Leader in Environmental Evidence & Knowledge	**Realise** the full potential of the EPA's knowledge, skill, expertise and regional presence as key national resources in the protection of the environment and human health. **Accelerate** the provision of timely and tailored information to meet the specific needs of stakeholder groups.	◢ More timely evidence-based environmental assessments to inform policy and decision making at national, regional and local levels. ◢ Better provision of online, up-to-date and accessible information on the environment to stakeholders. ◢ A research programme that addresses knowledge gaps and helps identify solutions to emerging and complex environmental problems.
Effective Advocate and Partner	**Strengthen** the EPA's capability and capacity to influence, advocate and partner to help achieve a clean, healthy and well protected environment. **Engage** the public in the protection and improvement of the environment. **Promote** a greater awareness of the impact of environment quality on human health.	◢ Targeted opportunities to integrate environmental priorities and sustainability into sectoral, economic and social policies. ◢ Developed public participation programmes to increase awareness of environmental issues and support the engagement of the public in environmental protection. ◢ Collaborated with health agencies and other bodies to realise the benefits of a good environment for health and wellbeing.
Responding to Key Environmental Challenges	**Tackle** the challenges to deliver improved water quality in Ireland. **Engage** with other strategic partners to promote the development of a holistic national response to climate change. **Enhance** air and radiation protection in Ireland.	◢ Effective and resilient structures in place to deliver better outcomes for water quality. ◢ Established a climate change secretariat in the EPA as a centre of excellence that supports the national transition to a low carbon economy. ◢ Strengthened the air quality and radiation protection frameworks to further protect people and the environment.
Organisationally Excellent	**Develop** our staff and align our organisation to deliver best environmental outcomes. **Focus** on the development and promotion of organisational health, wellbeing and safety at work. **Promote** a culture of leadership, reform and innovation.	◢ Our functions and resources aligned to be responsive and adaptable to meet emerging challenges. ◢ Engaged all staff to foster a supportive workplace environment. ◢ Enhanced capacity in the area of organisational change and in the use of ICT to support reform and innovation.

List of abbreviations

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

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1. DIRECTOR GENERAL'S STATEMENT

The Environmental Protection Agency (EPA) is an independent public body responsible for protecting and improving the quality of our environment. We ensure that regulated activities meet environmental and radiation protection standards. We advocate for the environment and promote the link between health and wellbeing, the economy and a clean environment. As a knowledge provider, we provide evidence-based science to enable better decision making.

2020 was a year which saw many sectors of the economy severely affected by the Covid-19 pandemic. Despite significant challenges, during this time the essential work of the EPA continued, including responding to complaints, incidents and emergencies, carrying out site inspections and engaging with licensee's and the public where necessary.

It is my pleasure to present to you the EPA 2020 Annual Report and Accounts which provides an overview of progress made on implementing our current strategy: *Our Environment, Our Wellbeing* and provides details of our activities during this extraordinary year, together with our financial statements.

Covid-19 Global Pandemic

The EPA published 'Ireland in the Pandemic: Environmental Observations' in July which examined emerging environmental trends during the pandemic and observed activities across thematic areas including air quality, waste, pollutants and greenhouse gas emissions, water environment, enforcement and compliance.

The report found that during the first phase of the pandemic there was a lower level of emissions of greenhouse gases and air pollutants. Air quality improved in urban areas with a significant decrease of pollution from traffic, however there was no change in pollution from burning solid fuels in the home. There was a sharp rise in household waste and a decrease in commercial and retail waste. With the increase in domestic waste, there was evidence of an increase in illegal dumping and enquiries to the EPA increased fourfold in relation to illegal backyard burning. Overall, the report highlighted that while there were positives associated with a lower societal impact on the environment during the first phase of the pandemic, the situation did not reflect normal economic activity.

In collaboration with the Sustainable Energy Authority of Ireland, the EPA published 'The impact on 2020 greenhouse gas emissions of COVID-19 restrictions'. The report showed that Ireland's 2020 greenhouse gas emissions are estimated to be almost 6 percent lower due to the pandemic. This dramatic decline is attributed to reduced economic activity and travel in 2020. The biggest changes were in the Transport sector with emissions estimated to have reduced by over 2 Mt CO_2eq compared to 2019, a fall of almost 17%. Residential sector emissions (mainly home heating) are estimated to have increased by 9% (0.6 Mt CO_2eq) in 2020 as many people continued to work from home. The overall reduction is comparable to that seen following the global financial crisis, however, the economic rebound from the Covid-19 crisis is estimated to bring emissions back to previous levels, unless additional action is taken. Focussing on climate action as part of a 'green' recovery stimulus offers the opportunity to rebuild our economy, generate new jobs and respond to climate change.

Public Attitudes Survey

In a year marked by the Covid-19 pandemic, the EPA carried out a survey to measure public attitudes towards the environment. This survey found that 89 percent of adults agreed that the environment is a valuable asset for the people of Ireland. The value of the work of the EPA in protecting Ireland's environment was highlighted by the survey finding that 84 percent of people felt access to nature was important for their mental and physical health. The new research also highlighted that 4 in 5 people took steps to help protect the environment in 2020.

The results also showed that 3 in 5 adults used less fuel for transport during the pandemic, while the majority of the Irish population have started walking or cycling, considered buying locally produced goods and have increased recycling. In addition, 54 percent said they placed climate change as one of the top three environmental concerns facing Ireland, with one third stating that it affects them personally.

State of Environment Report 2020

In November, the EPA published its State of Environment Report *Ireland's Environment: An Integrated Assessment 2020*. The latest assessment found that enduring and systemic challenges are putting pressure on the environment. These pressures cut across different environmental topics including climate, air, soil, water, biodiversity and waste, and across organisations and sectors, business and all levels of society. Almost ninety percent of Ireland's energy is generated from fossil fuels giving rise to greenhouse gases. Air quality in some urban areas doesn't meet the World Health Organisation (WHO) standards. Nature and habitats are being damaged with 85% of EU listed habitats in an unfavourable condition. Wetland bird species, such as curlew are under threat as a breeding species. Raw sewage is being discharged to water from 35 towns and villages and even more stark is the dramatic reduction in the number of Ireland's most pristine rivers, which have fallen from over 500 sites to only 20 sites in 30 years. Nutrient concentrations in rivers and nutrient inputs to the marine environment are increasing. More than one million tonnes of food waste are generated each year in Ireland and littering remains a problem.

Modern environmental problems are complex and require an accelerated societal response towards making the necessary transition towards a sustainable future. It is therefore more important than ever that we tackle these problems in an integrated way, working together to protect and improve our natural environment. The significant challenges we face cannot be looked at in isolation, they are interconnected and need to be tackled in an integrated way. The Report highlighted the need for an overarching Environmental Policy Position for Ireland – to be clear on our ambition to protect Ireland's environment in the short, medium and long-term and on our commitment to live up to the image of a Clean Green Island. As part of this overall commitment to the environment and its protection we need to see a decade of action in the 2020s.

In Conclusion

In my role as Director General, I wish to acknowledge the hard work and commitment of the staff of the EPA throughout 2020 and to thank my fellow Directors for their dedication and support in delivering on our strategic goals. We remember our friend and colleague Dr Ciara McMahon whose untimely passing came as a shock to us all. We also remember John Doheny based in our Cork Regional Inspectorate who passed away following a lengthy illness.

I would like to extend my best wishes to the following EPA colleagues who retired during 2020, after many years of dedicated service: Jack Madden, Matthew Crowe, Donal Quinn, Noeleen Roche and Patrick Geoghegan. 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
EPA Director General

2 Implement effective regulation and environmental compliance systems to deliver good outcomes for people and the environment and target those who don't comply.

The EPA grants authorisations which ensure that emissions from activities do not endanger human health or harm the environment.

2. REGULATION

2.1 LICENSING

The EPA's environmental licensing programme 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 our industrial licences within four years of new Best Available Techniques (BAT) conclusions being published.

By the end of 2020, 17 Commission Implementing Decisions on BAT conclusions had been published, the most recent being the Surface Treatment using Organic Solvents, Food and Drink and Waste Incineration sectors which requires that licences in those sectors will need to be reconsidered and re-assessed by December 2024.

Environmental licensing and permitting decisions in 2020 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, almost half of the new applications for IE/IPC or Waste licences received in 2020 were applications in the intensive agriculture sector.

The Medium Combustion Plant (MCP) regulations were signed into law in December 2017 and are being implemented based on an EPA-led risk-based approach. Their purpose is to limit emissions to atmosphere from boilers and other stationary combustion plants in the 1–50 MWth (thermal input capacity) range. At the end of 2020 a total of 201 MCPs were registered – the majority of which were emergency generators at datacentres.

The EPA continues to regulate for a circular economy through End-of-Waste applications and By-Product notifications. Draft guidance for By-products and End-of-Waste were published for consultation in June 2020, along with a standard End-of-Waste application form. In addition, progress was continued in 2020 in the areas of Historic Landfills and the issuing of Certificates of Authorisation.

Consents issued in respect of GMO activities related predominantly to research facilities and presented low or negligible risk. In addition, the EPA issued four Dumping–at-Sea Permits and one Wastewater Discharge Authorisation. The EPA has also examined 513 licences in accordance with the Wastewater Discharge (Authorisation) Regulations 2007 as amended. The EPA is actively participating in the 'pre-legislative scrutiny' phase of the Water Environment (Abstractions and Impoundments) Bill - Revised General Scheme. This included attendance as witness at the Joint Oireachtas Committee (JOC) in November 2020.

In line with strategic commitments 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 will enable 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.

For the 2019 reporting year, there were 104 stationary installations (industries, power stations and other high-energy users) with reportable CO2 emissions. All installations complied with reporting and surrender deadlines in 2020. The results from the installations covered by the ETS for 2019 showed that greenhouse gas emissions from Irish companies decreased by 8.7% (1.3 million tonnes). This was largely due to the 12% decrease in emissions from the power generation sector, due to the strong presence of renewable energy on the grid. Industrial sectors, on the other hand, showed only a slight drop in emissions.

Aviation emissions from flights within the European Economic Area reported to Ireland rose by 2.8 percent compared to 2018, to 12.77 million tonnes. 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. Eleven aircraft operators were above the threshold for reporting to Ireland in 2019, according to Eurocontrol data, and all 11 reported on time and surrendered the necessary EU allowances during 2020.

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 first CORSIA reporting deadline was the 31 August 2020 where each Member State was required to submit Total annual CO2 emissions per State pair 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 next allocation period (2021-2025) is provided in the National Implementation Measures (NIMS) list as submitted to the EU Commission in September 2019. In 2020, following consultation with affected operators, further updates were submitted to the Commission by the set deadlines, in addition to detailed responses to queries raised by the Commission in accordance with Free Allocation Regulation (EU) 2019/331.

The auctioning of ETS allowances takes place on a common platform (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. Revenues due to Ireland in 2020 from Auctions of EU ETS stationary (EUAs) and aviation allowances (EUAAs) totalled €124 million (€124,540,385). The price of carbon continued to rise in 2020 with the highest auction clearing price of €30.92 in December 2020. Auctioning for the EU Innovation Fund commenced in July 2020. For 2020 this was facilitated by Member States, including Ireland, but the revenue went directly to the European Central Bank who are responsible for the management of the fund.

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. The Irish domain of the Union Registry, managed by the EPA, had 522 users at the end of 2020.

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 2017 against our target for that year on 26 March 2020 as instructed by the Department of the Environment, Climate and Communications (DECC). The allocation for 2017 was used and part of the surplus allocation from previous years, with lower emissions, which had been carried forward. This is one of the flexibilities available to EU Member States under the ESD. Further information is available on the EU Commission website.

Table 1. Environmental Licensing Programme (licensing activities 2020)

Licence type	Total applications received 2020	Total objections received 2020	Total Proposed Decisions issued 2020	Total Final Decisions issued 2020	Total Decisions issued 2020
IED/IPC Licences (includes IE Waste)	38	34	37	35	72
Waste Licences	2	1	6	4	10
Wastewater Licences	2	N/A	N/A	1	1
Wastewater Certificates of Authorisation	0	N/A	N/A	0	0
GMO Permits (Contained use)	34	N/A	N/A	35	35
GMO Permits (Deliberate release)	1	N/A	N/A	1	1
Historic Landfill Certificates	10	2	6	5	11
Dumping at Sea Permits	1	N/A	N/A	4	4
Certificates of Registration (Waste)	4	N/A	N/A	2	2
Volatile Organic Compound (VOC) Permits	0	N/A	7	7	14
Greenhouse gas permits	48	N/A	N/A	37	37
Total	**140**	**37**	**56**	**131**	**187**

N/A, not applicable.

Table 2. Environmental Licensing Programme (other regulatory activities 2020)

Tasks	Total tasks assessed 2020
Article 11 requests	78
IE/IPC Amendments	46
IE/IPC Amendments (EPA initiated)	6
Waste Amendments	1
Wastewater treatment Plant (WWTP) Amendments	13
Dumping at Sea Amendments	0
GMO Amendments	3
Article 27 notifications (by-product)	494
Article 28 Applications (end of waste)	9
European Medicine Agency (GMO)	7
Directive 2001/18/EC (GMO)	0
Transfers	15
Air Pollution Appeals	1
Planning correspondences examined	91
Medium Combustion Plants registered	123
Total	**887**

Radiation protection authorisations

During 2020, radiation protection authorisations (Table 3.) were fully transitioned to the new graded authorisation system, as provided for in the Ionising Radiation Regulations 2019 (IRR19). This system 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 continues to apply 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. Radiation protection authorisations

Licences	253
Registrations	1,355
Technical Amendments	632
Closed Licences	27

The EPA implements and enforces environmental and radiological protection legislation in Ireland.

2.2 ENFORCEMENT

Industrial and Waste Licence enforcement

The EPA licensed and regulated 830 industrial and waste facilities during 2020. 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 is set out in Figure 1 below. Table 4 includes the number of inspections carried out on industrial and waste licensed activities.
www.epa.ie/publications/compliance--enforcement/licensees/performance/oee-enforcement-policy.php

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 2020, the EPA focused on sectors that were more impacted than others by the Covid-19 pandemic such as the waste sector (hazardous and non-hazardous transfer stations, incinerators, co-incinerators and clinical waste treatment facilities), cement production, and meat processing. The EPA closely monitored waste facilities that were subject to increases in the volume of waste presented for treatment of infectious healthcare waste while some outlets (such as cement plants) temporarily ceased operations during the year. Remote Compliance Assessments of licensed sites were introduced as an enforcement tool during the pandemic to continue EPA inspections and enforcement activities.

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 4), incidents, compliance investigations and non-compliances with the licence. This list was published quarterly with 12 licensed sites included on the list at least once during 2020. The EPA's enforcement activities are summarised in the infographic in Figure 2.

Figure 2. Summary of EPA enforcement activities

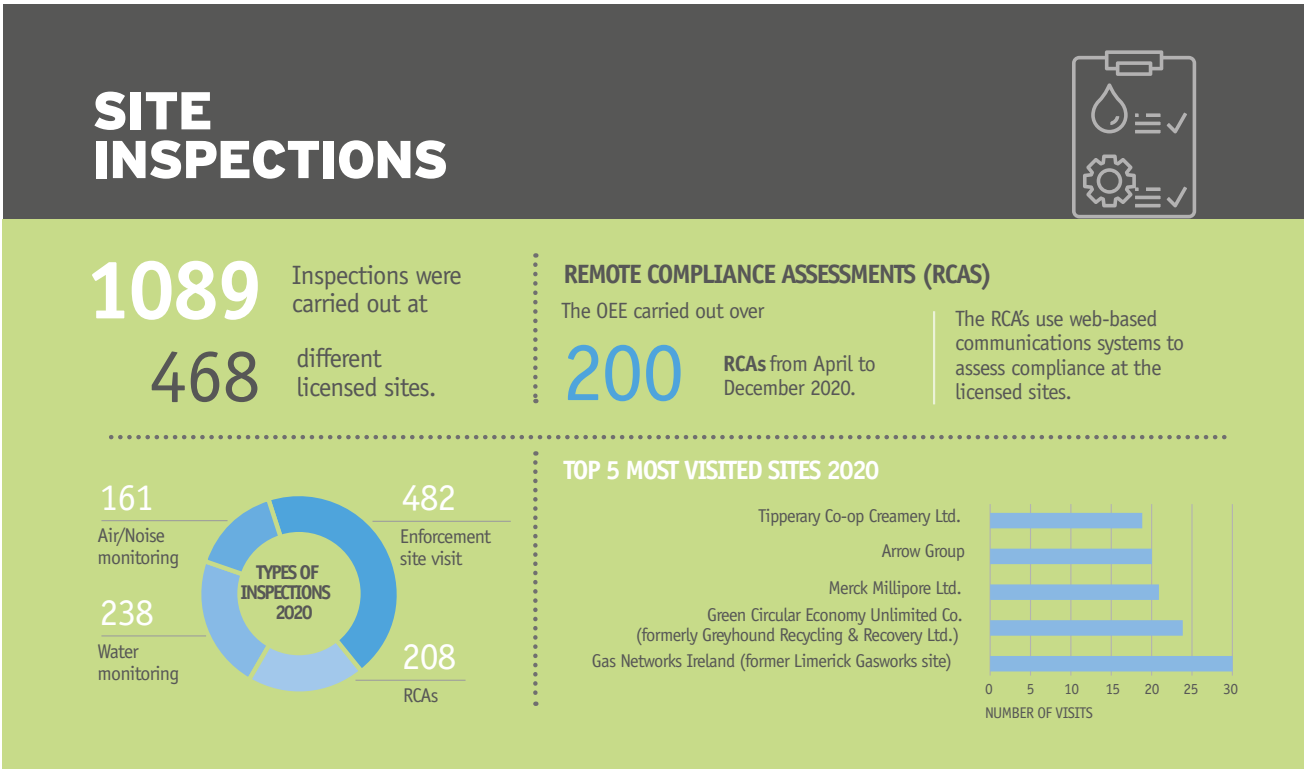


Table 4. Number of Inspections by Sector Undertaken in 2020

Activity	Number of inspections
Industrial and Waste Licences	1,089
Urban Waste Water Discharge Licences	126
Drinking water treatment plants	51
Dumping at Sea Permits	0
Volatile Organic Compound Permits	0
Market surveillance – chemicals	152
ODS and F-gas	7

Table 5. Number of complaints received in 2020 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	1,161	121
Urban Wastewater	133	47
Drinking water	30	26
ODS and F-Gas	11	N/A
Total complaints	**1,335**	

Clean water

As environmental regulator for public water services, the EPA focused on Irish Water's delivery of priority infrastructure improvements in drinking water and urban wastewater during 2020.

Drinking water

The number of public water supplies on the EPA Remedial Action List (RAL) showed some progress in 2020, with a net decrease of six supplies. There are currently 46 supplies on the RAL which serve 1,004,997 people.

During 2020, 51 drinking water audits were completed. In July 2020, the EPA published the Public Supplies Drinking Water Report for 2019. Five Directions were issued to Irish Water in 2020, compared to 20 Directions in 2019. The EPA prosecuted Irish Water for failing to comply with EPA Directions for works to ensure trihalomethanes (THM) compliance at two public water supplies in Cork (Kealkill and Drimoleague).

There was an overall reduction in the population affected by boil water notices and water restrictions in 2020, as shown in Table 6 below. Most notices lasted greater than 30 days, which is a concerning trend of long-term boil water notices. At the end of the year, only 1,335 people remained on boil water notices and only 18 people remained on water restrictions.

Table 6. Boil Water Notices and Water Restrictions

Advisory Notices issued by Irish Water	2019	2020
Boil Water Notices	67 notices affecting 695,364* people	44 notices affecting 79,030 people
Water Restrictions	8 notices affecting 8,136 people	17 notices affecting 4,118 people

*Of this figure, 615,539 people served by Leixlip water treatment plant were affected by boil water notices twice in 2019.

The EPA is very concerned about the lack of progress by Irish Water in the removal of lead connections in the public network in 2020. Only 3,025 lead connections were replaced, significantly down from 15,248 replacements in 2019. The total number of replacements now stands at 35,666 out of approximately 180,000 lead connections.

Irish Water's progress in installing orthophosphate dosing to reduce the solubility of lead from pipework is very slow, with only one plant (Lough Talt) completed in 2020. There are 10 additional plants at which orthophosphate dosing facilities are installed but not operating, due to Irish Water budget constraints. This is most unsatisfactory because Irish Water has spent money installing dosing equipment but the public health outcome of reducing exposure to lead in drinking water has not been achieved.

The number of water supplies affected by pesticide exceedances increased to 37 from 26 supplies in 2019. This indicates a deteriorating and more widespread trend of pesticides exceedances in drinking water. While the herbicide MCPA continued to dominate, there was a marked increase in the number of Glyphosate exceedances this year. There was some good news in that two supplies were removed from the EPA's pesticides action list: Kilkenny City (Troyswood) and Abbeyfeale, following the success of catchment measures to prevent pesticides entering drinking water sources. At the end of the year, there were 6 supplies on the pesticides action list, and a further 36 supplies being monitored on the pesticides watch list.

Municipal wastewater discharges

During 2020, the EPA completed 127 wastewater site inspections focusing on plant performance, compliance monitoring of discharges and responding to complaints and incidents. These inspections led to improved compliance at wastewater treatment plants, minimising the impact of wastewater discharges on the receiving environment.

The EPA published the 2019 Urban Wastewater Report in 2020 identifying the following priority issues that must be addressed to protect our environment from the harmful effects of wastewater discharges.

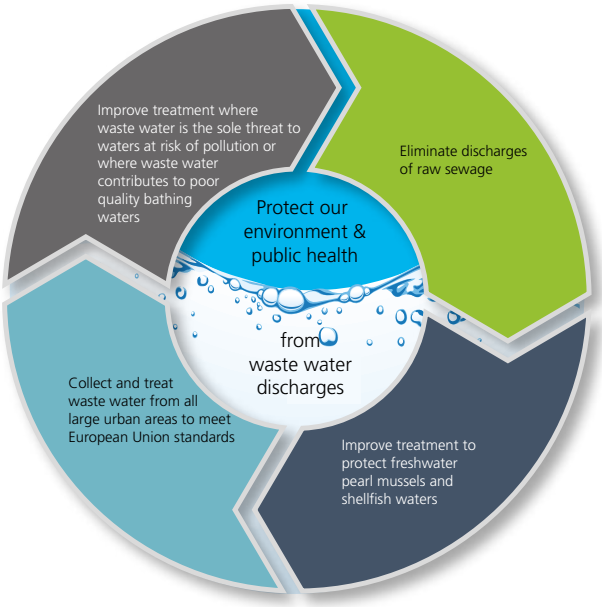
- Ensure wastewater treatment at all large urban areas meets European Union standards.
- Eliminate discharges of raw sewage.
  - Improve treatment where wastewater is the main threat to waters at risk of pollution or where wastewater contributes to poor quality bathing waters.
- Improve treatment where needed to protect endangered freshwater pearl mussels.
- Upgrade the sewerage systems found non-compliant with European Union requirements.

The Report highlighted the following improvements:

- A reduction in the number of priority areas from 148 in 2017 to 113 in 2020.
  - The number of large towns and cities which failed to comply with the European Wastewater Treatment Directive improved from 28 in 2017 to 19 in 2019.
  - One area (Killala) with raw sewage discharges and nine water bodies which were not meeting their environmental objectives due to wastewater pressures were resolved in 2020.

Despite these improvements, the EPA raised concerns with the delays and uncertainty in Irish water's delivery of critical improvements to infrastructure which are prolonging risks to the environment and public health.

Figure 3. Environmental Priorities for Urban Wastewater Treatment



Domestic wastewater treatment systems (septic tanks)

The EPA published the National Inspection Plan Report for the reporting period 2019, highlighting that 51% of domestic wastewater treatment systems failed inspection. Seventy three percent of systems that failed an inspection have been fixed and Local Authorities have reduced the number of open advisory notices (open over two years) from 621 to 305. Resolving advisory notices requires continued engagement and enforcement by Local Authorities. The Department of Housing, Local Government and Heritage expanded the domestic wastewater treatment system grant scheme in 2020.

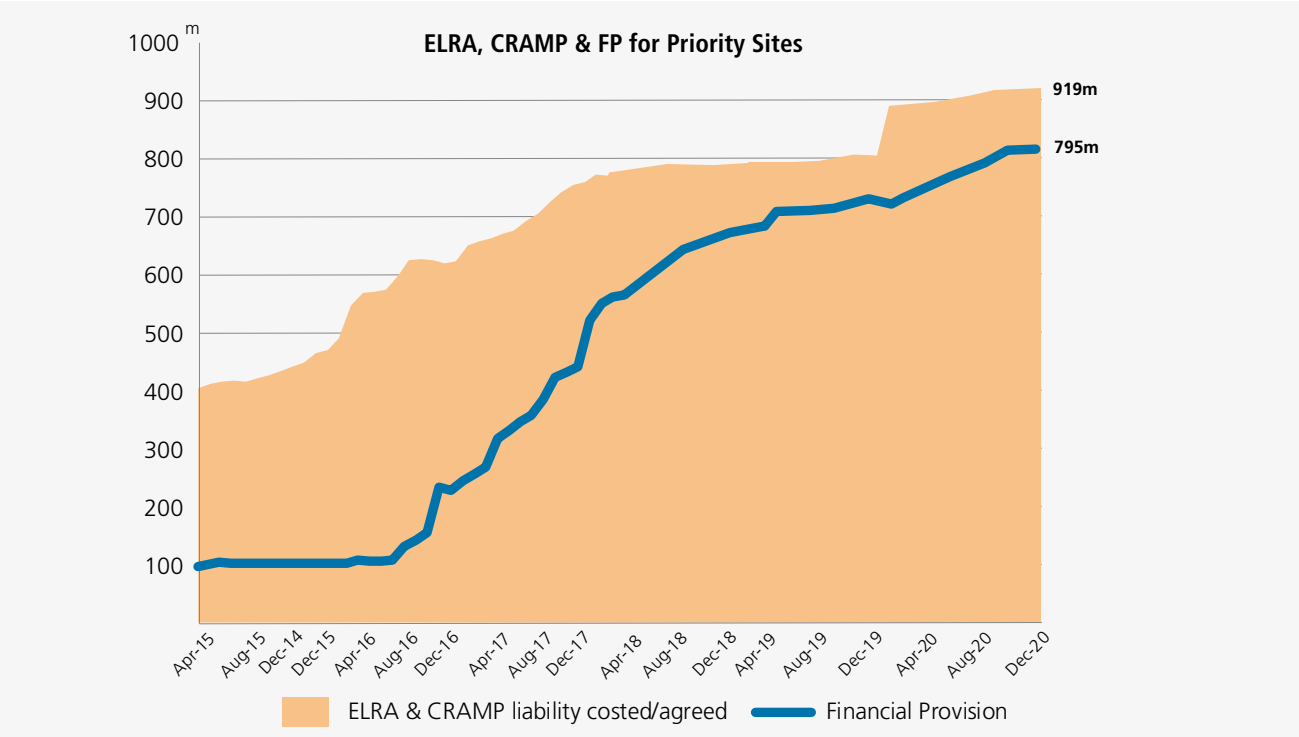
Preventing environmental damage

Financial provision for environmental liabilities

Ensuring that licensees make adequate financial provision to cover the environmental liabilities associated with potential incidents or with the closure and aftercare of sites remains an ongoing EPA priority. Combined liability costings for closure and restoration/aftercare (CRAMP) and potential incidents (ELRA) agreed with EPA now stands at €919m. In 2020, the total Financial Provision (FP) secured for addressing the environmental liabilities at priority facilities reached €794M – see Figure 4. This represents a significant reduction in the risk to the environment and to the State.

The EPA monitored financial provision at high-risk sites and sites which have been at reduced activity levels during the Covid-19 pandemic.

Figure 4. Financial provision secured for Environmental Liabilities.



Market surveillance and Chemicals in the Environment

Market Surveillance (including solid fuel regulations)

Consumers need to be confident products they purchase, when used properly, do not endanger them, others and their environment. Thus, the primary aim of market surveillance is the promotion of the European internal market by ensuring a high level of protection for EU consumers and their interests. The EPA is responsible for surveillance activities in relation to a wide range of market legislation. This surveillance entails carrying out programmes which involves checking a very wide range of consumer goods for restricted hazardous substances and following up non-compliances discovered. Also, where required, the EPA assists market surveillance authorities in other EU Member States and participates in some joint EU surveillance projects. The EPA reports the results of its investigations to the European Commission. Additionally, the EPA also works with industry to promote compliance and provide guidance where needed.

During 2020, the EPA undertook a monitoring campaign for compliance with the Paints Directive paint labelling requirements. The checks were limited to Category I

products (domestic decorative coatings). A total of 102 product labels were inspected with one found non-compliant. The non-compliance will be followed up during 2021.

In late 2020, the EPA commissioned the testing of 50 samples of light emitting diodes (LED) lamps for prohibited hazardous substances with respect to the requirements of the EU Directive on Restriction of Hazardous Substances (RoHS). Test results are expected during 2021.

The EPA is also charged with the establishment and maintenance of the Fuel Register under the Solid Fuel Regulations (S.I. No. 326 of 2012) as amended. There were 21 coal bagging facilities on the Fuel Register at the end of 2020.

Chemicals in the Environment

The EPA designs and has carried out programmes which target suspected and/or newly confirmed hazardous substances in the environment. Such chemicals include Persistent Organic Pollutants (POPs) and some substances evaluated under the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regime. The aims of these programmes are to better understand the potential risks posed by these substances both to the environment and human health. Additionally, results from these studies can inform future, related investigations.

Producer responsibility

The EPA has enforcement responsibilities under the Waste Electrical and Electronic Equipment (WEEE), Batteries, and Tyres Regulations. Enforcement efforts are focussed on non-compliant producers. Producers are companies that either manufacture or import electronic products, new batteries or tyres and make them available for sale for the first time in Ireland.

Audits of Business to Business (B2B) producers focussed on producers who had reported zero take back of WEEE in 2019 and 2020.

A Business to Customer (B2C) free-rider producer enforcement campaign was carried out whereby the EPA engaged with 341 companies in the photovoltaic (PV) panel and lighting sectors to ensure that they were complying with their obligations as producers under the WEEE and batteries regulations. Sixty inspections of websites selling products directly to households in Ireland were also carried out by the EPA.

The EPA focussed enforcement on the management of WEEE at metals recycling facilities. Letters were issued to 65 waste management and collection companies highlighting the need to effectively manage WEEE at their facilities.

As imported cars include tyres and batteries in them, the EPA engaged with 46 car importers to enforce their obligations under the tyres and batteries regulations. Summary statistics on the 2020 enforcement campaigns are shown in Table 7 below.

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	208
Business to Business Producer WEEE Waste Management Reports reviewed	573
Business to Business Electrical and Electronic Equipment (EEE) Producer Audits	31
Business to Consumer EEE/Battery Distance-seller website inspections	60
Free-rider producer inspections (PV panel and lighting sectors)	5
Audits at self-complying battery producers	1
Tyre Producer Inspections	3
Non-compliances under tyres regulations issued to car importers	105
Non-compliances under batteries regulations issued to car importers	96

Ozone-depleting substances and fluorinated greenhouse gases

As part of the work to significantly reduce the use of ozone-depleting substances (ODS) and fluorinated gases (F-Gas) with high global warming potential, the EPA produces guidance and carries out both desktop and on-site inspections of equipment end-users, engineering contractors servicing the relevant equipment and gas distributors. The EPA also prepares the National Halon Critical Use Report and the ODS Illegal Trade Report for submission to the European Commission.

New Certification Process for F-Gas contractors

Regulation of the F-gas sector requires persons and companies undertaking certain activities to be certified. Such certificates/attestations must be issued by a recognised awarding authority within the EU. Following

the transition period after the UK's withdrawal from the EU (Brexit), certificates issued by organisations within the UK are no longer recognised within the EU. Heretofore, contractors within Ireland relied heavily on certification by UK organisations.

To avoid unnecessary re-training of contractors, the DECC and the European Commission authorised the EPA to issue certificates to contractors holding valid UK certificates and an online application system was launched in 2019. In 2020, 830 Irish F-Gas certificates/attestations were issued to service providers who held UK-based F-Gas certificates, so that so they could continue to operate legally within the EU post-Brexit. This recertification scheme has been extended until the end of June 2021.

In addition, 7 refrigerant equipment operators were inspected and 9 illegal imports of ODS equipment on foot (in collaboration with Revenue (customs) on the import/ export of ODS and F-Gas equipment.

EPA Investigation into ESB Networks

The EPA issued a final report following an investigation into ESB Networks fluid filled cables leaks and losses of SF6 gas. The report concluded that ESB Networks had failed in its statutory obligations under the Water Pollution Act. ESB Networks revised its protocols and had also commenced investigations into each of the fluid filled cable leaks. The EPA has begun legal proceedings against ESB Networks in relation to losses of SF6 gas from equipment on the EPA licensed ESB Moneypoint site.

The EPA developed a strategy to investigate Sulphur Hexafluoride (SF6) gas use and compliance across ESB infrastructure and licensed sites, for implementation in 2021 and beyond.

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 the sites inspected, to identify common or emerging issues across sites and to promote a strong radiation protection culture.

The inspection programme is set out annually based on several objective criteria including the radiological risk associated with the authorised practices, the time elapsed since the last inspection, and the compliance history of the facility. Reported incidents within the sector of operation are also considered along with any relevant information that has become available concerning either the authorised practices or the sectors in general.

During 2020, radiation protection inspections were undertaken in a number of sectors (Table 8, including five security surveys carried out with the assistance of An Garda Síochána National Crime Prevention Unit. The EPA also surveyed a sample of dentists between mid-March and mid-May to verify their compliance with the conditions of their authorisation.

Although levels of compliance were generally found to be good, results show that there is room for improvement in the areas of risk assessment, radiation safety training and emergency/ contingency planning. Adequate provision of Radiation Protection Adviser and medical physics services to undertakings in the medical and dental sector also remains a challenge.

In relation to enforcement actions, the EPA prohibited the acquisition of new equipment at one hospital group, due to persistent failure to meet their regulatory obligations and placed a temporary restriction on the use of X-ray equipment at one dental facility due to safety concerns following an inspection.

During 2020, 11 reportable incidents and 7 reportable doses were notified to the EPA. Each of these matters were followed up as appropriate.

Table 8. Radiation protection licensee categories and inspections undertaken during 2020

Licensee sector	Number of completed inspections
Hospital and medical facilities	30
Industrial and commercial (including source distributors and transport companies)	33
Education and research	3
Other licensees (low- and medium-risk vets, dentists, cabinet X-ray and X-ray distributors)	9
Total	**75**

Local Authority Statutory Performance

A report on local authority environmental enforcement performance in 2018 found that enforcement activities have increased nationally. While local authorities met their performance targets as defined by the local authority performance framework, challenges remain in waste, farm and air quality inspections. During 2020 the EPA reviewed the performance framework to focus more specifically on national enforcement priorities. A new framework will be piloted in 2021.

Prosecutions

There were 24 court appearances out of which thirteen prosecutions were heard and concluded in the District Court, resulting in eight convictions and five other licensees received the benefit of the Probation Act (see Table 9).

The Courts imposed fines of €29,000 and awarded legal costs of €122,602, charitable donations of €18,000 and €5,000 awarded to a complainant. One waste case was contested but was settled by agreement. There is one additional case which was heard and is awaiting sentencing.

Table 9. Legal Enforcement Activities Undertaken in 2020

Legal enforcement activity	Output
District Court prosecutions heard	13
Fines awarded in District Court	€29,000
Costs awarded in District Court	€122,602
Total fines and costs	**€151,602**
Charitable donations	€18,000

The EPA produces advice and guidance to industry, public bodies, and citizens covering a wide range of environmental activities to ensure compliance with best practice.

2.3 GUIDANCE

Industrial and waste licensed sites

The EPA supports licensees by providing guidance to assist them comply with their statutory requirements. During the year, the EPA published three new air guidance notes and revised and updated four existing air guidance notes.

Waste

In 2020, the EPA published 'Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities' and engaged with licensed soil recovery facilities on implementing this guidance to improve their waste acceptance practices.

The EPA updated the Biodegradable Municipal Waste (BMW) factors for landfill operators to report the amount of biodegradable municipal waste being accepted.

The EPA has various responsibilities regarding the implementation of the WEEE, Batteries and Tyres Regulations in Ireland – principally, a lead role in enforcement in this area. However, the EPA also undertakes a range of activities to ensure compliance with, and to raise awareness of, the Producer Responsibility Initiatives and of the various obligations that apply to different sectors.

The EPA published draft end-of-waste-guidance, a standard application form and decisions, under Article 28 of the European Union (Waste Directive) Regulations 2011-2020. End-of waste is a means of determining the point at which, for the purposes of waste regulation, a material need no longer be classified as waste after it has undergone recovery, including recycling operation, and complies with specific criteria. The Guidance established end-of-waste criteria relating to:

- Recovered ammonium sulphate.
- Polyethylene and polypropylene recyclate pellets.

In 2020, EPA worked closely with members of the European Network for the Implementation and Enforcement of Environmental Law (IMPEL) on a project preparing guidance for producers on the appointment of an Authorised Representative in a member state. The guidance was approved by IMPEL General Assembly in December 2020.

Circular Economy

The National Waste Prevention Programme published Sectoral Sustainability Factsheets and Case Studies for the construction and hospitality sectors, to support the reduction of water use, waste, food waste and energy as businesses reopen.

Water

Drinking water

The EPA revised and published a water treatment manual on filtration which provides practical advice and information on filtration technologies to public and private water suppliers.

Wastewater

The annual reporting of environmental information is a legal requirement of all EPA Wastewater Discharge Licences. The EPA published guidance during the year to assist Irish Water with the preparation and submission of an annual environmental report.

The EPA updated its guidance for householders and industry on remediation and replacement of domestic wastewater treatment systems to reflect the new grants schemes and other developments.

Strategic environmental assessment

The EPA continued to update its guidance for plan-making authorities in carrying out strategic environmental assessments (SEA) of relevant plans, programmes and strategies. National guidance documents were published on Cumulative Effects' Assessment in SEA and SEA Statements

and Monitoring. A Best Practice Note on Strategic Environmental Assessment in the Energy Sector was also substantially completed and will be published in early 2021.

Radiation

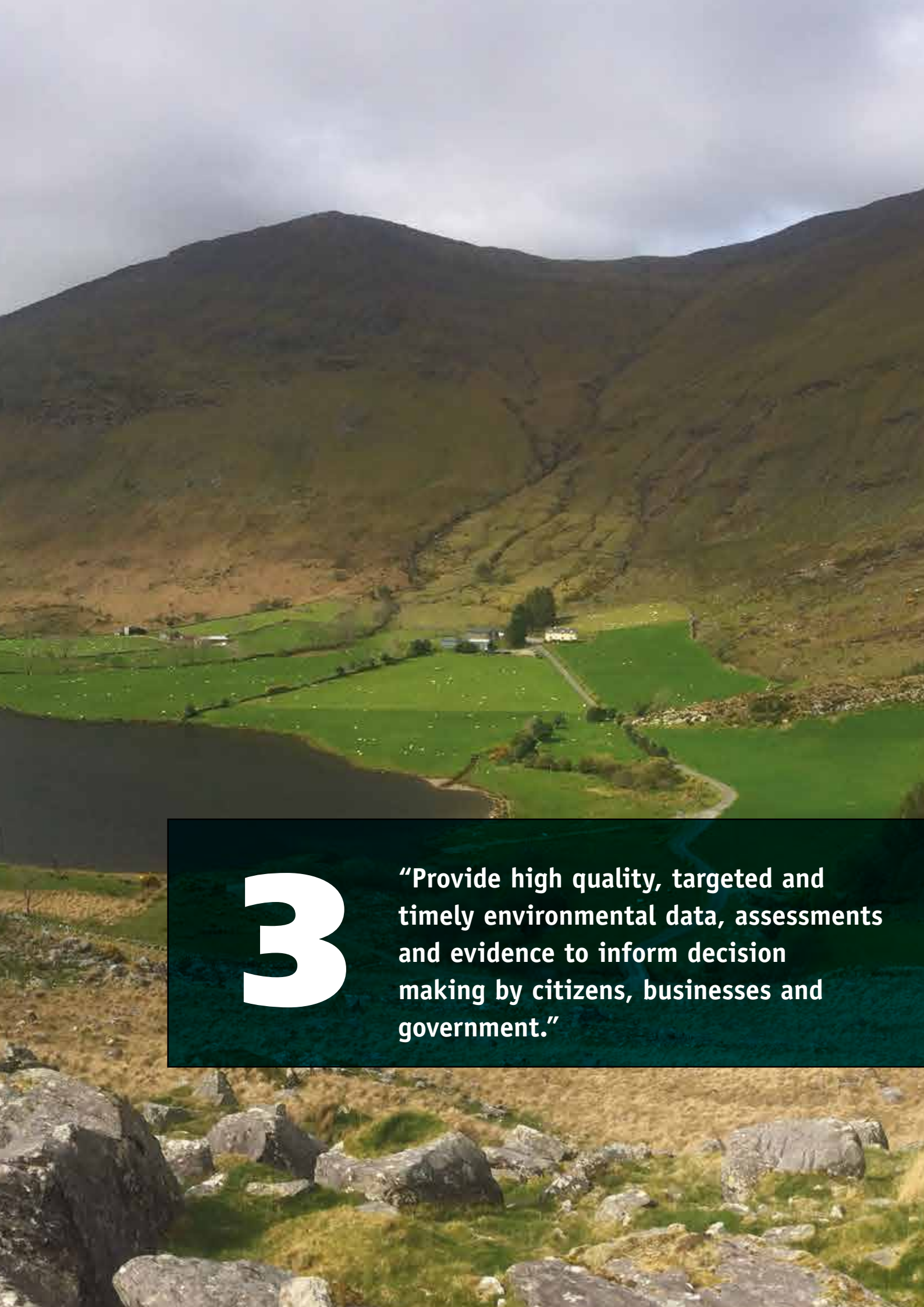
The EPA developed a Code of Practice Framework, which supports the implementation of our new Regulations (IRR19), by publishing the "Code of Practice on the Application of the Ionising Radiation Regulations (IRR19) in Veterinary Medicine".

Chemicals in the Environment

An information campaign was completed regarding restrictions on heavy metals in cars and components as required by the end-of-life vehicles regulations, with stakeholder guidance being prepared in 2020.

Noise mapping

The EPA published guidance on the mapping of major roads outlining the steps involved in the collection, collation and reporting of these datasets to the EPA. In addition, several draft advice notes were developed during 2020, including guidance on how to "define an agglomeration', and on 'what roads in the agglomeration should be mapped'. Two early version reports were also prepared on junctions and roundabouts, and on population exposure methodology



3

"Provide high quality, targeted and timely environmental data, assessments and evidence to inform decision making by citizens, businesses and government."

The EPA provides evidence-based assessment and timely information to all stakeholders, to support action to protect and manage the environment.

3. KNOWLEDGE

3.1 MONITORING AND ASSESSMENT

Air quality

In collaboration with local authorities and other bodies, the EPA manages and operates the National Ambient Air Quality Monitoring Network (Figure 5). During 2020, data from the network was made available to the public through an enhanced dashboard on the EPA website with greatly improved functionality 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 World Health Organization (WHO) guideline values.

The network was further expanded during 2020 with the addition of 18 new monitoring stations. The network has now more than tripled in size since 2017 – 88 monitoring station compared to 29 in 2017.

On World Lung Day 25 September 2020, the EPA published its annual report on air quality in Ireland for 2019. The report concluded that while Ireland's air quality was generally good during 2019, there are concerning localised issues. There was an exceedance of the annual average nitrogen dioxide EU limit value at one traffic monitoring station in Dublin city centre and air pollutants were above the WHO guideline values for health at monitoring stations across Ireland.

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 showed 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 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 6) 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).

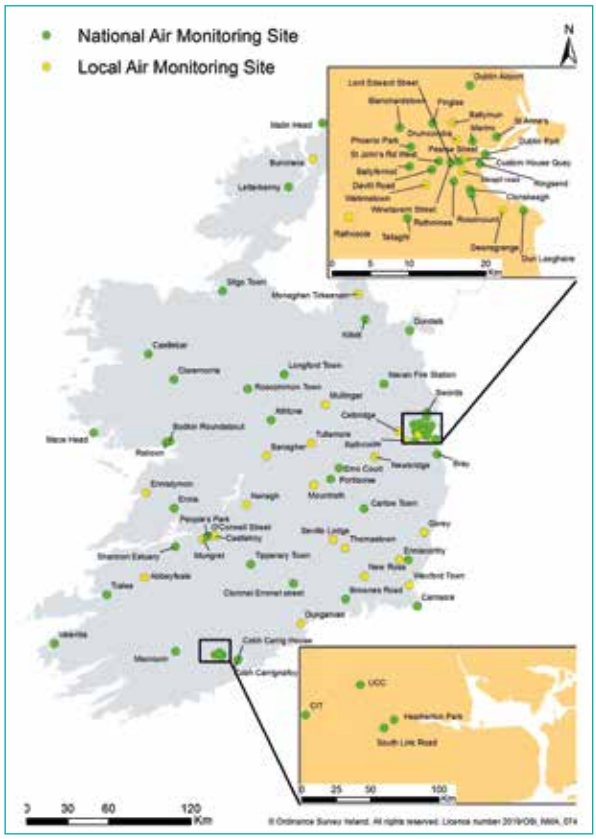


Figure 5. National Ambient Air Quality Monitoring Network

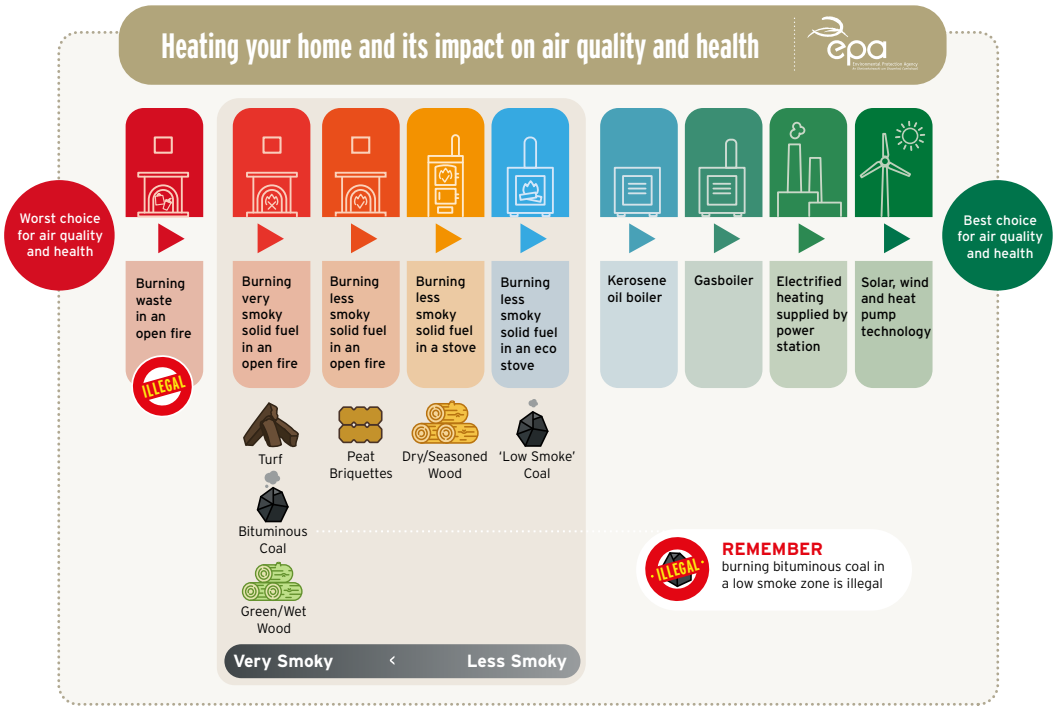


Figure 6. Infographic on the air quality and health aspects of home heating choices

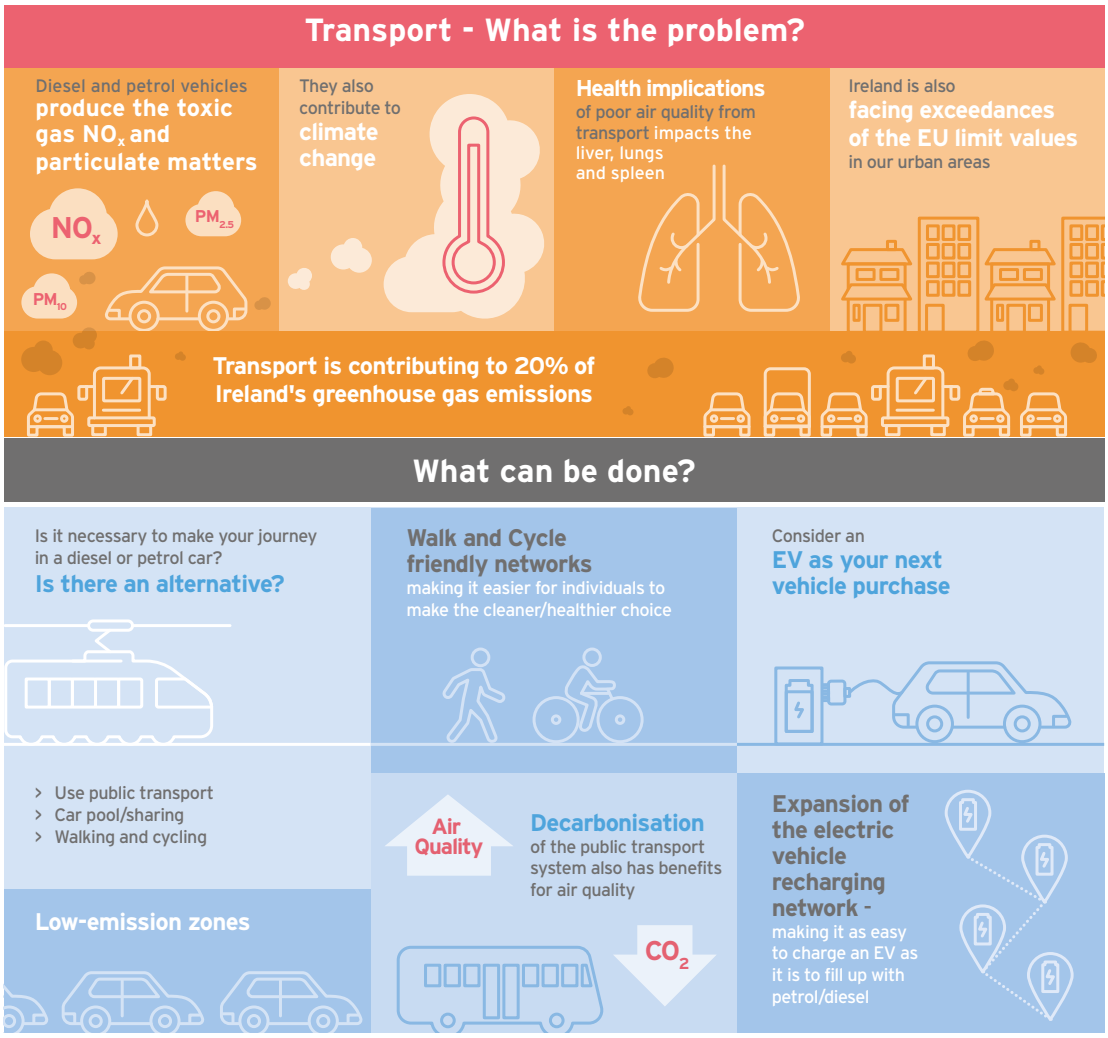


Figure 7. Infographic on the air quality and health aspects of transport choices

Air pollutant emission inventories and projections

The EPA submitted air pollutant emissions inventory data for 2018 and emissions projections to 2040 to the United Nations Economic Commission for Europe (UNECE), under the Convention on Long-range Transboundary Air Pollution (CLRTAP), and the EU, under the National Emission Ceiling (NEC) Directive. A revamped Air Pollutant Emissions Report was also published, combining inventory and projections data to 2030 and providing users with some insight into the future compliance challenges.

The air pollutant emissions inventory data for 2018 showed that Ireland was again non-compliant for ammonia emissions, with the projections indicating that situation to continue until 2030 unless new measures are introduced. These emissions are predominantly generated in the agriculture sector and Ireland's final National Air Pollutant Control Programme, expected to be published in early 2021, will indicate how ammonia emissions will be mitigated to bring Ireland back into compliance.

The Projections also indicated that compliance with future Nitrogen Oxide NOx emissions ceilings under the NEC Directive can be achieved with full implementation of the Climate Action Plan, including meeting ambitious electric vehicle rollout targets. Slight non-compliance is projected by 2030 for Non-Methane Volatile Organic Compound (NMVOC) emissions, arising particularly from fugitive sources and food and drink production. Additional measures will likely also be needed to mitigate emissions of these pollutants.

The quality of the EPA's Air Pollutant Inventory and Projections reporting in 2020 was acknowledged by our peers in the European Monitoring and Evaluation Programme (EMEP) Centre on Emission Inventories and Projections, with Ireland's reporting considered to be the "most complete" in 2020.

Aquatic Environment

The objectives of the Water Framework Directive (WFD) are to protect all good and high-status waters, to prevent deterioration of all waters, and to restore degraded surface and groundwaters to at least good status. The EPA is responsible for co-ordinating and implementing the national WFD monitoring programme, undertaking technical and scientific assessments to inform the measures which need to be taken to protect and improve water quality, and for reporting to the EU on WFD and other water related activities.

The EPA provides technical leadership through its role as chair of the National Technical Implementation Group (NTIG). In 2020, EPA and OPW co-chaired a sub-group of NTIG which carried out a review of, and provided recommendations for, the implementation of natural water retention measures (also known as nature-based solutions) in Ireland. EPA also provides technical advice and support to the Local Authority Waters Programme.

The EPA is actively engaged in several expert working groups being led by the Department of Housing, Local Government and Heritage (DHLGH). These include developing the programme of measures for the third cycle River Basin Management Plan, assessing the feasibility of improving fish passage in the River Shannon, protecting drinking water at source, and developing guidelines for incorporating the WFD into the planning framework.

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 the use of rapid-assessment methods.

The EPA participates 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 needs to reduce and that measures need to be integrated, ideally in a whole-farm planning approach, to meet water quality, biodiversity, climate, air and other environmental goals.

Despite some impacts from Covid-19 restrictions, the national surface water and groundwater monitoring programme was substantially completed during 2020. Teams operating within public health guidelines undertook the following:

- Ecological surveys of 1,179 river water bodies, 59 lakes and 88 transitional and coastal water bodies.
- Collection and assessment of 1,368 biological samples from rivers, lakes, estuaries and coastal waters.
- Chemical analysis of 12,661 water samples from rivers, lakes, estuaries and coastal waters.
- Sampling and analysis of three rounds of groundwater samples from 272 wells and springs.

In December 2020, the EPA published the Water Quality in 2019 indicator report. It provides an update on the quality of water in Ireland's rivers, lakes, transitional and coastal

waters and groundwater using information collected in 2019. Figure 8 summarises the findings of the Water Quality Indicators Report for 2019.

The report highlighted that the main threat to water quality is the presence of too many nutrients such as phosphorus and nitrogen, which come primarily from agriculture and wastewater. Over one third of rivers, and a quarter of lakes are failing to meet their environmental quality standards for nutrients. Also, of concern is the finding that nitrate concentrations in our rivers and groundwaters are showing an upward trend, particularly in the south and southeast of the country.

Just over half of rivers and lakes are in high or good biological quality. The rivers surveyed in 2019 showed more improvements than declines overall, which is welcome, however further targeted action is needed to return waters to a satisfactory condition.

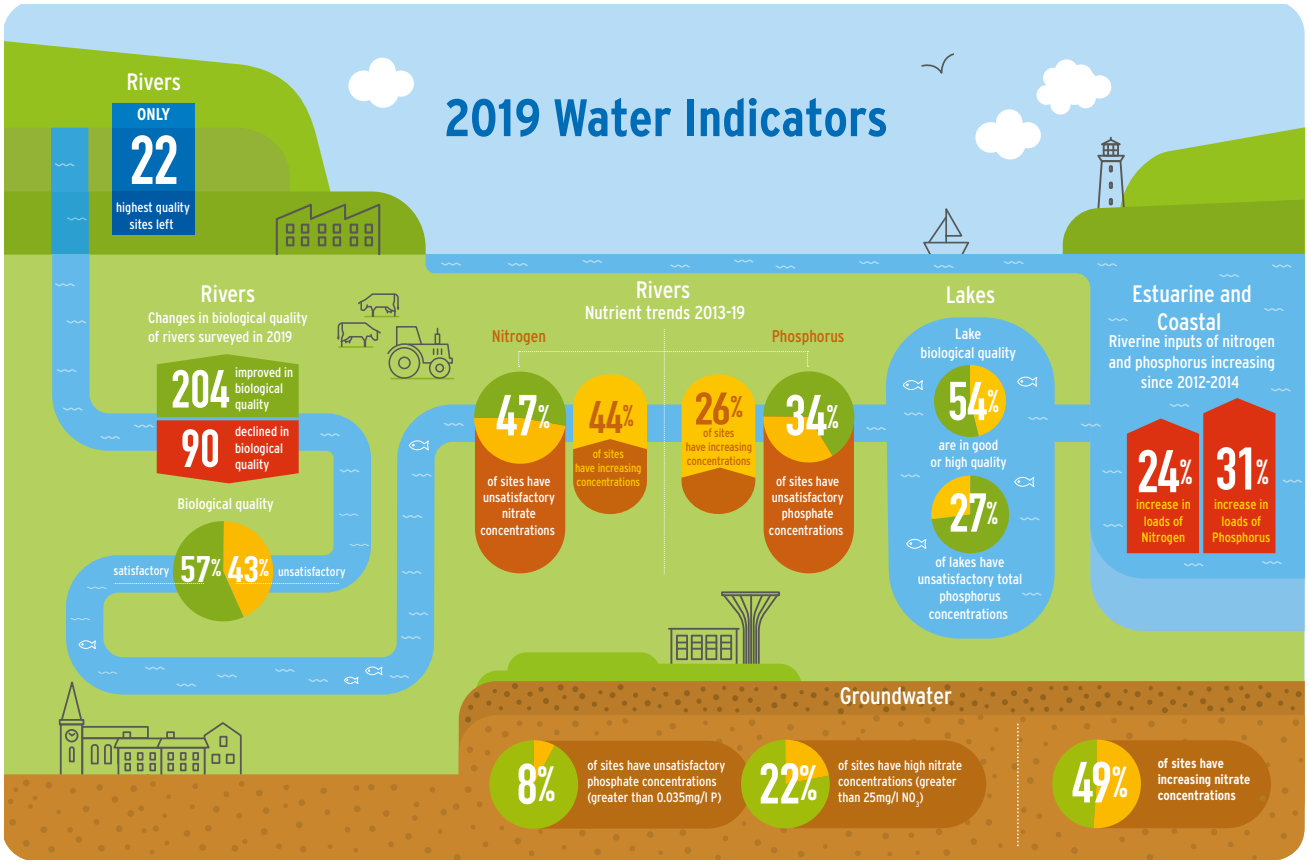


Figure 8. Water Quality Indicators 2019

The River Basin Management Plan 2018–2021 (RBMP), published by the Department of Housing Local Government and Heritage, set out the actions that Ireland will take to protect and improve water quality in water bodies. The second cycle RBMP for the period 2018-2021 is being implemented, and preparations are underway to develop the third cycle plan for 2022-2027. During 2020 the EPA completed the assessment of the pressures impacting on waters and this information was made widely available through EPA online resources. In 2020, the EPA also strengthened the evidence base to demonstrate and quantify the impacts of agriculture on water quality and progressed the development of maps of hotspot areas for targeting agricultural measures.

As part of the assessment of the impacts of agriculture on water quality, the EPA submitted an Annual Report on Water Quality to the Department of Agriculture, Food and the Marine, and submitted the Nitrates Directive Article 10 report to the European Commission.

The WFD allows individual Member States to set their own Environmental Quality Standards (EQS) to provide protection against substances of concern at a national level. These substances, known as River Basin Specific Pollutants (RSBP), are used in the determination of the ecological status of water bodies across Ireland. The National Aquatic Environmental Chemistry Group (NAECG), chaired by the EPA, completed a review of Ireland's list of RBSP, originally

set in 2010, as well as a desktop study to identify potential new candidate RBSPs. The results of this work, together with monitoring programmes in 2021 and 2022 will be used to develop a new, updated list of RBSPs for Ireland.

In 2020, the EPA published several peer-reviewed articles on subjects such as the development of new assessment indices for estuarine waters: freshwater biodiversity and the first record of a new mayfly species in Ireland. In addition, the national dataset on river macroinvertebrates was published in the scientific journal 'Nature Scientific Data' to increase awareness and discoverability of this important national dataset.

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 2020, the EPA carried out 2,065 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 frequency of site visits was tailored to the site requirements and natural variability in the river channel. The data are available for download via the EPA's HydroNet web pages: www.epa.ie/hydronet/.

The EPA maintained the National Abstraction Registration portal under the abstraction registration regulations and integrated the abstraction data into the WFD risk characterisation process. The Wallingford Hydrosolution's "Qube" model has been used to evaluate the pressures from abstractions on water resources nationally. The EPA continues to engage with sectoral representatives to encourage further registration of water abstractions.

Also, in 2020, the EPA:

- published a monthly hydrometric bulletin to make water levels and flow data available to the public and stakeholders.
- provided access to river flow summary (flow percentiles) information in the EPA Water Maps Portal.
- published the most up-to-date register of all hydrometric stations in Ireland.
- coordinated low flow measurements across the country during the 2020 drought – the data gathered was used to inform the National Emergency Coordination Group managing the impact of the drought.
- carried out a water balance assessment on the Royal Canal for Waterways Ireland.

Bathing water quality

During 2020, the EPA published the annual bathing water report that assessed results for the 2019 bathing season. Details of the 2019 bathing water quality assessments are summarised in Figure 9. The report found that 95% of bathing waters (140 of 147) in 2019 met or exceeded the minimum required standard. This is up from 94% in 2018.

EPA worked with local authorities to ensure that the 2020 bathing water season was successfully managed despite the restrictions due to Covid-19.

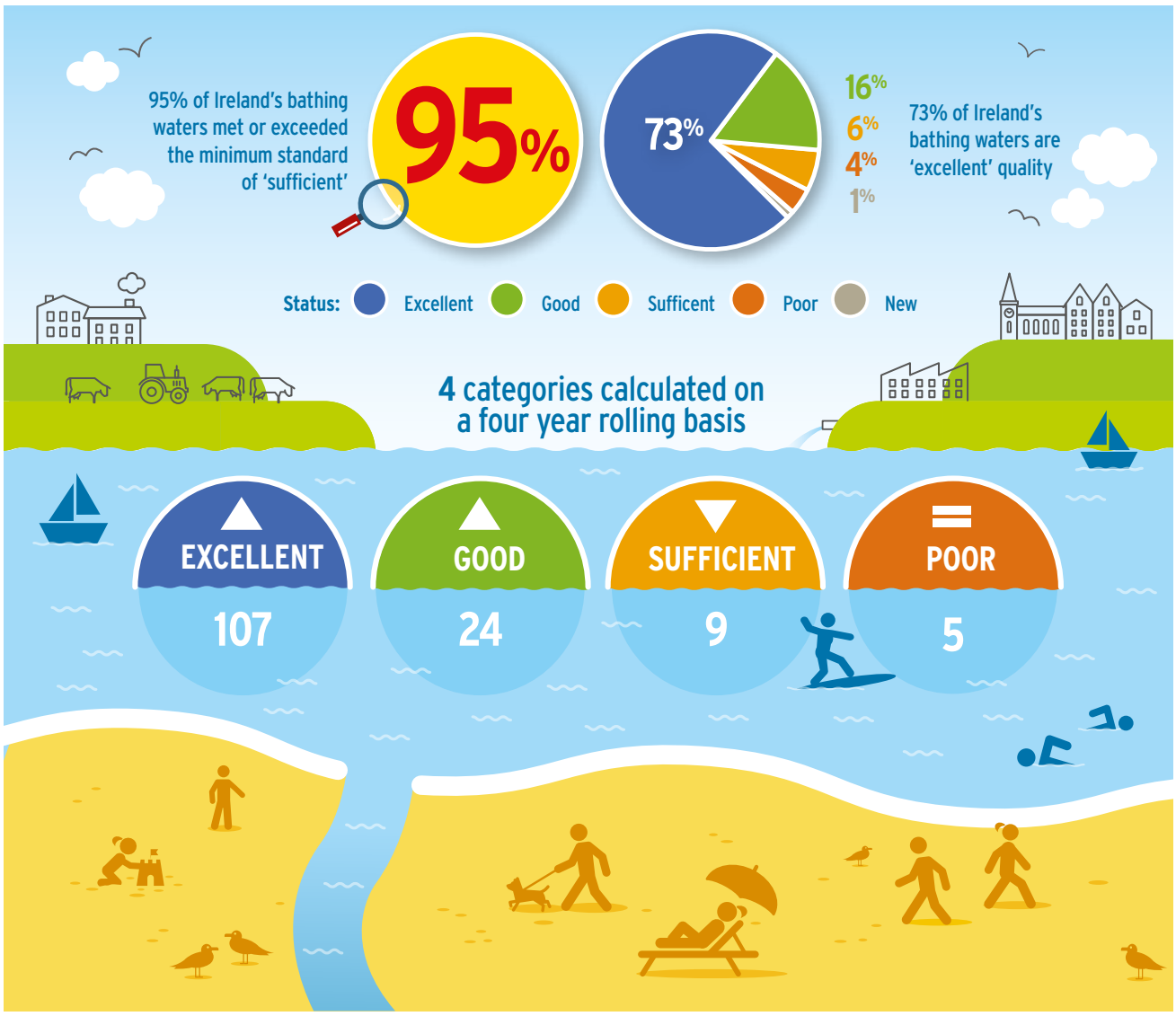


Figure 9. Bathing water quality in 2019

Climate change

Emission inventories

In November 2020, the EPA published provisional Greenhouse gas (GHG) emissions data for 2019 in a revamped report and along with extensive accessibility updates to the EPA's greenhouse gas web resource. The data showed that in 2019 Ireland's greenhouse gas emissions decreased by 4.5%, the largest annual reduction in emissions since 2011. Significant emission reductions were recorded for the energy industries, agriculture and residential sectors, with the energy industries reduction being attributable to a 69% decrease in coal and an 8% decrease in peat used in electricity generation. This level of emission reductions, at a minimum, will be required annually throughout the 2020s to put Ireland on the pathway to a climate neutral future. Despite the reductions, Ireland exceeded its annual limit for 2019 under the EU's Effort Sharing Decision by almost 7 million tonnes carbon dioxide equivalent (Mt CO_2e), making compliance over the lifetime of the scheme (2013-2020) highly unlikely, even with substantial emissions decrease because of the pandemic.

Emissions projections

In July 2020, the EPA published greenhouse gas emission projections, out to 2040. The projections indicated that Ireland's climate targets to 2030 under the EU Effort Sharing Regulation (ESR) can be met with full implementation of all the measures outlined in the Government's 2019 Climate Action Plan. The measures include almost 1 million electric vehicles on Irish roads by 2030, 70% of electricity generation from renewable sources by 2030 and 16.5 Mt CO_2e of emissions mitigation in the agriculture sector from 2021 to 2030. Appropriate land management is also required to maximise the amount of removals available to be counted towards the EU target.

European Pollutant Release and Transfer Register

If an operator carrying out a PRTR activity has emissions or waste transfers above specified thresholds, information is provided by the operator to the EPA concerning the amount of pollutant releases to air, water, and wastewater as well as off-site transfers of waste.

The 2018 PRTR data was submitted to the European Commission in March 2020 and is published on the national PRTR website. During 2020, the 2019 data was collected and validated, and was reported to the European Commission in November 2020. A new GIS-based national PRTR register was launched in 2020: *www.gis.epa.ie/EPAMaps/PRTR*.

Analysis of the 2019 data shows that there was an increase in the number of operators reporting under PRTR. Overall, there was a decrease in releases to air by these operators for pollutants such as carbon dioxide, nitrogen oxides, sulphur oxides, nitrous oxide, ammonia and particulate matter, while releases of methane, chlorine, nickel, perfluorocarbons and hydrochlorofluorocarbons increased. There were increases in total phosphorus, total nitrogen, chlorides, fluorides, pesticides and total organic carbon releases to water – particularly from large urban wastewater treatment plants. There was an increase in hazardous waste transfers, both for hazardous waste sent abroad and transferred within Ireland. The quantity of non-hazardous waste transferred also increased in 2019.

Waste

The EPA's National Waste Statistics web resource (*www.epa.ie/nationalwastestatistics/*) continues to provide the most recent available waste data for Ireland to view and download. During 2020, online data releases were published for waste streams including municipal, household, packaging, hazardous, composting, waste electrical and electronic equipment (WEEE), end-of-life vehicles and construction & demolition waste.

The *National Waste Statistics Summary Report for 2018* was published in September 2020, summarising the latest waste data, and highlighting key trends and Ireland's progress towards EU targets.

Chemicals in the environment

The EPA is the responsible body in Ireland for the implementation of a range of legislation related to chemicals in the environment and their potential effects. This includes the Persistent Organic Pollutant (POPs) Regulation (EU Regulation 2019/1021) and the Stockholm Convention on POPs, the Mercury Regulation (EU Regulation 2017/852), the Paints Directive (EU Directive 2004/42/EC), the EU Directive on the Restriction of Hazardous Substances (RoHS, Directive 2011/65/EU) and the EU End-of-Life Vehicles Regulations (EU Directive 2000/53/EC).

During 2020, information gathering and awareness raising among relevant stakeholders was initiated regarding new and enhanced POPs reporting requirements for the period 2019-2020, as well as the recent restriction of PFOA (perfluorooctanoic acid), under the EU POPs Regulation and Stockholm Convention on POPs. These reporting obligations will be completed in 2021.

Monitoring inspections were completed in relation to RoHS and Paints Directive to ensure that relevant products conformed to the requirements of these regulations.

Environment laboratory services

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 poultry and wastewater treatment sites. The laboratories also analyse samples from rivers, lakes, groundwaters and transitional and coastal waters under the National WFD Monitoring Programmes. During 2020, the laboratories carried out a range of analyses on 13,866 samples. The sample numbers are lower than those in 2019 (15,976 samples) reflecting the challenges of working under Covid-19 restrictions. A breakdown of the sample numbers analysed in 2020 is provided in Figure 10.

The restrictions imposed under Covid-19 required some modifications to the sampling programme. The frequency of sampling under WFD was reduced by one in all cases (except the lakes requiring sampling four times per annum). The quality of sampling undertaken by Local Authorities is normally assured through an auditing programme conducted by the EPA, but during 2020 it was not possible to carry out any audits. The EPA's enforcement monitoring programme was also reviewed, and priority sites were identified, resulting in a significantly reduced programme for this area.

In October 2020, the air, radiation, and water laboratories were (virtually) audited 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.

In 2020, work continued in the laboratory's Lean continuous improvement programme. Lean projects on Right First Time and on the Laboratory Consumables Procurement Process and Inventory Management were completed, delivering real benefits in terms of time and cost savings.

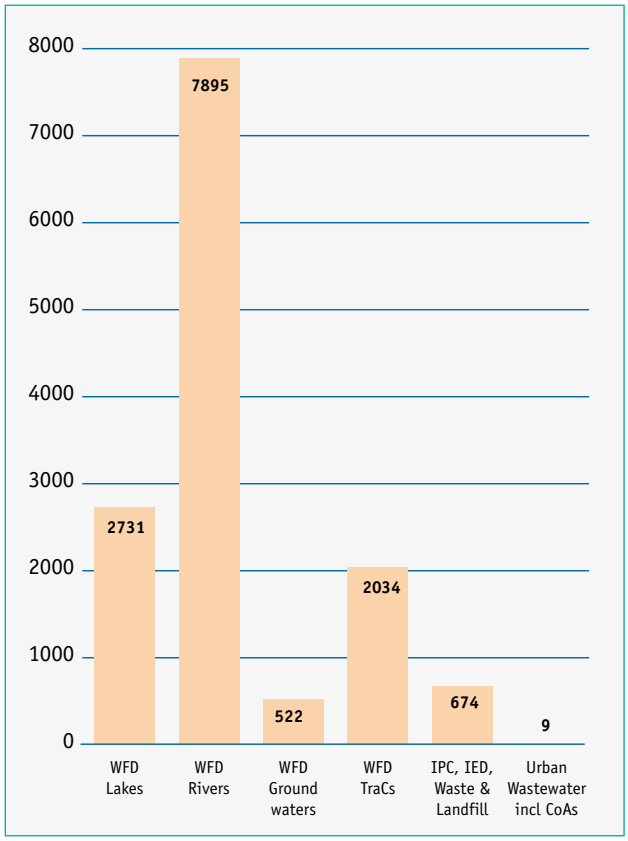


Figure 10. Number of samples, by type, analysed by EPA water laboratories in 2020

Radiation monitoring

Instrument calibration service

The EPA's Instrument Calibration Service provides an accredited calibration service for a range of radiation protection instruments, including survey meters, contamination meters and electronic personal dosimeters. This supports monitoring of radiation levels and radiation safety in the workplace for licensees and stakeholders in industry, medicine, defence, research, regulation, and emergency response.

The service remained open throughout the pandemic response, undertaking 246 calibrations.

Staff are improving the service's technical capability, through post-graduate research at UCD modelling the radiation fields in the laboratory. The service participated in an international metrology intercomparison as well as the International Atomic Energy Agency's SSDL (Secondary Standard Dosimetry Laboratories) network.

Radioanalytical services

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 2020 included:

- Testing of Irish produce for compliance with the requirements of importing 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.

In total, 531 contract samples were tested during 2020.

The 2020 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 radioactivity in drinking water continued in 2020, though the programme was impacted by Covid-19 (disruption to local authority sampling) and a need to redevelop the Gross Alpha/Beta method used in the analysis. Some Private Drinking Water supplies/sources that were not tested in 2020 will be incorporated into the remaining years of the programme.

A total of 418 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 2020 was 3,727.

National Radiation Monitoring Network

The National Radiation Monitoring Network (NRMN) is maintained as part of the EPA's responsibilities under the National Plan for Nuclear and Radiological Emergency Exposure. The Network currently includes fifteen dose-rate monitors that send live data to the EPA website as well as to the European Commission and International Atomic Energy Agency. Five field instruments measure radioactivity on aerosol filters and send live data to the EPA. This data would be used in the event of an overseas nuclear or radiological accident. An additional seven aerosol and ten rainwater samplers continuously gather samples for off-line analysis in EPA laboratories.

The redevelopment of the NRMN continued in 2020, with the first batch of low volume aerosol samplers. Gamma dose rate probes will be delivered for deployment in 2021. A new a high-volume aerosol sampler was installed at Waterford Institute of Technology as part of the NRMN project – this complements an existing sampler located in University College Dublin. Work also progressed on putting in place the necessary agreements with the site owners for the 23 NRMN sites.

High Volume Aerosol Sampler Deployed at Waterford Institute of Technology

New generation solar powered gamma dose rate probe in testing at EPA Dublin

Non-ionising radiation

During 2020, the EPA developed a National Monitoring programme, following public consultation, for Non-Ionising Radiation (NIR) within the frequency range 0 Hz to 300 GHz. This frequency range is commonly referred to as Electromagnetic Fields (EMF). The monitoring programme supports the EPA's advisory role in relation to public exposure to EMF assigned to it under SI No 190 of 2019. The programme will assess the population exposure to EMF by determining the typical levels of exposure found in everyday environments in Ireland, particularly in those areas with a high population and/or footfall. The objective is to establish a baseline for EMF levels in Ireland and over time will assess the effect that the deployment of new telecommunication technologies or new electricity infrastructure may have.

No adverse health effects have been proven at EMF exposure levels below international guidelines as set out by the International Commission on Non-Ionising Radiation Protection (ICNIRP). The ICNIRP guidelines are endorsed by the World Health Organization (WHO) and the European Commission. During 2020, ICNIRP published updated recommendations on radio-frequency EMF (RF EMF) which covers the frequency range envisaged for 5G.

The deployment of 5G technologies across Ireland is not expected to increase the public EMF exposure to levels close to the ICNIRP values. Mobile phone handsets are the most significant source of public exposure to radiofrequency electromagnetic fields (RF-EMF) as their exposure is typically much higher than that from other RF-EMF sources such as mobile phone base stations or

masts. During 2020, the EPA added content to its website on mobile phones handsets and health, and on 5G. http://www.epa.ie/radiation/emf/health/

Ecosystems Monitoring and Reporting

The revised National Emissions Ceiling (NEC) Directive (2016/2284) requires Member States to ensure the monitoring of negative impacts of air pollution upon ecosystems based on a network of sites that is representative of their freshwater, natural and semi-natural habitats and forest ecosystem types, taking a cost-effective and risk-based approach. The lack of a formal network across Europe was identified as a gap in the revised NEC Directive, with a need for a long-term network to be put in place to provide direct assessment of the impacts of air pollution on ecosystems.

In 2020, a comprehensive scoping study was undertaken to identify the necessary extent of a monitoring network which can provide robust data on the impact of air pollution on sensitive Irish habitats such as raised and blanket bogs, grasslands and heathlands. The recommended network is based on utilising existing synergies with ecosystems monitoring activities carried out by the EPA and by other organisations such as the National Parks and Wildlife Service, the Department of Food, Agriculture and Marine and academia. The proposed network will focus on monitoring the impacts of nitrogen deposition (mostly from agriculture) on sensitive national habitats, as currently it is estimated that more than 20 % of protected habitats are being impacted by nitrogen deposition which is above specified critical deposition rates.

Noise

The Environmental Noise Directive (END) is implemented through S.I. No. 549 of the European Communities (Environmental Noise) Regulations 2018. The aim of these regulations is to avoid, prevent or reduce the harmful effects of environmental noise through the preparation of strategic noise maps and the development and implementation of noise action plans. These regulations assign the EPA supervisory, advisory and coordination functions in relation to noise mapping and noise action planning.

The EPA convenes the END Noise Steering Group that comprises relevant stakeholders including the NMBs. There were three meeting of this Group in 2020. This Group is an important forum in co-ordinating implementation of the END regulations. In addition, the Strategic Noise Mapping (SNM) group was established by the DECC and comprises the EPA, County & City Managers Association (CCMA), Local Government Managers Association, Transport Infrastructure Ireland and the Roads Management Office to drive the development of the various contract requirements needed to ensure data gathering and modelling for Round 4 can be implemented in 2021 to ensure reporting of the maps by December 2022.

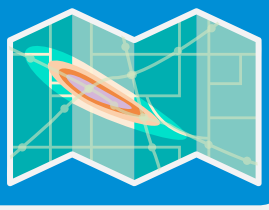
Local authorities are required to report progress each year on the implementation of their noise action plans (NAPs) (from Round 3). The EPA reviewed all annual NAP reports submitted in 2020 and supplied feedback to various local authorities on some areas for improvement. However, notices, under the EPA Act 1992, as amended, were issued to three local authorities for failure to submit their NAPs, despite reminders.

The EPA is the National Reference Centre (NRC) for Noise in Ireland and participated at the European Environment Agency (EEA) NRC meeting in 2020, where progress on NAPs in Ireland is reported. The EPA is participating in a project under the 'Inspire Directive' and requests from the EEA (NRC group) to continue to improve Inspire reporting across all data sets.

In 2018, the World Health Organisation (WHO) published Environmental Noise Guidelines for the European Region. It sets out how noise pollution in our towns and cities is increasing, and particularly from transport sources such as road traffic, railways, and aircraft.

World Health Organization

Legislation in Ireland requires that strategic noise maps are developed every 5 years. The maps set out the noise exposure in a given area from particular noise sources. These sources include major roads, major rail, major airports, & major agglomerations.



Noise Action Plans are designed to manage these noise issues and effects (priority areas for action), and prevent and reduce environmental noise.

Effective management of the environment is increasingly science driven. Through its research programme, the EPA is generating the knowledge and expertise to identify pressures, inform policy and develop solutions to environmental challenges.

3.2 RESEARCH

Effective management of the environment is increasingly science driven. Through its research programme, the EPA is generating the knowledge and expertise to identify pressures, inform policy and develop solutions to environmental challenges.

The EPA has a statutory responsibility for the coordination of environmental research in Ireland. This research has greatly assisted Ireland in meeting and addressing national challenges as well as international obligations at EU and United Nations levels in the areas of climate change, water quality, air quality, sustainability, health and the environment, and biodiversity.

New awards in 2020

In 2020, three proposals were awarded. These included two Climate awards (total commitments of €798k) and one Water award (total commitment of €1.5 million). Co-funding was secured from the National Parks and Wildlife Service (NPWS) and Department of Agriculture, Food and the Marine (DAFM).

In addition:

- Seven awards were made in relation to the EPA support towards the Five-year assessment of Climate Research (total commitments of € 1.4 million).
- Four awards were made in 2020 in relation to the 2020 EPA Green Enterprise Call (total commitments of € 381k), with two additional ones to be made in early 2021.
- 15 conference support grants for events showcasing Irish environmental research were awarded.

Research management and communication

The EPA managed 230 ongoing research projects in 2020 (as of December 2020) and published 54 new research reports, in addition to a toolkit to accompany EPA Research Report 358 and the 2019 CRCG Report of Activities. These are listed in Appendix 6.3 and are available for download from the EPA website:

www.epa.ie/publications/research/.

In 2020, the following innovations were introduced:

- Issue of a Monthly Publication Newsletter; and
- Short two-minute videos with a selected number of reports on release (28 were released in 2020).

A joint EPA-HSE (Health Service Executive) webinar was organised by the EPA to launch the findings (see: *www.epa.ie/publications/research/environment--health/Final_Brochure_Protecting-and-developing-Irelands-GB-spaces.pdf*) of the EPA-HSE jointly funded environment & health projects (approximately 180 attendees on the day).

The recording of the webinar is available at: *www.youtube.com/watch?v=BbWwcp4nIzE*.

Preparation of the new EPA Research 2030 Framework

The preparation of the new EPA Research Framework progressed during 2020. An extensive consultation process took place, comprising: (i) online survey in January 2020 with 295 submissions; (ii) consultation with national Research Coordination Groups, (iii) virtual workshop Towards EPA Research 2030 – A Framework for Research Programming on Wednesday 28th October 2020 with over 200 attendees, as well as (iv) eight-week Public Consultation (*www.epa.ie/publications/research/communicating-research/draft-epa-research-2030-framework.php*).

epaResearch Climate • Water • Sustainability

HSE Seirbhís Sláinte Nios Fearr à Forbairt | Building a Better Health Service

ECOHEALTH

Protecting and developing Ireland's green and blue spaces to benefit our health and wellbeing

Human health protection is a fundamental aspect of environmental protection. Our health is impacted by the air we breathe, the water we drink, the noise levels we experience, the food we eat, the spaces we spend time in, and our sense of wellbeing.

Research can provide the evidence needed to help government and others in making decisions and investments to protect and develop our green and blues spaces for the health and wellbeing of Ireland's citizens. Green and blue spaces include, for example, urban parks, coasts, lakes and rivers, forests and bogs.

In 2015 the Environmental Protection Agency (EPA) and the Health Service Executive (HSE) jointly funded a research call to support the implementation and goals of Healthy Ireland, the national framework for action to improve the health and wellbeing of the people of Ireland. These goals are to:

- increase the proportion of people who are healthy at all stages of life.
- reduce health inequalities.
- protect the public from threats to health and wellbeing.
- create an environment where every individual and sector of society can play their part in achieving a healthy Ireland.

Three research projects were funded:

- **GBI-Health:** Green and Blue Spaces and Health: A Health-led Approach, led by Maynooth University.
- **Eco-Health:** Ecosystem Benefits of Green Space for Health, led by University College Dublin.
- **NEAR Health:** Nature and Environment to Attain and Restore Health, led by National University of Ireland, Galway.

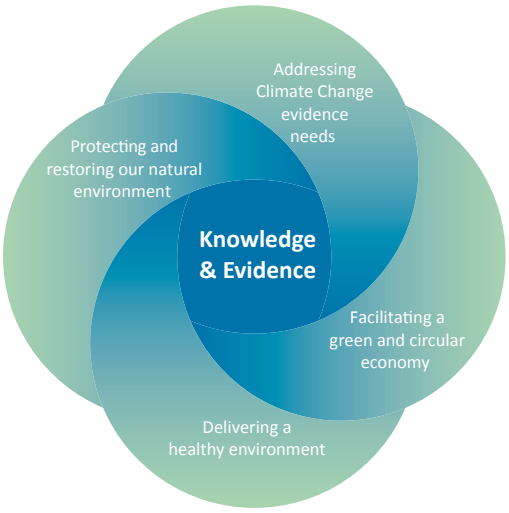
Their findings build an evidence base on the environmental determinants of health and wellbeing and provide novel toolkits to build capacity, develop and transform knowledge for communities, policy-makers and practitioners. The three projects examined the inextricable link between planetary health and human health. They investigated in different ways the value of green and blue spaces as part of Ireland's essential health infrastructure.

Access to nature, specifically to green and blue spaces, contributes significantly to our physical health (playful places), our mental wellbeing (as restive or restorative places) and reconnects us with nature while helping to future-proof society in the face of wider environmental risks. These benefits emphasise the need for a multidimensional policy response for green and blue space creation, maintenance, restoration and protection.

Protecting and developing Ireland's green and blues spaces to benefit our health and wellbeing p1

Four interconnected Research Hubs are proposed under the new EPA Research 2030 Framework:

- Addressing the Climate Change Evidence Needs.
- Delivering a Healthy Environment.
- Protecting and Restoring our Natural Environment.
- Facilitating a Green and Circular Economy.



National linkages

EPA Research has been actively involved in national activities regarding Innovation 2020 – Ireland's five-year strategy on research and development, science and technology. Innovation 2020 sets out the roadmap for continuing progress towards the goal of making Ireland a global innovation leader, driving a strong sustainable economy and a better society.

Research coordination

The EPA operates three national Research Coordination Groups focusing on Sustainability, Water and Climate. These networks facilitate and promote coordination and synergies between relevant cross-sectoral funding organisations, identify knowledge gaps and reduce the fragmentation and/or duplication of environmental research in Ireland. The research coordination groups met three times during 2020, with an additional meeting of the Climate Research Coordination Group.

The EPA published the second annual report of activities (2019) in June 2020 for the Climate Research Coordination Group: *www.epa.ie/publications/research/climate-change/climate-research-coordination-group-second-report-on-activities.php*.

Five-Year Assessment of Climate Change Research Report

The EPA is leading on the provision of the first five-year assessment report (5YAR). This will provide (i) an authoritative assessment of our understanding of climate change based on scientific research and systematic observations in Ireland, and linked EU and global analysis, such as provided by the Intergovernmental Panel on Climate Change (IPCC) and (ii) summary information which can inform decision making on climate actions. It will also serve to identify research gaps and priority in issues to inform future national research investment.

In 2020 significant progress was made in advancing the provision of this report which will be provided in a series of thematic volumes with an overarching synthesis report. These will address; fundamental scientific understanding, achievement of climate neutrality, a climate resilient Ireland and opportunities arising from the required transition and transformation.

Strategic partnerships

Seven scholarships were awarded in 2020 as part of the 2019/2020 EPA-Irish Research Council Postgraduate Scheme. Two awards were made in 2020 as part of the 2019/2020 Fulbright-EPA awards. The EPA provided co-funded towards four awards under the 2019 DAFM Call and five under the SFI Frontiers for the Future Programme.

The final report from the EPA-ESRI (Economic and Social Research Institute) Research Framework Phase 2 was released in 2020. (*www.epa.ie/publications/research/environment--health/research-358-research-on-the-environment-health-consumer.php*).

Phase 3 of the Strategic Partnership between the EPA and the ESRI was approved with an additional ten new projects.

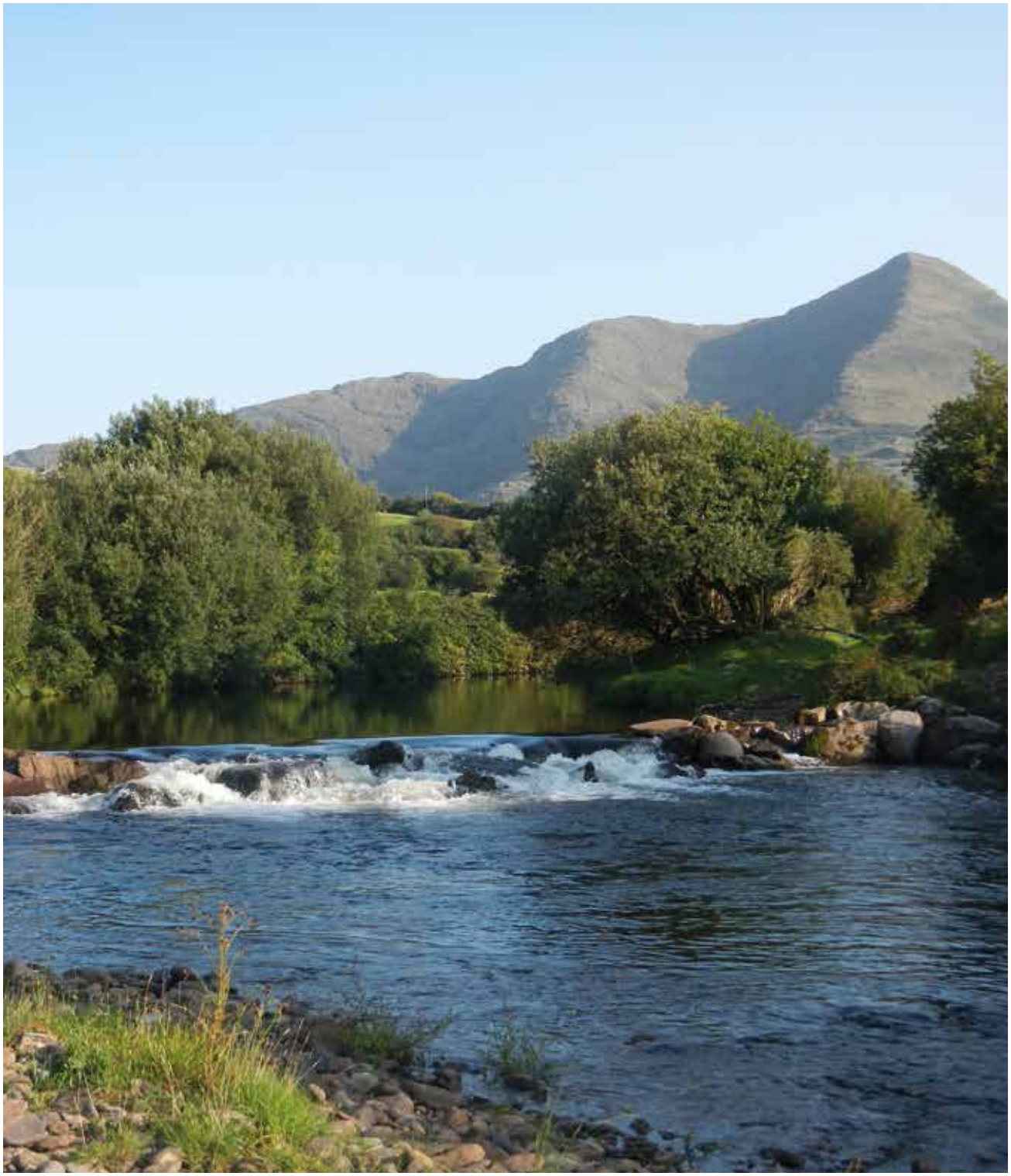
A new EPA-Institute of Public Administration Research Framework was set up in late 2019, with a project looking at Experimental Governance regarding Ireland's Water Governance Structures and Processes.

International linkages

The EPA has continued its role as National Delegate and Contact Point to support researchers in the preparation of proposals under the EU's Horizon 2020 Societal Challenge 5 programme. The results for the 2020 Work Programme indicate a € 4.8 million-drawdown for Irish researchers in 2020, bringing the total drawdown to €31 million since the start of Horizon 2020.

In 2020, the EPA continued its involvement in the Climate and Water Joint Programming Initiatives, the radiation research programme CONCERT and in the BiodivERsA network.

In addition, the EPA contributed to the ShARE 5 Agencies programme. ShARE is a flexible framework for research and evidence collaboration between the five environment agencies of Ireland and the United Kingdom.



Provide timely and tailored information to meet the specific needs of stakeholder groups.

3.3 TIMELY AND ACCESSIBLE INFORMATION

The EPA's collection, management and analysis of data provides efficiencies for both the EPA and those it regulates. Building on its data collection functions, the EPA monitors and reports on Ireland's environment and regulated entities. The EPA provides independent, evidence-based information, in an open and transparent manner that informs decision making by a broad range of stakeholders including government, non-governmental organisations, state agencies, industry and the public. Information is provided in a timely and accessible manner, principally through online resources.

State of the Environment Report

The seventh EPA State of Environment report was successfully completed with the publication in November 2020 of *www.epa.ie/publications/monitoring--assessment/assessment/state-of-the-environment/irelands-environment-2020---an-assessment.php*. The report findings showed that that the overall quality of Ireland's environment is not what it should be, and the outlook is not optimistic unless we accelerate the implementation of solutions across all sectors and society.

Online resources

Ireland's Environment

The Ireland's Environment web resource (www.epa.ie/irelandsenvironment) provides environmental data on an easy-to-navigate platform.

The web resource was updated regularly during 2020. New data from published reports, including the four-yearly State of Environment report, was made available on the environmental indicators and information pages. Information is available in accessible formats including videos, charts, infographics and factsheets compiled under eight environmental themes: air, climate, water, waste, nature, land and soil, environment and wellbeing, and sustainable economy.

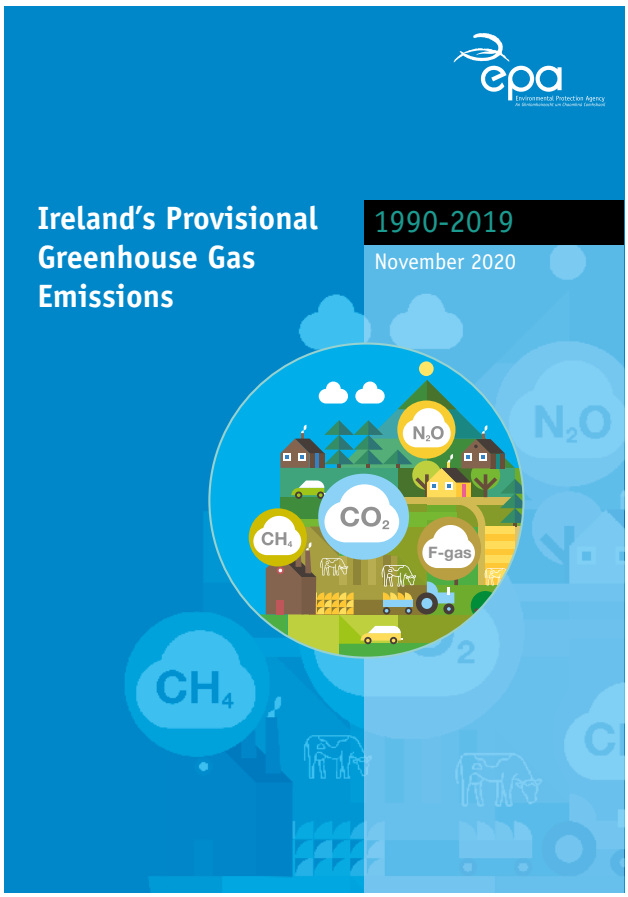
Air quality

In 2020 the EPA's air quality webpages (www.epa.ie/air/quality) were further upgraded to a newer display system with improved functionality allowing easier 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 scale indicating how good or poor the air quality is. The scale is linked to health advice for the public and those vulnerable to poor air quality. 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

Building on the work done in 2019, when the EPA launched a new greenhouse gas emissions web resource (www.epa.ie/ghg), in 2020 the key summary reports were revamped to improve their accessibility and readability. This was done for the Air Pollutant emissions report in June, followed by the Greenhouse gas Projections release in July and finally the Greenhouse gas Inventory publication in November. The revamp now provides a coherent consistent style across all three publications. Further accessibility updates were made to the GHG web resource, which was assessed by accessibility experts and rewritten based on this input. Finally, some short animations were produced to accompany the greenhouse gas reports, providing key highlights and messages and narrated by the subject matter experts.



National waste statistics

The National Waste Statistics Summary Report for 2018 was published in September 2020, summarising the latest waste data and highlighting key trends and Ireland's progress towards EU targets.

The EPA's National Waste Statistics web resource (www.epa.ie/nationalwastestatistics/) continues to provide the most recent available waste data for Ireland to view and download. During 2020, online data releases were published for waste streams including municipal, household, packaging, hazardous, composting, waste electrical and electronic equipment (WEEE), end-of-life vehicles and construction & demolition waste.

Radon

The EPA is the main provider of information and guidance to stakeholders in relation to radon gas. During 2020, the radon web resource (*www.epa.ie/radon*) continued the provision of helpful and practical advice on radon testing and remediation for householders, businesses and building professionals. In total, radon-related pages were viewed more than 100,000 times during 2020. In addition, a freephone radon advice number is provided by the EPA 24 hours a day, seven days a week.

Aquatic Environment

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 information in Ireland. Maps, dashboards, trends, and charts are publicly available for almost 5,000 water bodies. 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 our social media channels.

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: *www.gis.epa.ie/GetData/Download*

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: *www.epa.ie/hydronet/*.

In 2020, the EPA also provided access to estimates of river flow for ungauged catchments. Summary statistics are available to view and download via the EPA Water Maps Portal: *https://gis.epa.ie/EPAMaps/Water*

In May 2020 the EPA commenced publication of a monthly National Hydrometric Bulletin. 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: *www.epa.ie/our-services/monitoring--assessment/freshwater--marine/rivers/monthly-hydrology-bulletin/*

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 quarterly (*www.epa.ie/publications/compliance--enforcement/drinking-water/epa-drinking-water-remedial-action.php*) and gives the location of each supply, the reason the supply is on the RAL and the planned completion date for the remedial works.

Wastewater

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 wastewater discharges. Information on the EPA's Priority Urban Area List is available on the EPA Sewage Treatment Maps: *gis.epa.ie/EPAMaps/SewageTreatment*.

Beaches

The Beaches web resource (*www.beaches.ie*) provides information about bathing water quality at Ireland's beaches and lakes. The site provides a range of bathing information, including the recent water quality at each beach, any swim restrictions that are in place, weather and tide information. 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, designed to detect radioactivity in Ireland, if any, following a major incident at an overseas nuclear facility. Live data is publicly available on the EPA and European websites.

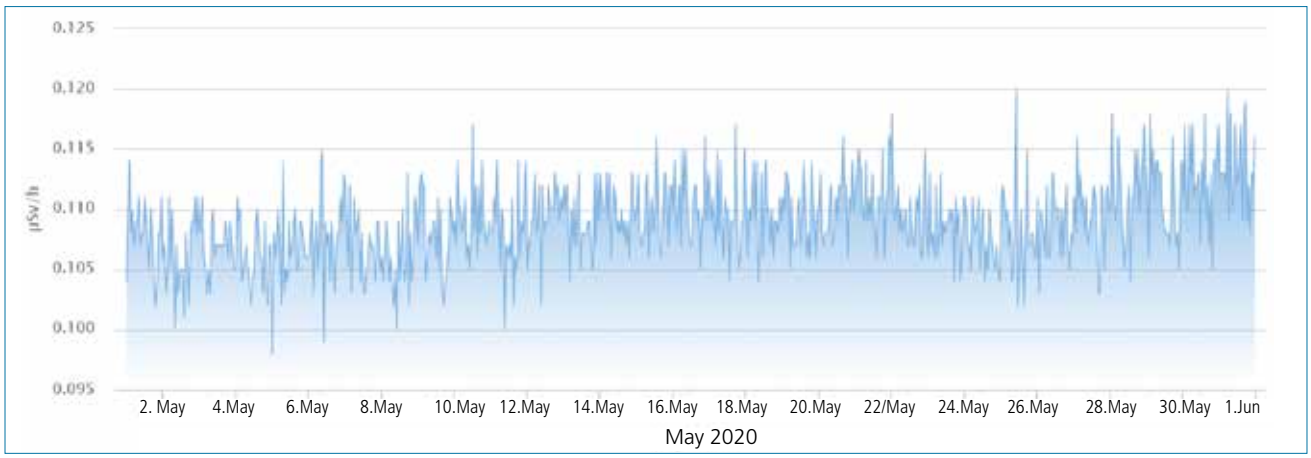
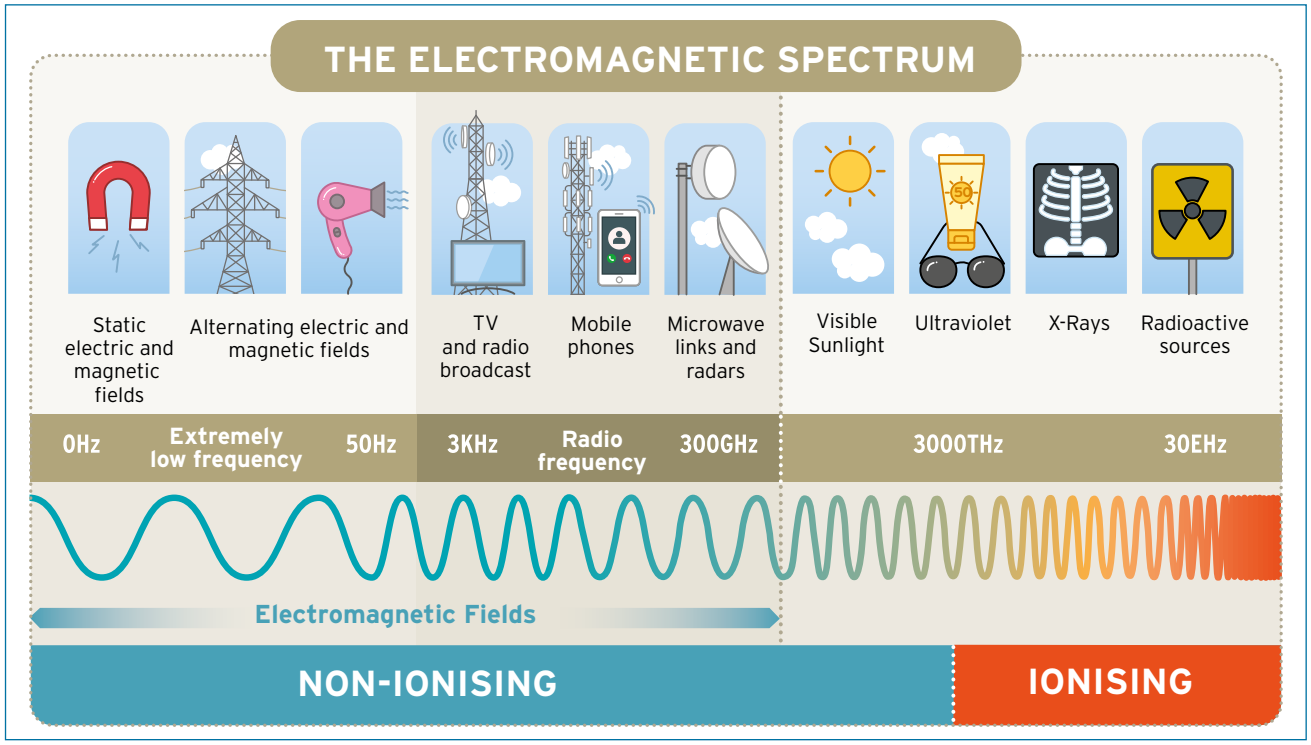


Figure 11. Ambient Gamma Dose Rate Monitoring at Johnstown Castle Estate, Co. Wexford

Non-ionising radiation

In 2020, the EPA continually updated its EMF web content to in response public enquiries on 5G technology and mobile phone handsets. http://www.epa.ie/radiation/emf/health/. In addition, new web content was developed on the EPA's National EMF Monitoring Programme. *http://www.epa.ie/radiation/emf/emfmonitoringprogramme/*



GeoPortal map resources and Open Data initiatives

The EPA Geoportal: *https://GIS.EPA.ie* is designed to make data about the environment easier to find, use, browse and understand. There are several different functionalities on the Geoportal; See Maps allows the public to access all web GIS applications, Get Data allows users to browse, download and consume EPA data in their own GIS applications, Ask and Learn allows users to learn about and better understand our data.

The Open Data Strategy 2017-2022 builds on the substantial achievements of the Open Data Initiative and sets out a roadmap for the Initiative's continued progress and development for the next five years. There are 52 actions to be completed, which the EPA has successfully completed all actions in agreement with the plan to date.

The EPA Open Data programme continued during 2020 with 319 EPA datasets published to-date and over 55,043 views. Open Data's interest is prevalent as the views have grown by 17,000 compared to the 11159 views for 2018.

The concept of Open Data is about making data held by public bodies available and easily accessible online for reuse and redistribution.

Pollutant Release and Transfer Register

Ireland's Pollutant Release and Transfer Register (PRTR) (*https://gis.epa.ie/EPAMaps/PRTR*) provides a publicly accessible and searchable database which members of the public can use to search for facilities where specified industrial activities are carried out and are releasing pollutants or transferring waste in excess of 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. The current GIS version of Ireland's PRTR was launched in November 2020 to improve accessibility.

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 on the EPA website: *www.epa.ie/terminalfour/ippc/index.jsp*. Since December 2017, all applications are received online and the majority of interactions with the applicants and the public are electronic and published on the EPA website, including the receipt of submissions and objections.

During 2020, there was almost 400,000 unique pageviews of the IE/IPC license search web pages. By the end of 2020 there were over 5,000 submissions received from the public using the user-interface.

Enforcement information

In 2020, the EPA continued to enhance 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 updated the list of National Priority Sites 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.

4

"Work with others to advocate for a clean, healthy and well-protected environment and sustainable environmental behaviour."

To deliver on our strategic objectives, we will continue to work with and through others to effect positive outcomes for the environment.

4. ADVOCACY

4.1 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 2020, the EPA attended the Joint Oireachtas Committee on Housing, Local Government and Heritage on the General Scheme of the Water Environment (Abstractions) Bill.

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 Memorandum of Understanding (MoU) and Service Level Agreements (SLA) with various organisations that involve or contribute to matters relating to the environment. Memorandum of Understandings 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 topics related to the environment. During 2020 the EPA continued to participate in EEA activities and its coordination role around Ireland's participation in the EEA and in the European Environment Information and Observation Network (Eionet), a partnership network of the EEA and its member and cooperating countries.

To show progress against agreed environmental data reporting criteria (timeliness and data quality), the EEA released their ranking of core data flows for 2019 during 2020. Seven countries (the same number in 2019) managed to achieve a data flow score of 100 percent. Ireland was one of these countries. The EEA notes that the score of 100 percent indicates the provision of timely and high-quality data across all covered data flows.

Laura Burke, Director General of the EPA, continues to serve as the Chairperson of the EEA Management Board. The Management Board represents all EEA member countries, the European Commission and European Parliament. It adopted a new EEA-Eionet Strategy for 2021-2030 in December 2020. In its role as the National Focal Point, the EPA has contributed to the EEA-Eionet strategy development and the Eionet modernisation process – to bring the strategy to life at a practical level.

The EPA also actively participates in the European Network of the Heads of Environment Protection Agencies (NHEPA). This informal network of the heads and directors of environment protection agencies and similar bodies across Europe works to exchange views and experiences on issues of common interest in the practical day-to-day implementation of environmental policy.

Climate change

The EPA worked on several international climate issues during 2020 including representing Ireland at three meetings of the Intergovernmental Panel on Climate Change (IPCC) held prior to the COVID-19 restrictions and activity participating in virtual meetings of the UN Framework Convention on Climate Change in June and November. These had strong science policy focus and included:

- The Structured Expert Dialogue on the adequacy of the long-term goal and progress in implementation which focused on new material from the IPCC.
- Dialogues on Ocean Land and Research
- The second Earth Information Day

The EPA provides Secretariat support to Department of Environment, Climate and Communications on the roll out and delivery of the National Dialogue on Climate Action (NDCA). An enduring process for the NDCA is currently being established with a focus on community and youth 'climate conversations and a National Climate Forum with a view to raising awareness, engagement and activation. During 2020 the EPA repositioned its role within the NDCA structure to develop and set up a 'knowledge hub' around climate activation. The aim being to develop a deep understanding of the attitudes and behaviours of the Irish public to climate change at the national, sectoral and local level. Yale University's Climate Change Communications Programme have been commissioned to undertake research in this area using their unique methodology to produce a report on 'Climate Change in the Irish Mind.' The outputs from this work should form a key national resource for the development of engagement and activation campaigns conducted at various levels. Research on deliberative methods for community engagement is ongoing through the IMAGINING 2020 project and the C-Change project in UCC.

Citizen science

The EPA continued to work with partner organisations on several citizen science projects.

The GLOBE Programme, implemented in partnership with An Taisce involved the measurement of nitrogen dioxide (NO2) at several locations around schools. In 2020, students and teachers from 100 schools around the country took part in this project.

Building on the success of GLOBE, the EPA and An Taisce are working together to develop a large-scale citizen-based nitrogen dioxide monitoring project that will increase public awareness of and engagement with the topic of air quality: "Clean Air Together". The project was piloted during Autumn 2020 in Dublin with approximately 70 participants involved. The roll-out of the Dublin-phase of the project is planned for late 2021 and a subsequent phase of the project in Cork planned for 2022.

The EPA worked with Wexford County Council Library Service to extend the availability of digital radon monitors to library members in New Ross, in addition to those already available in Bunclody Library. This was launched during a virtual event that was part of the 2020 Wexford Science festival.

The EPA continued to work with the National Biodiversity Data Centre (NBDC) on the 'Dragonfly Ireland' survey, which has the object of producing an updated dragonfly and damselfly atlas for Ireland. During 2020 there was a 50% increase in dragonfly and damselfly records compared to 2019. A number of online talks and workshops were organised to support citizen scientists during the Covid-19 restrictions.

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. The records collected will help improve the knowledge of marine species distribution and explore their use as bio-indictors of water quality and climate change. There was a 107% increase in the number of marine species recorded in 2020 compared to 2019 and a total of 429 different marine species were recorded in 2020.

Explore Your Shore workshop, Bull Island, Co Dublin

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 reviewed and made submissions on key national and regional plans/programmes/strategies and associated SEAs. A significant number of plans relating to tourism were reviewed as well as plans for the marine planning, water and regional land use planning sectors.

The National SEA Forum met in 2020 to facilitate better information sharing and collaboration between SEA authorities. The EPA shares a 'live' listing of open SEA consultations with the SEA Forum members.

A second review of Strategic Environmental Assessment Effectiveness was published in January 2020. Based on its key findings and recommendations, and in consultation with the SEA environmental authorities, a SEA Action Plan 2021-2025 was developed. The Plan includes actions assigned to each of the five environmental authorities.

NIECE

The EPA continues its role in co-ordinating the activities of the Network for Ireland's Environmental Compliance and Enforcement (NIECE). The network 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.

In 2020, the NIECE Network held four national online events with approximately 2,300 people attending in total. Three of these events covered the areas of water, waste and the circular economy and air. The fourth event was specifically for Local Authorities to help them prepare their environmental enforcement plans. Social media was used to report on these events and the presentations were published on the EPA website and the EPA YouTube channel.

In addition, the Network facilitated the agreement and communication of the annual National Environmental Priorities for Local Authorities, to improve environmental enforcement planning and delivery. Training events, workshops, guidance, and information sharing were facilitated through the various working groups and networks that operate within NIECE.

Environmental Pillar

The Environmental Pillar comprises 26 national environmental non-governmental organisations, working together to represent the views of the Irish environmental sector. The EPA meets with the Irish Environmental Network (IEN) at least annually. Such meetings provided a briefing and exchange of perspectives on Irish environmental issues. Given the Covid-19 restrictions one virtual meeting was held in 2020.

Ireland's National Action Plan (iNAP) for Antimicrobial Resistance (AMR) 2017-2020

EPA continued its participation in the National Consultative/AMR action plan group through attending 10 meetings related to iNAP with DoH and DAFM and others that are part of the national implementation group. EPA input into priorities for the successor national action plan for AMR (iNAP2). The national Environment, Health & Wellbeing conference in November 2020 (convened by EPA in collaboration with HSE and ESRI) included a special session on the national antimicrobial resistance action plan. EPA continued its steering of national AMR research activities including providing €500,000 in research funding to support Irish institutions involved in European research related to AMR. The EPA also commissioned a desk study on AMR research/knowledge gap analysis which is due to be published in 2021 and which will inform future needs.

Air quality

The Air Quality Health Information working group, chaired and facilitated by the EPA, during 2020 provided a forum to support the enhanced communication of accessible real-time information on air quality and health, linked to expansion of the monitoring network, modelling and citizen science activities. This group includes stakeholders in environment and health, including the Health Service Executive (HSE) and enables discussion on air quality-related health topics.

Nuclear safety

To allow the EPA to fulfil its responsibility in monitoring developments abroad in relation to nuclear installations and radiological safety and to advise the Government on the implications of such developments for Ireland, the EPA takes an active role in national and international committees on nuclear safety. In 2020, this included preparing a submission to the transboundary Environmental Impact Assessment public consultation on the proposed Sizewell C new nuclear power plant in Suffolk (England) and reviewing notifications of proposed lifetime extensions for the Doel nuclear power plant in Belgium and the Loviisa nuclear power plant in Finland.

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.

The EPA plays 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. The EPA is a vice-chair for the Working Group on Emergencies.

European Nuclear Safety Regulators Group

The EPA represents Ireland on European and international forums on issues relating to nuclear safety. 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 2020, this included the finalisation of a report on how ENSREG National Regulatory Organisations implemented the ENSREG principles on openness and transparency which the EPA led out on.

Bilateral agreement with the UK on radiological and nuclear matters

The EPA meets regularly with the Environment Agency and the Office for Nuclear Regulation in the UK, to discuss radiological and nuclear issues. In 2020, these discussions centred on the UK's nuclear safety arrangements following their departure from the EU and the Euratom Treaty, Sellafield, new nuclear build, the development of a Geological Disposal Facility and international developments in nuclear and radiation safety and nuclear emergency planning.

In addition, the EPA supports DECC in the twice-yearly meetings of the UK–Ireland Contact Group on Radiological Matters. In the October 2020 meeting, discussions were included on the impact of COVID-19 restrictions on nuclear sites, projects, and arrangements.

International Obligations on Nuclear Safety and Radioactive Waste Management

The Convention on Nuclear Safety (CNS) is an international convention that obliges all signatory countries to maintain a high level of safety in nuclear power reactors, to maintain emergency planning arrangements and to report on measures taken in this respect. Every three years, all contracting parties to the CNS, including Ireland, must demonstrate compliance with the convention and undergo a peer review by other contracting parties. The 8th review meeting of all contracting parties to the CNS which was scheduled to take place at the end of March 2020 was deferred until 2023 because of COVID-19 restrictions.

The Joint Convention on the Safety of Spent Nuclear Fuel and on the Safety of Radioactive Waste Management is an international convention that addresses the issue of spent fuel and radioactive waste management safety on a global scale. It does so by establishing fundamental safety principles and creating a review process. Every three years, all contracting parties to the Convention, including Ireland, must demonstrate compliance with the Convention and undergo a peer review by the other contracting parties. As part of this process, the EPA assisted DECC in preparing Ireland's seventh national report, which was submitted to the International Atomic Energy Agency (IAEA) in 2020 with the seventh review meeting of contracting parties likely to take place in 2022.

Also, in 2020, EPA supported DECC in preparing Ireland's second national report required under Article 9.1 of Council Directive 2009/71/Euratom establishing a community framework for the nuclear safety of nuclear installations, as amended by the Council Directive 2014/87/Euratom of 2014.

Emergency planning

In 2020, the EPA participated in six international emergency exercises organised by the European Commission and the IAEA. In addition, the EPA participated in an exercise organised by the UK's Department of Business, Energy and Industrial Strategy to test practical arrangements to support the UK–Ireland bilateral agreement on early notification of a nuclear accident or incident of radiological significance. The EPA also organised virtual emergency exercises with weather forecasters from Met Éireann.

The EPA continued to be active participants in the Government Task Force on Emergency Planning and its subgroups and contributed to the 2020 review of the National Risk Assessment for Ireland led by the Office of Emergency Planning. The EPA continued to support the IAEA by participating in technical working groups to draft guidance.

Providing timely and easily accessible information to all our stakeholders contributes to public participation in environmental decision–making and gives people the information they need to make environmentally informed choices.

4.2 AWARENESS RAISING

Communicating key messages

The EPA's website is the principal communication tool for disseminating information to the public with over 1,046,000 sessions on the website during 2020. Peaks in activity during the year corresponded with media coverage of environmental issues and publication of reports. High volumes of traffic to the website were recorded in relation to retrieval of information on EPA–licensed sites; downloading publications; accessing information on licensing and enforcement; careers in the EPA and accessing information on thematic environmental areas including climate change, air, water, waste, and radon.

Website development

During 2020, the EPA implemented a programme to redevelop its website with the intention of launching a newly designed and accessible website in 2021. A new information architecture has been developed together with new design and content to provide a better user experience. In addition, the process of re-building the underlying IT infrastructure began.

Development of the existing EPA website in 2020 included an upgrade to the EPA's air quality webpages (*www.epa.ie/air/quality*) to a newer display system with improved functionality allowing easier access to real-time air quality information from the substantially expanded national monitoring network.

Media relations

The EPA provides a 24-hour service to the media and during 2020 handled 614 media queries and issued 44 press releases. Environmental news stories featured in over 17,000 newspaper articles throughout the year.

Social media

The EPA has focused on increasing its social media presence throughout 2020, developing engaging content with targeted messaging. The @EPAIreland Twitter, Linked-In and You Tube accounts continued to grow. An Instagram account was launched in February targetting the 18–35-year age group as a key audience for EPA to reach.

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.

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 2020 including delivery of a radon monitor rental scheme and delivering a climate change lesson as part of our partnership with Junior Achievement Ireland.

During 2020 the EPA continued to work in partnership with several organisations on citizen science projects that support the EPA priorities of clear air, clean water and sustainable behaviour. These included working with An Taisce on the GLOBE and Clean Air Together projects which focus on air quality, also working with the National Biodiversity Centre on the 'Dragonfly Ireland' and 'Explore Your Shore' projects.

As part of the EPA's corporate sponsorship commitments, local initiatives were supported that raise awareness about environmental issues or the work of the EPA. In 2020 the EPA once again supported the EcoUNESCO Young Environmentalist Awards and the promotion of environmental

messaging throughout the virtual Wexford Opera Festival, together with several other local initiatives that promoted environmental learning and activities.

The EPA sponsored the Upcycle Challenge, a competition led by the Waste Management Planning Regions to encourage circular economy activities of reuse, repair and upcycling by the public. There were 259 entries and winners for the nine categories were announced in early December.

The fourth **'Story of Your Stuff Competition'** for secondary schools was completed in June 2020. Despite COVID-19 restrictions, it ran successfully, receiving more than 120 entries from schools across the country. Entries highlighted the environmental impact of everyday items or activities, and students creatively told their stories through visual mediums. The competition promotes the environmental information available on the Ireland's Environment portal on the EPA website. Students from St. Andrews College, Booterstown, Dublin won first prize for a video telling the story of soap while an entry about the story of paper from Coolmine Community School, Clonsilla, Dublin 15 won the first ever Climate Topic Prize. All information about the winning videos can be found on *The Story of Your Stuff* website.

Pictured Left to right – Professor Emma Teeling, Deputy Director, UCD Earth Institute, Aldiana Hoxha, Tomi Ayibiowu and Shurooq Azam (Hansfield Educate Together Secondary School, 2019 Winners), Dr Jonathan Derham, EPA.

Television broadcast

The EPA again provided support funding for Eco Eye, and the 18th series was broadcast on RTÉ One early in the year. Viewing figures averaged over 508,000 viewers per programme. This series continues to raise environmental awareness and provides the public with comprehensive information about environmental issues across climate change, waste, biodiversity and water quality. In 2020, the EPA again supported the "10 Things to Know About…" TV Series aired on RTE. This series highlighted the work being undertaken by Irish scientific researchers in the areas of Biodiversity, Bioluminescence, Zero Emissions Transport and Sustainable Energy, Phenology and Healthcare, Flooding and Drought, Photonics, Sensory Perception and Food Science, and showcased the latest research into the Covid19 pandemic.

Environmental queries

The EPA provides an Environmental Queries Service to our 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 and, in 2020, the EPA responded to over 2,410 queries of this nature. The main thematic areas of interest were wastewater (septic tank remediation and grants), air (burning of fuels), waste, water (testing of

private wells). However, the Covid-19 lockdown gave rise to an increase in queries, particularly relating to household waste (illegal dumping), noise and the impact of cleaning products on the environment.

Conferences and exhibitions

Due to COVID-19 most EPA events moved online during 2020. Key national and local events included the BT Young Scientist & Technology Exhibition (where the EPA sponsored the Special Environmental Award). These events provided an ideal opportunity to raise awareness of, and engage the public's support in, environmental issues.

Outlined below are online conferences and events held during 2020.

EPA National Climate Conference

Due to the early restrictions around the Pandemic the National Climate Conference did not take place in 2020. In preparation for the 5YAR development process three virtual workshops were held to explore elements of the recent IPCC Special Reports on warming of 1.5°C, Land and Oceans & Cryosphere. These were well attended and highlighted areas of interest for the report such as sea-level rise and climate neutrality. Outputs from these workshops will contribute to the 5-year assessment report (Section 3.2)

During 2020, the EPA established a series of lunch time Climate Conversations with the Royal Irish Academy. These featured the findings provided in three EPA funded research reports on; Carbon Lock-in, Ireland's future climate and requirements for Negative Emissions. The Climate Conversations were held virtually and were highly successful. More events are planned for 2021.

Climate Change Lecture Series

Dr Artur Runge-Metzger

Two lectures were held in 2020. The first lecture was held on 6th February at the Mansion House in Dublin. The Lecture that evening was delivered by Dr Artur Runge-Metzger, Director, DG Climate Action, European Commission and the title of his lecture was 'The European Green Deal: Striving to be the First Climate-Neutral Continent by 2050'. Over 300 people attended on that evening and it was moderated by Dr John Bowman.

The event which was simultaneously broadcast on the EPA website. A recording of the lecture can be viewed at *www.youtube.com/watch?v=uqKMcggIMFU&list=PLCDE951EB77E87100&index=2*

Dr Pep Canadel

The second lecture was an online event, held on 11th November. The Lecture was delivered by Dr Pep Canadell, Chief Research Scientist in the CSIRO Climate Science Centre and the Executive Director of the

Global Carbon Project. The title of his presentation was 'Covid-19 and Global Carbon Emissions: A glimpse of the challenge and opportunities of reaching the Paris climate commitments'. The event was delivered on a platform which was made available to all who registered. That evening almost 500 people tuned in and it was moderated, as always, by Dr John Bowman. The lecture can be viewed at www.youtube.com/watch?v=cU_ZqDBPTmQ&list=PLCDE951EB77E87100&index=1

National Waste Event

The National Waste Prevention Programme hosted a successful first EPA Circular Economy Conference. The event was held in the weeks following the launch of the new Waste Action Plan for a Circular Economy and featured a diverse range of speakers. The event ran over two days with a circular economy focus on the first day including a keynote address from Wesley Spindler, the Global Circular Economy Lead at Accenture. The second day covered enforcement issues and includes speakers from EPA and local authorities.

National Water Event

On the 17th and 18th of June 2020, the EPA held its National Water Event as a free online conference. The theme of the conference was "Restoring Our Waters", featuring a wide range of speakers from the water sector sharing their expertise in dealing with the pressures and challenges of restoring our waters. Topics included water quality, restoration, and communities in action. It was the EPA's largest water event ever, with over 1250 attending this online event. Presentations are available on catchment website: www.catchments.ie/2020-epa-water-conference-watch-online-now/

National Air Event

The National Air Event "The Air we Breathe", was held in 2020 in an online format, streamed via a web-based app on the morning of 14th and 15th October. The event was a forum for providing and sharing of practical information on air quality and enforcement. It was attended by an increased number of representatives from the EPA, Health Service Executive (HSE), local authorities, industry, consultants, third-level research groups, NGO's, and members of the public. The online forum attracted 311 attendees compared to 150 in 2019.

Environment Health and Wellbeing Conference

In November, the EPA co-hosted the annual conference about environment health and wellbeing with the HSE and the Economic and Social Research Institute (ESRI). Almost 500 delegates registered to attend the virtual event and up to 224 of them attended talks at any one time throughout the day. Delegates are drawn from the HSE, ESRI and EPA and others working in the health, wellbeing and citizen engagement area, along with representatives of non-governmental organisations and academics. Presentations and video recordings from the conference are available on the EPA YouTube channel: www.youtube.com/playlist?list=PLFesobjWT1FhV74QBHfMJvL8_aBkG_CRa

Environment and Law Conference

Convened by the Irish Centre for Environmental Law and the EPA, a joint EPA/ICEL virtual conference took place on 11th November 2020. Laura Burke, Director General EPA and the Hon Mr Frank Clarke, Chief Justice provided opening remarks which set the scene. Legal experts considered several contemporary themes relating to environmental law enforcement including Protecting the Natural Environment; the Role of Law in Climate Action; Environmental Impact Assessment; Environmental Liability Directive; and the idea of a Planning and Environmental Court. 730 participants attended including a significant number of attendees from 3rd level. Presentations are available at the following link: www.youtube.com/playlist?list=PLFesobjWT1FgaEN2j4vGBK3k20hHS07Ds.

National Radon Control Strategy

The National Radon Control Strategy (NRCS) is a cross-government strategy that aims to reduce the incidence of radon-related lung cancer cases in Ireland. The EPA, with other stakeholders, implemented the priorities for 2020, as set out in the strategy.

Field trials on the effectiveness of passive sumps as a radon preventive measure were undertaken and built on previous EPA funded research on the optimal radon preventive measures for the construction of homes in Ireland. This work was carried out in collaboration with a radon contractor, Wexford County Council, the DHLGH and UCD. Initial data analysis shows that passive systems offer significant potential to incorporate a sustainable and low-cost preventive measure in new builds.

In collaboration with researchers in Trinity College Dublin and the Geological Survey of Ireland, the EPA continued development of a refined radon risk map during 2020. This work included a consideration of risk communication and will be followed up with user testing in collaboration with the Economic and Social Research Institute.

An EU project, RadoNorm, was launched in 2020 in which the EPA will test the role of citizen science in increasing radon remediation rates and to develop a citizen science model that can be used across Europe.

European Radon Day 2020 was marked on the 7th of November with a radon awareness campaign highlighting the increased importance of testing during 2020 as we all spent more time at home due to the pandemic response. The campaign included local and national press releases, a series of radio advertisements and a social media campaign.

Noise Workshop

An EPA 'Noise Workshop for Local Authorities' was held in November 2020. This remote Workshop was used to update the LAs on the Round 4 noise mapping process and to ensure that they are fully aware of their roles, responsibilities and reporting requirements.

National Modelling Forum

The second National Modelling Forum was held in an online format in December 2020. This online forum provides an opportunity for the National ambient air quality modelling community to listen to and engage with speakers on international best practice and share and learn from the expertise of their colleagues in Ireland.

EPA/IIEA Lecture Series

The EPA partnered with the Institute of International and European Affairs (IIEA) on a new 'Environmental Resilience' lecture series. This series will see international experts address the most critical environmental issues of our time including: the circular economy, air quality, environmental governance, sustainable waste management, water quality and climate change. The first lecture took place in December 2020 at which Dr John Bell, Director, 'Healthy Planet', Directorate-General Research & Innovation, European Commission spoke about 'Innovation Driving a Green and Just Transition: Mission 2050'.

Education

The EPA sponsored a lesson on 5G/EMF in Science and Technology in Action, a multimedia resource for second-level schools. In 2020, the EPA continued to promote its education materials and other online resources through targeted placement of articles in environmental and educational magazines and through outreach initiatives.

Junior Achievement Ireland programme

The EPA continued its partnership with Junior Achievement Ireland (JAI) in 2020 rolling out the climate change lesson during Science Week. 26 EPA volunteers delivered the workshop to 709 students from 19 schools across 9 counties. A further 85 students (and their teachers) completed the pilot with JAI also, bringing the total students reached to 794.

The aim of JAI is to encourage students to stay in school and to maximise the opportunities that their education provides through delivering programmes featuring enterprise education, STEM (science, technology, engineering and mathematics) skills along with business and life skills.

We strive to deliver national-level, strategic programmes to prevent waste and drive the circular economy in Ireland.

4.3 PROMOTING SUSTAINABLE BEHAVIOUR

National Waste Prevention Programme

Ireland's National Waste Prevention Programme (NWPP) was established in 2004. It is led by the Environmental Protection Agency (EPA), and has been recognised as an exemplary programme in the European Union. The current programme moves the focus from predominantly demonstration and local scale to national-level strategic programmes preventing waste and driving the circular economy in Ireland. Our aim is to provide tools and information to businesses, individuals, and the public sector to influence behavioural change, support sustainable choices and inform policy.

The NWPP is Ireland's primary initiative with regard to developing the circular economy. This economic model looks to minimise the consumption of resources and energy by keeping products and materials in use for longer. It is founded on the waste hierarchy which identifies waste prevention as the primary approach; to be followed by reuse; repair; and recycling.

Drivers for the programme include the EU Circular Economy package and the associated legislative changes, including the Single-Use Plastics Directive. At a national level, waste policy and reporting and the recently published Climate Action Plan provide important inputs. The programme is also informed by the EPA's State of the Environment Report and National Development Plan. Drivers for priority waste streams within the programme are based on national waste statistics and legislative commitments.

The Rediscovery Centre is Ireland's National Centre for the Circular Economy. The centre brings together the skills and expertise of artists, scientists, designers, and craftspeople in a common purpose of sustainability. COVID restrictions presented challenges to this outward facing organisation, but they adapted by moving online and held events for 6,465 participants, along with 28 online workshops by their social enterprises (Rediscover Furniture, Rediscover Fashion, Rediscover Cycling, Rediscover Paint).

CIRCULEIRE: The National Platform for Circular Manufacturing is an industry-led public-private partnership that works with leading Irish manufacturers to develop their business models from linear to circular through benchmarking, auditing and innovation projects. The platform's innovation funding scheme provided awards to two circular economy projects in 2020. Industry-members collaborated to develop white papers on i) circular procurement; ii) industrial symbiosis; and iii) the circular bio economy.

The Local Authority Prevention Network (LAPN) provides technical assistance and funding for the promotion of resource efficiency and waste prevention at county-level. A report on social engagement arising from the 2019 projects was completed and identified that over 1.1 million citizens were engaged with through the 42 projects. The annual grant-aid call focussed on three thematic area: paint reuse;

fostering a repair culture; and waste prevention innovation. Following a very high number of applications and grant aid requests, fourteen projects were supported to the value of €84,000. LAPN produced a video on www.repairmystuff.ie, tailored for individual local authorities to promote International Repair Day in October and this was promoted widely on social media. An external review of LAPN took place in 2020 to consider the impacts of the programme to date and its future direction.

Green Public Procurement

Green Public Procurement (GPP) is a process where public authorities seek to source goods, services or works with a reduced environmental impact. Ireland's annual public sector purchasing accounts for 10% to 12% of GDP, which provides the public sector with significant influence over the provision within the marketplace of goods, services and works that are more resource-efficient and/or less polluting. Green public procurement also has a key role to play in delivering on national climate goals and targets and there is an obligation on every public body to play its part. Under the Programme for Government, all procurement using public funds will have to include green criteria by 2023. New legislation now applies to the procurement of many goods & services, including vehicles; building works; and energy-using products.

The EPA worked on three strands of Green Public Procurement in 2020: (i) revision of the 2014 Green Procurement Guidance for the Public Sector (ii) development and roll-out of a training programme for the public sector; and (iii) initiation of monitoring and reporting on GPP for government departments. By year end, the revised guidance was drafted and issued for consultation to 75 stakeholders; and the new training was delivered to 76 public sector purchasers from government departments, local authorities and state agencies.

Stop 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 meeting Ireland's commitment to halve food waste by 2030. This involves a transformation of public attitudes and behaviours on food; and also requires a strong response along every step of the food supply chain.

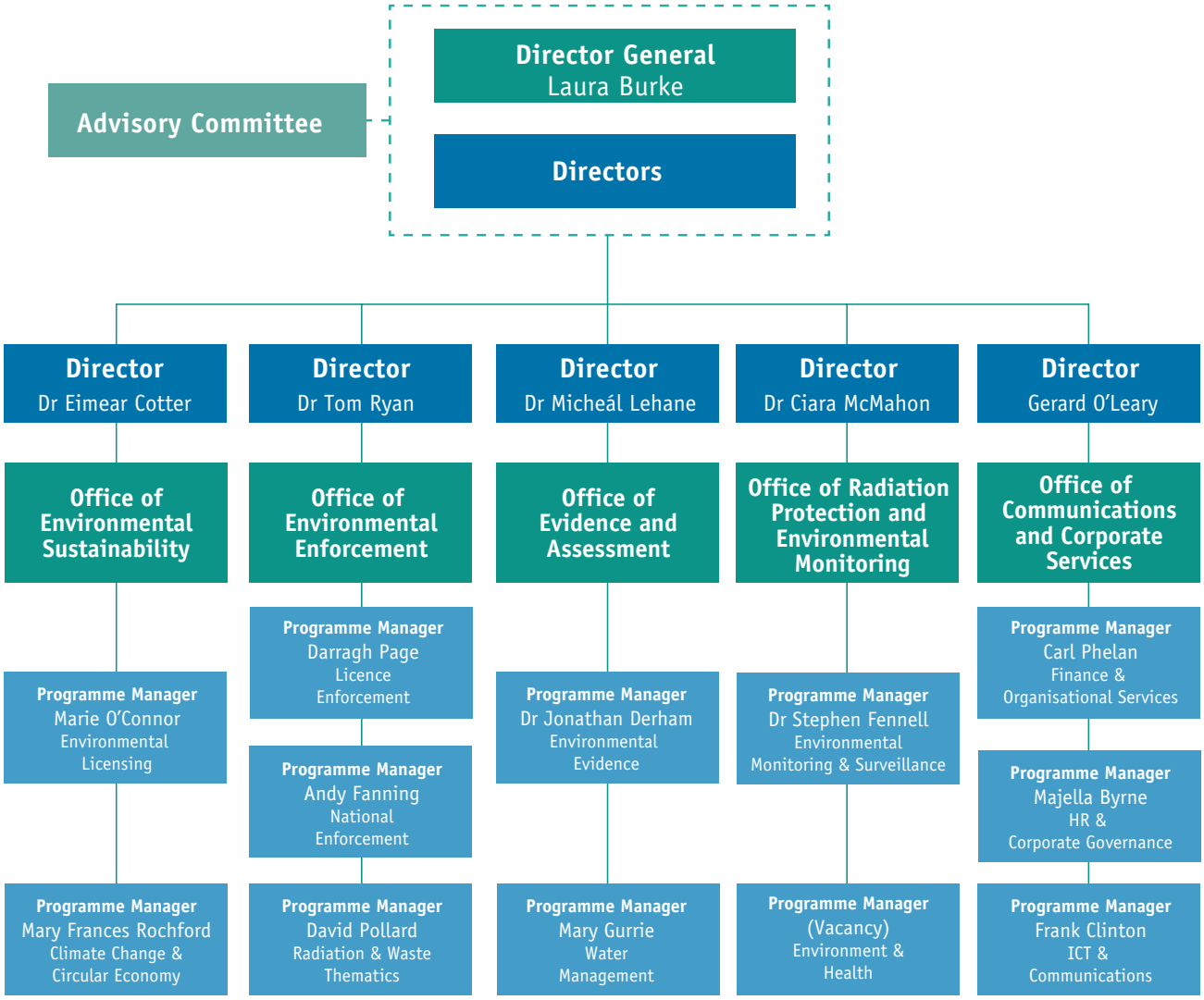
A nationally representative online survey of 1,000 adults ages 16+ was undertaken on attitudes towards food waste and food management behaviours at home. This shows that food waste is a high priority in Irish households, and that main reasons for waste are food passing its Use-By date and forgetting to eat leftovers in time. Informed by the food waste attitudes survey, a national Stop Food Waste 'Eat It or Freeze It' campaign took place in November. The media coverage for the campaign reached 4.6 million people, while social media posts had a reach of 769,000 with 3.6 million impressions, leading to a significant increase in traffic to StopFoodWaste.ie.

5

We will develop our staff and align our organisation to deliver best environmental outcomes by focusing on the development and promotion of organisational health, wellbeing and safety at work and promoting a culture of leadership, reform and innovation.

5. ORGANISATIONALLY EXCELLENT

5.1 ORGANISATION STRUCTURE



5.2 BOARD AND ADVISORY COMMITTEES

EPA Board of Directors

Pictured (left to right): Dr Tom Ryan (Director, Office of Environmental Enforcement), Dr Eimear Cotter (Director, Office of Environmental Sustainability), Mr Gerard O'Leary (Director, Office of Communications and Corporate Services), Ms Laura Burke (Director General), the late Dr Ciara McMahon (Director, Office of Radiation Protection and Environmental Monitoring and Dr Micheal Lehane (Director, Office of Evidence and Assessment).

Board meetings

The EPA Board comprises six full-time Executive Directors. A total of 61 Board meetings were held in 2020: 13 general meetings, at which corporate policy, governance, strategy, finance and planning issues were dealt with, and 48 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 Environment, Climate and Communications. The Director General of the EPA is, ex officio, a member and Chairperson of the Committee. Two new members were appointed to the Committee in July 2019. The Advisory Committee has a wide range of advisory functions including making recommendations to the EPA and or the Minister.

Appointees from prescribed bodies

Dr Laure Marignol (nominated by Trinity College Dublin) appointed on 1 July 2019

Ministerial appointees

Ms Aebhin Cawley appointed on 1 July 2019

Chairperson

Ms Laura Burke, Director General, EPA

Other Advisory Committees

Dumping at Sea Advisory Committee

A new Dumping at Sea Advisory Committee was established in 2020. Invitations were extended to 9 organisations to the Advisory Committee including an international expert. The term of office the Dumping at Sea Advisory Committee is for the period November 2020 to November 2023. One meeting was held in 2020 and Committee members were introduced to the EPA DAS permitting function, the legislation and licensing processes in place to facilitate public participation as well as specified body and statutory consultation. Members were invited to submit comments or observations on permit applications and amendment requests on hand.

Genetically Modified Organisms Advisory Committee

The EPA consulted with the 8th Genetically Modified Organisms (GMO) Advisory Committee (2017-2020) in relation to a review of:

- A notification received in respect of the administration of a gene therapy product under a managed access programme in a hospital setting under the GMO (Deliberate Release) Regulations, 2003 and
- two marketing authorisation notifications received from the European Medicines Agency (EMA) in respect of human medicinal products containing or consisting of GMOs.

The 8th GMO Advisory Committee (GMO AC) expired on 30th June 2020 and a new (9th) committee was established to run until 2023. A meeting of the new Committee was convened in December 2020. The EPA consulted with the committee in relation to three marketing authorisation notifications received from the EMA, relating to human medicinal products containing or consisting of GMOs.

Health Advisory Committee

The Health Advisory Committee was established in 2011 to assist and advise the EPA in relation to the public health implications of matters pertaining to environmental protection. The committee comprises representatives from public bodies working on environment and health issues, including the Health Service Executive (HSE), the Health and Safety Authority (HSA), the Health Research Board (HRB), the Department of the Environment, Climate and Communications (DECC), the Department of Agriculture Food and the Marine (DAFM), the Department of Health, An Bord Pleanála, the Food Safety Authority of Ireland, the Health Products Regulatory Authority, Department of Housing, Local Government and Heritage (DHLGH) and the County & City Managers Association (CCMA). The committee met once during 2020 and topics examined included the current and emerging challenges in health and environment in relation to water, air, climate, regulation, data and research.

Radiological Protection Advisory Committee

The second Radiological Protection Advisory Committee commenced in 2019 for a three-year term of office. The Committee is made up of sixteen members nominated by organisations with expertise relevant to the radiological protection functions of the EPA. Due to Covid-19, the committee was only able to meet once this year, where they considered the International Commission on Radiation Protection dose conversation factors for radon, the development of a new Code of Practice on complying with 2019 Ionising Radiation Regulations for licensees and the EPA's Radiation Protection Adviser (RPA) approval scheme.

5.3 HUMAN RESOURCES

The EPA aims to become a role model for the stewardship and development of our people and organisational resources.

During 2020, significant progress was made in implementing priority actions of the EPA's Human Resource Development (HRD) Strategy including:

- Revision of the Competency Framework and Recruitment Process.
- The EPA was awarded the IBEC KeepWell Mark accreditation.
- Management & Leadership Network conference held on 'Positive Leadership'.
- Rollout of HR Business Partnering.
- Improved outcome metrics.
- Ongoing improvement of HRD business processes including an upgrade to our HRD system.
- Implementation of a learning management system to facilitate online training.

Recruitment

The EPA is recognised as an employer of choice in the public sector and continues to attract a high level of interest in posts advertised. During 2020, the EPA advertised 12 open recruitment competitions and received almost 400 applications. The Competency Framework and Recruitment Process was revised to focus on continuing to attract and retain staff with the necessary skills and expertise.

2020 posed significant challenges due to the COVID-Pandemic resulting in virtual interviews and remote induction of a number of new staff.

The EPA has an approved staff complement of 420 at the end of the year with 168 staff based in Headquarters, Wexford and 125 based in the Regional Inspectorate, Dublin and the remainder located in four other Regional Inspectorates and two Hydrometric Offices throughout the country.

EPA staff at Agency Day, 2019.

Student Placements

The EPA continued to engage with a wide range of third-level educational institutions under an internship programme so that students have an opportunity to work in the EPA and gain experience and expertise. Nine paid internships were completed during 2020.

Skills and capabilities

In line with the HRD Strategy, the EPA offers an extensive range of training supports to all staff to improve the depth of skills and knowledge across the organisation and to support the delivery of the EPA's mandate and strategic goals. This commitment is reflected in an expenditure for learning and development that represents approximately three percent of payroll spend. The EPA sees attendance at events including training courses, workshops, conferences and seminars as a significant forum for informal learning. During 2020 the EPA transformed how it provided training and many courses were amended for online delivery. Although less external events were available to staff a total of 1870 training days were attended – an average of approx. 4.5 days per person.

Strong leadership

The Senior Management Network (SMN) comprising of all Directors and Programme Managers, has been in place since 2014 and meets at least six times each year. The SMN provides an oversight role in relation to the delivery of the EPA Strategic Goals and leads by example by actively demonstrating how it lives the EPA's cultural characteristics of "Collaborative", "Supportive" and "With Purpose" in all its actions and interactions with staff. During 2020 the SMN considered topics such as how the EPA builds and communicates evidence and knowledge, the role of leadership during times of change and the development of the next corporate strategy.

The Management and Leadership Network (MLN) comprising middle managers annual conference focused on 'Positive Leadership' with managers sharing practices and examples of positive leadership within the EPA.

Partnership

The EPA's Partnership Committee, Meitheal, has been in place since 1999. During 2020, Meitheal continued to play a role in staff consultation in relation to the implementation of the EPA Strategic Plan, the HRD Strategy and the development and promotion of the Green Team initiatives. Meitheal continued to support EPA involvement in Junior Achievement Ireland and other outreach initiatives and led on EPA's participation in Workplace Wellbeing Day.

Workplace wellbeing at the EPA

The EPA commenced the year with receiving the IBEC KeepWell Mark award, which provides the EPA with a benchmark as to the supports in place for employee. Throughout 2020, staff wellbeing was to the forefront and to support employees, several initiatives were implemented. These included the hosting a series of webinars in partnership with our Employee Assistance Service provider - Spectrum.Life; promoting Spectrum's online services and weekly recordings of live stream events and linking in with the Sports & Social clubs to run events. The wellbeing programmes were closely aligned to the work of the Pandemic Response Team to ensure a consistent message.

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.

Pandemic Response Team

As EPA provides essential services, our work continued throughout 2020. While the majority of staff worked from home, we did undertake essential fieldwork and site inspections. To co-ordinate the EPA's response to COVID-19 a Pandemic Response Team (PRT) was established and met regularly throughout 2020. This Team 's three key objectives were:

- To protect the safety, health and welfare of EPA employees and contractors, their families and our business relationships,
- To communicate to staff their specific roles and responsibilities prior to and during a pandemic including managing communication with our parent department, the media and stakeholders, and
- To maintain business operations to the greatest extent possible during and after a pandemic.

In line with public health advice, the PRT led the development of a series of protocols that were updated following any changes in public health advice.

Protocols for Covid-19

- Attendance at Buildings Protocol Approval
- Building Circulation Protocol
- Canteens & Kitchenettes Protocol
- Couriers and Post Protocol
- Contact Logging Protocol
- Covid-19 Training and Induction Videos
- Covid 19 Representatives
- First Aid Responder Protocol
- Driving for Work Protocol
- Maintenance and Service Engineers Protocol
- Guidance for Staff Undertaking Site Visits
- Meeting Rooms and Meetings Protocol
- Managing Numbers in Buildings Protocol
- Reception Protocol
- Operational Control Procedure 28 - COVID19

5.4 INFORMATION AND COMMUNICATIONS TECHNOLOGY

The EPA's corporate strategy sets out the ambition to enhance capacity and use of Information and Communications Technology (ICT) to support reform and innovation. A Board subcommittee oversees the governance and strategic direction of ICT-enabled change. The key priorities for ICT investment are in such areas as information provision, data management, online and shared services, leading-edge technologies and building internal ICT capabilities.

Information security

Information is a key asset of the EPA. The protection of the EPA's information, technologies and applications is critical to performing EPA functions effectively. Information security practices in the EPA 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 EPA assets, and to meet the growing demands in the information security space. These are periodically reviewed.

In 2020, an internal audit of EPA's ICT Information Security was carried out against the rigorous international standard ISO 27001. Most of the audit findings were already attended to in 2020, and the remaining items will be addressed before the end of 2021.

Information security training moved online in 2020 which has allowed it to continue in the changed working environment in which we are operating. The information security policies were reviewed by the Information Security Officer and user-friendly videos prepared on the key policies as part of the EPA's awareness programme.

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 was completed in 2020 to replace outdated communication technologies used by EPA staff and contractors. Several older systems, used for phone calls, video-conferencing and instant messaging were replaced with better, less expensive, faster and more integrated communications systems. Better video-conferencing tools now allow EPA teams to work together more effectively and reduce travel between offices. The success of these initiatives was evident during 2020, when our new tools were enabled and ready to facilitate an almost seamless transition to home working by our staff and contractors, as necessitated by the Covid-19 disruptions.

To meet business needs for improved tools to carry out EPA environmental and managerial roles, new and more powerful ICT tools and systems are required. New ICT products and applications are provided to EPA teams where the need identified aligns with the EPA Corporate Strategy, where a clear business case exists and where available budget allows.

5.5 ENVIRONMENTAL MANAGEMENT SYSTEM

Since the Environmental Protection Agency's (EPA) establishment in 1992 we have been committed to protecting and improving the environment as a valuable asset for the people of Ireland through environmental regulation, enforcement, monitoring, assessment and reporting. In keeping with our commitment to lead by example, we have implemented and maintained an Environmental Management System (EMS), certified to the international standard ISO14001:2015, since 2010. The EPA are committed to leading by example and incorporate good environmental management and practice into our everyday activities.

Energy overview

The EPA has achieved significant success in relation to the requirements set out in the National Energy Efficiency Action Plan by reducing our energy demand by over 50% since 2006. We have had considerable success with the achievement of the Government's 2020 energy efficiency target of 33%, ahead of the deadline. Monitoring of energy consumption across all sites has been critical in achieving our success to date. During this period, the EPA has improved the energy efficiency of its buildings by investing in renewable heating solutions (biomass and electric heat pumps) and efficient building systems such as LED lighting and self-generation of electricity using Solar PV. The EPA also improved the transport fleet by the transition to hybrid and fully electric vehicles with EV charging points installed at all EPA office locations.

The EPA use a variety of energy sources to power and heat its buildings. Sources include biomass, natural gas, thermal solar, Photovoltaic (PV), Bio-petroleum gas (Bio-LPG), kerosene and electricity (air-to-water heat pumps). Electricity is now purchased from 100% renewable sources. Diesel is used to power standby generators. Ireland's Climate Action Plan includes ambitious reductions and changes in energy use by way of a decarbonisation pathway and as such the EPA is well placed to continue its energy and carbon reduction with further building improvements planned for lighting upgrades with energy efficient LED, expansion of Solar PV and a continued focus on its carbon emissions.

Energy usage

Most of the energy demand of the EPA is for space heating, lighting, power, hot water and transport. In 2020, the EPA's total energy consumption (Figure 11) amounted to 2622 megawatt hours (MWh) showing an overall decrease of 12.5% during the period 2019 to 2020.

Our largest energy source, electricity has reduced by 2.2% during this period with reductions following building improvements such as LED lighting upgrades. Reduced office occupancy due to Covid-19 in 2020 has also had an impact. Our thermal energy reduced by 19.8%, largely due to reduced occupancy in our buildings. The installation of heat pumps in one of our buildings has led to a reduction in our natural gas usage with a resulting increase in electricity demand. Reduction in our Fleet Transport of 30% is mainly due to reduced activity because of COVID-19 restrictions during 2020.

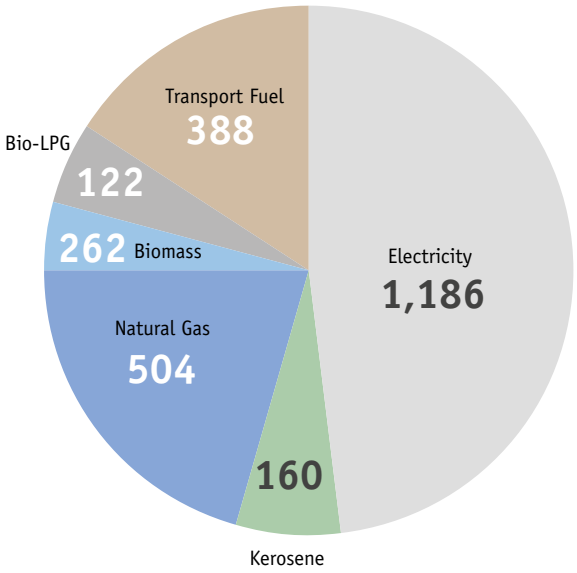


Figure 16. EPA energy usage (MW h) 2020

5.6 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 are 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 2020, 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 2020, 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.

The EPA's Risk Management Policy was approved by the Board in 2018.

An Executive Risk Committee (ERC) (chaired by the Chief Risk Officer) is in place and is made up of two Directors and three 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 2020. The ARC meets on a regular basis and met five times in 2020. Risk is a standing item at the ARC meetings.

The Corporate Risk Register identifies the key risks facing the EPA and details the controls and actions needed to mitigate risks while responsibility for the operation of such controls is assigned to specific staff. 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.

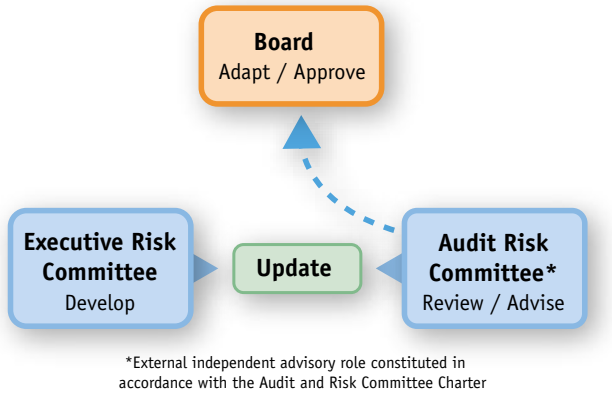


Figure 17. Relationship between the Executive Risk Committee, the Audit and Risk Committee and the EPA Board

The EPA carried out an assessment of the EPA's risks using the processes outlined in its Risk Management Policy. The EPA's principal risks are summarised in the table which follows:

Table 10. Summary of Risks

No.	Risk	Controls
1	Inability to carry out EPA functions and activities due to interruptions such as adverse weather events, major incident at an EPA building, disease outbreaks/ pandemics (COVID-19), natural disaster, etc. The key risk identified in 2020 continues to be our response to the Covid-19 pandemic	An EPA Pandemic Response Team (PRT) was established in March 2020 by the Director General to co-ordinate the Agency's response to COVID-19. Public health advice and safety measures resulted in remote and virtual working for most EPA staff. Proactive safety reviews were undertaken in areas of potential risk with follow-up actions identified. Protocols were developed to protect the safety, health and welfare of EPA staff, contractors, Licensees, customers and stakeholders while also seeking to limit the disruption to the EPA's work.
2	Failure of Information and communication technology security controls against cyber-attacks and loss of functionality.	The EPA continues to liaise with the National Cyber Security Centre in the Department of the Environment, Climate and Communications (DECC) on matters relating to cyber security. The Agency undertook an ICT Information Security Review in 2020 and have implemented the recommendations. In addition, the Agency implements the Information & Communication Technology (ICT) Security Policy and Procedures and maintains ongoing investment in training and updating security defences.

Internal audit

During 2020, 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 2020.

The following audits were completed in 2020:

- Review of Information Security of EPA Business including Cyber Security
- Review of Tax Compliance in the EPA
- Review of Financial Provision and Environmental Liabilities
- Review of Internal Financial Controls 2020.

Strategic Plan

The EPA's five-year Strategic Plan, launched in 2016, concluded at the end of the year. The Plan provided a clear direction and focus for many of the significant achievements by the EPA over its lifetime, as reported in this and previous annual reports. At the core of the Plan were five Strategic Goals, underpinned by actions in annual work programmes to ensure the EPA continued to be: -

- A Trusted Environmental Regulator
- A Leader in Environmental Evidence & Knowledge
- An effective Advocate and Partner
- Able to Respond to Key Environmental
- Organisationally Excellent

A mid-term review of the plan was undertaken in 2018, which considered changes to the EPA's external environment as well as achievements since the plan was first published. New priorities were identified, resulting in the inclusion of new actions in the areas of regulatory Circular Economy and the National Dialogue on Climate Action. Progress on the strategic actions received continuous focus during the year, with regular updates on various actions presented to the EPA's senior management network.

In July, work began on the development of the next Strategic Plan, and while some early progress was made in relation to identifying some of the internal and external priorities for the EPA for the next five years, Covid-19 resulted in significant delays to the project. It is expected that this work will recommence in 2021 and a new five-year plan published in the latter half of the year.

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 2020, the EPA received 60 FOI requests and a further three were carried over from 2019. Under the AIE Regulations, the EPA received 53 requests and 5 were carried over from 2019. Figure 18 illustrates the Decisions issued on the requests processed during 2020. Where requests were refused, the information refused was either personal, was confidential, did not exist, or the requests were voluminous or manifestly unreasonable.

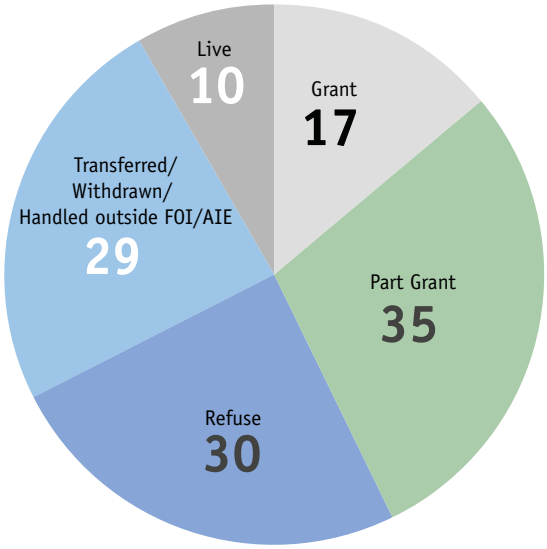


Figure 18. FOI & AIE Decisions January to December 2020

Protected disclosures

Section 22 of the Protected Disclosures Act 2014 requires the publication of an annual report 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, for 2020.

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 one disclosure from parties external to the EPA during the year.

6. APPENDICES

6.1 PROMPT PAYMENT OF ACCOUNTS ACT, 1997

The Environmental Protection Agency comes under the remit of the Prompt Payment of Accounts Act, 1997, which came into effect on 2nd January 1998, and the European Communities (Late Payment in Commercial Transactions) Regulations 2002 which came into effect on 7th August 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. Purchase invoices are logged on a daily basis in Finance Section and are followed up systematically to ensure that they are certified for payment without delay.

Payments are issued as required to ensure prompt payment. 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 values in excess of €317 during 2020.

Laura Burke
Director General, EPA

30 June 2021

6.2 CONSULTANTS AND ADVISERS ENGAGED

Acustica Ltd	Geosyntec Consultants Ltd
Aether Ltd.	Greenville Procurement Partners Ltd
Ash Glebe Informatics Ltd	HKS Environment
Awn Consulting Ltd	Institute of Public Administration
Bureau Veritas (Euro) Ltd	Integrated Risk Solutions
ByrneWallace	LCMS
Camp Dresser & McKee (Ireland) Ltd	Levett-Therivel
Carr Communications Ltd	Mason, Hayes & Curran
Centre for Ecology and Hydrology, UK	Mazars
CERC (GBP)	Michelle Halloran
Certification Europe Ltd.	Patrick Tracey SC
Cerena Consulting Limited	Remy Farrell S.C
Clean Technology Centre	Ricardo-AEA
Conscia (A brand of Connexus Recruit)	RPS Group
Dr Robbie Meehan	Scott Crawley Ltd
Enviroguide Consulting	Smith and Williamson
Fieldfisher Ireland	SureLeaf Systems
Fintan Valentine	SWECO UK
Gartner Ireland Ltd.	Think HR
Gavin and Doherty Geosolutions Ltd	Yale University
	Wrap

EPA PUBLICATIONS 2020

EPA publications are available to download from the EPA website at: www.epa.ie/publications/

Air

The following air reports can be found on the EPA website at: www.epa.ie/publications/research/air/

- *Air Quality in Ireland 2019*
- *Provisional estimates of Ireland's GHG emissions 1990 - 2019*
- *Ireland's Greenhouse Gas Emissions Projections 2019-2040*
- *Ireland's Air Pollutant emissions 1990-2030*
- *Ireland's Final Greenhouse Gas emissions 1990-2018*
- *Carbon Dioxide EPA Emission Factors 2020*
- *Ireland's National Inventory Submissions 2020*
- *Ireland's CLRTAP / NECD Submissions 2020*
- *Urban Environmental Indicators: Nitrogen dioxide levels in Dublin*
- *Technical Report 1: Nitrogen Dioxide Diffusion Tube Assessment Dublin*
- *Technical Report 2: Modelling Assessment of Air Quality in Dublin*

Corporate

The following corporate reports can be found on the EPA website at: https://www.epa.ie/publications/corporate/

- *EPA Evidence Framework*
- *EPA Annual Report & Accounts 2019*
- *Tuarascáil Bhliantúil agus Cuntais 2019*
- *Ireland in the Pandemic: Environmental Observations*
- *Assessment of EPA's Environmental Performance 2018*
- *EPA Year in Review – Highlights from 2019*
- *Infographic on attitudes to environmental issues*

Radiation

The following radiation reports can be found on the EPA website at: www.epa.ie/publications/compliance--enforcement/radiation/

- *Electromagnetic Fields, 5G and Health*
- *Code of Practice on the application of the Ionising Radiation Regulations (IRR19) in Veterinary Medicine*

Enforcement

The following enforcement reports can be found on the EPA website at: www.epa.ie/publications/compliance--enforcement/

- *Guidance on the process of preparing and implementing a bog rehabilitation plan*
- *Guidance for Prohibition on Heavy Metals in Vehicles*
- *Licensing and Enforcement Charging Policy 2020*
- *Environmental Protection Agency Investigation into ESB Networks Fluid Filled Underground Electricity Cable Leaks*
- *How to Join NIECE Network*
- *Focus on Local Authority Environmental Enforcement – 2018 Performance Report*
- *2016-2018 Local Authority Environmental Enforcement Performance Indicators*

Waste

The following waste reports can be found on the EPA website at: www.epa.ie/publications/compliance--enforcement/waste/

- *National Waste Statistics Summary Report for 2018*
- *NWPP Annual Report 2019*
- *NWPP Annual Report 2018*
- *Farm Hazardous Waste Collection 2013-2017*

Water

The following water reports can be found on the EPA website at: www.epa.ie/publications/research/water/

- *Water Quality in 2019 – an indicators report*
- *Drinking Water Quality in Public Supplies 2019*
- *Focus on Private Water Supplies 2018*
- *Bathing Water Quality in Ireland 2019*
- *Urban Waste Water Treatment in 2019*
- *Domestic Waste Water Treatment Systems Inspections and Enforcement 2019*
- *Infographic on Water Quality in Ireland 2019*
- *River Monitoring – Fact Sheet*
- *Lake Monitoring – Fact Sheet*
- *Lake monitoring aquatic plants – Fact Sheet*
- *Marine Monitoring – Fact Sheet*
- *Nitrates Directive Article 10 report (submitted to the European Commission)*
- *Annual report on water quality in relation to Ireland's nitrates derogation (submitted to DAFM)*
- *Infographic on Bathing Water Quality in Ireland 2019*
- *Bathing Water Quality Map 2019*
- *River Flow Estimates HydroTool – Read Me*
- *Estimated FDC and Mean Flow for Ungauged Catchments*
- *Register of Hydrometric Stations in Ireland 2020*
- *Hydrology Summary Bulletin - December 2020*
- *Hydrology Summary Bulletin - November 2020*

- *Hydrology Summary Bulletin - October 2020*
- *Hydrology Summary Bulletin - September 2020*
- *Hydrology Summary Bulletin - August 2020*
- *Hydrology Summary Bulletin - July 2020*
- *Hydrology Summary Bulletin - June 2020*
- *Hydrology Summary Bulletin - May 2020*

Guidance documents

The following guidance notes can be found on the EPA website

- *First Schedule to the EPA Act 1992 as amended*
- *Waste Licence Process Flow Diagram*
- *Extractive Industries Registration Guidance*
- *Draft By-Product Guidance*
- *Draft End-of-Waste Guidance Part 1*
- *Draft End-of-Waste Guidance Part 2*
- *Guidance for Planners*
- *Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities*
- *Index of Preferred Methods (IOPM)*
- *Guidance note on EPA requirements for alternative monitoring when continuous emission systems are off-line (AG12)*
- *Guidance Note on monitoring of Stack Gas Emissions from Medium Combustion Plants: Air Guidance No. 11 (AG11)*
- *Guidance Note on EPA requirements for calculation of flue gas volume flow rate from energy consumption using Annex E of ISO EN 16911-1*
- *Guidance Note on Site Safety Requirements for Air Emissions Monitoring (AG1)*
- *Air Dispersion Modelling from Industrial Installations Guidance Note (AG4)*
- *Vehicle Refinishing - What you need to know*
- *Annual Environmental Report (AER) Guidance and Templates*
- *Water Treatment Manuals – Filtration*
- *Remediation and Replacement of Domestic Waste Water Treatment Systems (DWWTS)*
- *Good practice guidance on Cumulative Effects Assessment in SEA*
- *Second Review of SEA Effectiveness in Ireland*
- *Second SEA Effectiveness Review Training Event Summary*
- *Guidance on SEA Statements and Monitoring*
- *EPA Advice Note for Strategic Noise Mapping of Major Roads for the Environmental Noise Regulations 2018 (November 2020) v1*

ENVIRONMENTAL RESEARCH REPORTS

EPA Research publications are available to download from the website at www.epa.ie/publications/research/

Air quality

- Research 357: *Ireland's Atmospheric Composition and Climate Change Network*
- Research 325: *Sourcing and Assessing Agricultural Activity Data for Modelling and National Estimates of Greenhouse Gases and Air Pollutants*
- Research 319: *Remote Sensing of Aerosols, Clouds and Wind at Mace Head Atmospheric Research Station*
- Research 318: *Source Apportionment of Particulate Matter in Urban and Rural Residential Areas of Ireland (SAPPHIRE)*
- Research 317: *MapEIre: National Mapping of Greenhouse Gas and Non-greenhouse Gas Emissions Sources Project.*

Climate change

- Research 309: *Evaluating the suitability of LPIS for assessing land-use and land-use change related greenhouse gas emissions*
- Research 310: *EC-Earth Global Climate Simulations – Ireland's Contributions to CMIP6*
- Research 314: *Deepening public engagement on Climate Change: Lessons from the Citizen's Assembly*
- Research 315: *Activity Data for Emissions of Non-methane Volatile Organic Compounds*
- Research 317: *MapEIre: National Mapping of Greenhouse Gas and Non-greenhouse Gas Emissions Sources Project*
- CRCG: *Climate Research Coordination Group: Second Report on Activities: January – December 2019*
- Research 319: *Remote Sensing of Aerosols, Clouds and Wind at Mace Head Atmospheric Research Station*
- Research 320: *Assessing Vulnerability to Climate Change: An Approach Illustrated through the Large Urban Scale Adaptation (Urb-ADAPT) Project*
- Research 321: *Opportunities to Decarbonise the Irish Transport Sector*
- Research 323: *Critical Loads and Soil-Vegetation Modelling*

- Research 324: *Emission Factors for Domestic Solid-Fuel Appliances (EFDOSOF)*
- Research 325: *Sourcing and Assessing Agricultural Activity Data for Modelling and National Estimates of Greenhouse Gases and Air Pollutants*
- Research 326: *The Role of Energy Technology in Climate Mitigation in Ireland: Irish TIMES Phase 3*
- Research 327: *Developing the Potential of Community Energy Action Groups in the Transition to a Low-carbon Society*
- Research 329: *Encouraging Environmentally Friendly Behaviour with Insights from Behavioural Economics*
- Research 331: *IMPLiClt: IMProving inversion model Capability in Ireland*
- Research 337: *Responding to the Energy Transition in Ireland: The Experience and Capacity of Communities*
- Research 338: *Greening Transport: Final Report*
- Research 339: *High-resolution Climate Projections for Ireland – A Multi-model Ensemble Approach*
- Research 344: *Citizens' Views of Climate Action in Ireland: Insights on Media Use, Trusted Sources and Perceptions*
- Research 346: *National Risk Assessment of Impacts of Climate Change: Bridging the Gap to Adaptation Action*
- Research 349: *Develop a LEAP GHG Ireland Analytical Tool for 2050*
- Research 350: *Towards a Definitive Historical High-resolution Climate Dataset for Ireland – Promoting Climate Research in Ireland*
- Research 352: *Synthesis of Literature and Preliminary Modelling Relevant to Society-wide Scenarios for Effective Climate Change Mitigation in Ireland*
- Research 354: *IE-NETs: Investigating the potential for Negative Emissions Technologies (NETs) in Ireland*
- Research 357: *Ireland's Atmospheric Composition and Climate Change Network*

Biodiversity

- Research 342: *Ecohydrology, Greenhouse Gas Dynamics and Restoration Guidelines for Degraded Raised Bogs*
- Research 335: *Ecosystem Tipping Points: Learning from the Past to Manage for the Future*
- Research 322: *Irish Natural Capital Accounting for Sustainable Environments: Stage 1 Feasibility Report*

Environmental technologies

- Research 310: *EC-Earth Global Climate Simulations: Ireland's Contributions to CMIP6*
- Research 308: *Al Source*
- Research 306: *Second Review of Strategic Environmental Assessment Effectiveness in Ireland*
- Research 306: *Guidance on Strategic Environmental Assessment (SEA) Statements and Monitoring*

Environment and Health

- Research 358: *Research on the Environment, Health, Consumer Behaviour and the Economy: ESRI Environment Research Programme 2018–2020*
- Protecting and developing Ireland's green and blue spaces to benefit our health and wellbeing
- Research 348 Toolkit: *Connecting with Nature for Health and Wellbeing*
- Research 348: *Nature and Environment to Attain and Restore Health (NEAR Health)*
- Research 347: *Assessment of the Impact of Ammonia Emissions from Intensive Agriculture Installations on Special Areas of Conservation and Special Protection Areas*
- Research 345: *Furthering Understanding of Emissions from Landfilled Waste Containing POPBFRs and PFASs (FUEL)*
- Research 343: *Elucidating Levels and Pathways of Human Exposure in Ireland to Brominated Flame Retardants and Perfluoroalkyl Substances*
- Research 332: *An Investigation of the Optimum Specification for Soil Depressurisation Systems (Active and Passive) That Take Account of Irish Building Practices*
- Research 328: *Eco-Health: Ecosystem Benefits of Greenspace for Health*
- Research 318: *Source Apportionment of Particulate Matter in Urban and Rural Residential Areas of Ireland (SAPPHIRE)*

Water

- Research 359: *Modelling Irish Transitional and Coastal Systems to Determine Nutrient Reduction Measures to Achieve Good Status*
- Research 356: *Development of Proof-of-concept Portable Sensors for Detection of Heavy Metals and Organic Pesticides and Investigation of Anti-biofouling Materials*
- Research 353: *Investigation into the Causes, Impacts and Measures to Deal with Algal Blooms in Vartry Reservoir*
- Research 341: *Assessing the Potential of Drones to Take Water Samples and Physico-chemical Data from Open Lakes*

- Research 330: *COSAINT: Cattle Exclusion from Watercourses: Environmental and Socio-economic Implications*
- Research 313: *Saltmarsh Function and Human Impacts in Relation to Ecological Status (SAMFHIRES)*
- Research 312: *Incorporation of Ecosystem Services Values in the Integrated Management of Irish Freshwater Resources: ESManage*

Waste and Resource Management

- Research 340: *Valorisation of Composted Organic Fines and Sewage Sludge Using Pyrolysis (OF-PYR)*
- Research 333: *TriREUSE – Trialing the Preparation for Reuse of Consumer Laptops, Tablets and Smartphones*
- Research 307: *Study on Usage and Waste Management of Amalgam Dental Fillings and Mercury-free Alternatives*

Socio-Economics

- Research 355: *Sensing Our World: How Digital Cultural Practices Can Contribute to Changing Social Norms Around Consumption*
- Research 351: *Identifying "What Matters" for Community Wellbeing with the Irish Public Participation Networks*
- Research 336: *Charting Ireland's Sustainable Future: Innovative Approaches towards Achieving the United Nations Sustainable Development Goals for Enterprises*
- Research 334: *Sustainable Voluntary Communities: Support for Sustainable Environmental, Social and Economic Development*
- Research 316: *Environmental Outcomes from Licence Enforcement Activity*
- Research 311: *Behavioural Change Tools to Promote Going Beyond Compliance in the Regulated Community*

Sustainability

- Research 306: *Second Review of Strategic Environmental Assessment Effectiveness in Ireland*
- Research 307: *Study on Usage and Waste Management of Amalgam Dental Fillings and Mercury Free Alternatives*
- Research 308: *AI Source*
- Research 316: *Environmental Outcomes from Licence Enforcement Activity*
- Research 318: *Source Apportionment of Particulate Matter in Urban and Rural Residential Areas of Ireland (SAPPHIRE)*
- Research 322: *Irish Natural Capital Accounting for Sustainable Environments: Stage 1 Feasibility Report*
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- Research 347: *Assessment of the Impact of Ammonia Emissions from Intensive Agriculture Installations on Special Areas of Conservation and Special Protection Areas*
- Research 348: *Nature and Environment to Attain and Restore Health (NEAR Health)*
- NEAR Health Toolkit: *Nature and Environment to Attain and Restore Health (NEAR Health)*
- Research 351: *Identifying "What Matters" for Community Wellbeing with the Irish Public Participation Networks*
- Research 355: *Sensing Our World: How Digital Cultural Practices Can Contribute to Changing Social Norms Around Consumption*
- Research 358: *Research on the Environment, Health, Consumer Behaviour and the Economy: ESRI Environment Research Programme 2018–2020*

7

Governance Statement and Director's Report

Statement on Internal Control

Report of the Comptroller and Auditor General

Statement of Income and Expenditure and Retained Revenue Reserves

Statement of Comprehensive Income

Statement of Financial Position

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Notes to the Financial Statements

7. FINANCIAL STATEMENTS

7.1 GOVERNANCE STATEMENT AND DIRECTORS' REPORT 2020

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 Directors of the Agency are referred to as 'Executive Board Members', and the Agency's governing body is known as its Executive Board.

The Executive Board fulfils both governance and management roles. Our activities are organised into five Offices, with each Director having operational responsibility for an Office.

The Director General serves as Chair of the Executive 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.

Executive 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 Executive 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 Executive 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 Executive 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 current EPA Strategic Plan 'Our Environment Our Wellbeing' sets out the priority actions that the EPA will take to deliver on our mission of protecting and improving our environment as a valuable asset for the people of Ireland and to protect our people and the environment from the harmful effects of radiation and pollution. It highlights the importance of a clean, protected

environment for our health, our wellbeing and our quality of life. The EPA has identified five strategic goals for its Strategy:

- Trusted Environmental Regulator
- Leader in Environmental Evidence & Knowledge
- Effective Advocate and Partner
- Responding to Key Environmental Challenges
- Organisationally Excellent

Work on the next EPA Strategic Plan commenced in 2020 and the EPA is on track to publish our next Strategic Plan during 2021.

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 Executive Board has a dedicated meeting on governance and management issues which include:

- 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 on the EPA's website is the responsibility of the Director General and Directors.

The Executive 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 Executive Board of progress reports on the EPA's Key Performance Indicators. A year-end evaluation of the 2020 EPA Work Programme Activities was completed and the 2020 year-end Financial Management Report was submitted to the Executive Board in February 2021.

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 Executive 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 2020.

Executive Board Structure

The Executive 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 2020 the EPA Board included a gender balance of 50% female and 50% male.

The Executive Board met for General Board meetings on thirteen occasions in 2020. The table below details the appointment dates for the Board members at 31 December 2020:

Executive Board Member	Role	Date Appointed
Laura Burke	Director General	8 November 2011*
Gerard O'Leary	Deputy Director General	8 May 2012*
Matthew Crowe	Director	11 April 2010*
Micheál Lehane	Director	1 May 2016
Eimear Cotter	Director	1 September 2017
Tom Ryan	Director	25 August 2018
Ciara McMahon	Director	15 September 2020

* second term
Matthew Crowe's term ended in April 2020.

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 Executive 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 and its work on providing assurance around the EPA internal control systems.

There were five meetings of the Audit and Risk Committee (ARC) in 2020. The members of the ARC are appointed for an initial three-year term. The members of the ARC at 31 December 2020 were:

ARC Member	Change to Term During 2020
Tom Barry (Chairperson)	Unchanged
Allan Reid	Unchanged
Caroline Bocquel	Unchanged
Nuala Bannon	Unchanged
John Maher	Unchanged
Eugene Kennedy	Term ended December 2020
Áine Ryall	Appointed October 2020
Ciara McMahon	Term ended as Appointed as Director September 2020
Raymond Smith	Appointed October 2020

During 2020 the term of Committee Member, Dr. Eugene Kennedy ended, Dr Áine Ryall, Co-Director, Centre for Law and Environment, University College Cork was appointed as his replacement in October 2020. The EPA Committee Member, Dr. Ciara McMahon was appointed as a Director within the EPA and subsequently terminated her term as a member of the ARC. Raymond Smith, Senior Scientific Officer, in the EPA was appointed as her replacement in October 2020.

Executive Board Sub Committees

The Executive Board has established two Executive Board Sub Committees.

1. **ICT Board Sub-Committee:** comprises three Executive Board members and is supported by senior Programme Managers, the senior ICT team and a senior Analytics team representative. The Executive Board members of this committee are: Dr Micheál Lehane (Chairperson), Dr Eimear Cotter and Mr Gerard O'Leary. There were 7 meetings of the ICT Board Sub-Committee in 2020.
2. **Safety, Health and Welfare (SHW) Board Sub-Committee:** comprises two Executive Board members at the end of 2020. The members of this committee are: Mr Gerard O'Leary (Chairperson) and Dr. Micheál Lehane. Dr. Matt Crowe was also a member of the Sub-Committee until his retirement in April 2020. There were 8 meetings of the SHW Board Sub-Committee in 2020.

External Advisory /Consultative Committees

The Executive 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**

*there were no meetings in 2020. The EPA was awaiting appointment of members of the EPA Advisory Committee.

**established under Section 41 of the Environmental Protection Agency Act, 1992, as amended.

Schedule of Attendance, Fees and Expenses

There were 13 General Executive Board meetings in 2020. A schedule of attendance at the General Executive Board meetings for 2020 is set out below. 12 of the 13 General Board Meetings were held in EPA headquarters and 1 General Board Meeting was held in EPA Inspectorate, Dublin:

Number of meetings	Board	Fees 2020 €	Expenses 2020 €
Laura Burke	13	0	267
Gerard O'Leary	12	0	0
Matthew Crowe	2*	0	0
Micheál Lehane	12	0	0
Eimear Cotter	13	0	0
Tom Ryan	12	0	0
Ciara McMahon	4**	0	0
Total		**0**	**267**

* term ended in April 2020
** appointed September 2020

A schedule of attendance at the ARC meetings for 2020 is set out below including the fees and expenses received by each member:

Number of meetings	Audit & Risk Committee Attended/ Out of Possible	Fees 2020 €	Expenses 2020 €
Tom Barry (Chairperson)	5/5	4,275	780
Nuala Bannon	5/5	0	102
Caroline Bocquel	5/5	0	0
Eugene Kennedy	5/5	0	310
Ciara McMahon*	4/4	0	0
John Maher	5/5	0	106
Áine Ryall***	0/0	0	0
Raymond Smith***	0/0	0	0
Allan Reid**	5/5	0	506
Total		**4,275**	**1,804**

* EPA Staff member appointed from January 2019
** All expenses paid directly to the Scottish Environment Protection Agency.
*** Appointed October 2020 – first meeting January 2021

COVID-19

The onset of the COVID-19 pandemic in early 2020 significantly changed the way the EPA operated. Public health advice and safety measures resulted in a fundamental and rapid change to the working environment with remote and virtual working becoming the norm for most EPA staff. EPA has monitored developments closely, looking to mitigate the risks that may affect the Agency's employees and stakeholders. The EPA established a Pandemic Response Team to coordinate the Agency's response to COVID-19. A "Contingency Plan for Covid-19 Pandemic" was developed, setting out a number of actions to protect the safety, health and welfare of EPA staff, contractors, customers and stakeholders while also seeking to limit the disruption to the EPA's work. EPA's activities are included in the list of essential services in Schedule 2 of SI No. 121/2020 and the work of EPA has continued during 2020.

The EPA has had regard to the Office of the Comptroller and Auditor General (OCAG) guidance document titled *Covid Insights: The impact of COVID-19 on your control environment*. The EPA coordinated its responses to the questions set out in the guidance document, which has been of particular assistance to the Audit and Risk Committee, in helping them to understand the impact that COVID-19 has had on the EPA and how the EPA maintained effective internal controls.

The inbuilt controls within the EPA's Financial Systems have continued to operate as normal during the COVID-19 pandemic with no procedures or Key Controls being overridden in order to maintain business-as-usual. The EPA's Internal Auditors noted in their review of Internal Financial Controls 2020 that *'Our audit results indicate that significant assurance can be placed on the adequacy and operating effectiveness of controls to mitigate and/or manage financial risks to which the EPA may be exposed. There is a sound system of framework of financial control in place and the controls are being consistently applied to ensure risks are managed effectively which should ensure that objectives are fully achieved.'*

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

The Executive 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.

	2020 €	2019 €
Legal Advice, including Financial Provision of Licensed Activities.	1,040,088	884,228
Pension Scheme Actuarial Valuation	4,797	3,690
HR Consultancies	29,066	38,121
Public Relations/Marketing	76,413	50,824
Internal Audit & Corporate Governance	73,463	72,293
Business Continuity Consultancy	73,200	10,946
Buildings Assessments & Audit Services	14,568	9,139
Procurement Consultancy and Advice	24,295	43,035
VAT Consultancy / Advice	0	2,399
Strategy Development and Implementation	45,802	24,243
Environmental and Radiological Programme Consultancies	93,310	104,336
OECD Review of EPA	0	100,000
Total Consultancy Costs	**1,475,002**	**1,343,254**

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.

	2020 €	2019 €
Legal fees – legal proceedings	282,917	653,874
Conciliation and arbitration payments	0	0
Settlements	0	0
Total	**282,917**	**653,874**

Travel and Subsistence Expenditure

Travel and subsistence expenditure is categorised as follows:

	2020 €	2019 €
Domestic		
- Executive Board	22,792	69,899
- Employees	382,185	1,369,678
International		
- Executive Board	2,301	14,570
- Employees	36,698	322,491
Total *	**443,976**	**1,776,638**

*This does not take account of reimbursement of travel costs of €2,851 (2019 €22,562) received by the EPA.

Hospitality Expenditure

The Income and Expenditure Account includes the following hospitality expenditure:

	2020 €	2019 €
Staff hospitality*	13,547	13,620
Other hospitality	0	206
Total	**13,547**	**13,826**

*Includes Employee Assistance Programme costs of €3,544 in 2020 (2019 €3,605).

Statement of Compliance

The Board has adopted the Code of Practice for the Governance of State Bodies (2016) and during 2017 put procedures in place to ensure compliance with the Code. The EPA was in compliance with the Code of Practice for the Governance of State Bodies for 2020

Signed on behalf of the Executive Board.

Laura Burke
Director General

Date: 24 June 2021

7.2 STATEMENT OF INTERNAL CONTROL 2020

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 2020 and up to the date of approval of the financial statements.

3. Key Control Procedures to Provide Effective Internal Control

a) Capacity to Handle Risk

i) 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.

The EPA has also developed a Risk Management Policy which sets out its 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 are 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. COVID-19 has been identified as a risk in the Corporate Risk Register. 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 Executive 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.

ii) 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.

b) Ongoing Monitoring and Review

i) Annual Review of the Effectiveness of Control

The Executive Board conducted an annual review of the effectiveness of the internal controls for 2020 in February 2021. In undertaking this review the Directors considered the following:

- Details of the system of internal controls in 2020 including Risk Management, Financial Management, Internal Audit, Ethics, Information Systems, Business Planning & Reporting,
- Report on the Review of the Effectiveness of Internal Financial Controls 2020,
- Compliance Officer's Report 2020,

- IT Compliance Report 2020,
- Health, Safety & Welfare Assurance Statement 2020,
- Risk Management Assurance Statements 2020,
- Changes to working practices and control environment of the EPA in 2020 as a direct result of the COVID-19 pandemic.

Annual Assurance Statements in relation to Budgetary Responsibilities 2020 have been signed and presented to the Director General, in line with the provisions of the EPA Finance Manual. The onset of the COVID-19 pandemic in early 2020 significantly changed the way the EPA operated. Public health advice and safety measures resulted in a fundamental and rapid change to the working environment with remote and virtual working becoming the norm for most EPA staff. EPA has monitored developments closely, looking to mitigate the risks that may affect the EPA's employees and stakeholders. The EPA established a Pandemic Response Team to coordinate the EPA's response to COVID-19. A "Contingency Plan for Covid-19 Pandemic" was developed, setting out a number of actions to protect the safety, health and welfare of EPA staff, contractors, customers and stakeholders while also seeking to limit the disruption to the EPA's work. EPA's activities are included in the list of essential services in Schedule 2 of SI No. 121/2020 and the work of EPA has continued during 2020.

The EPA has had regard to the Office of the Comptroller and Auditor General (OCAG) guidance document titled *'Covid Insights: The impact of COVID-19 on your control environment'*. The EPA coordinated its responses to the questions set out in the guidance document, which has been of particular assistance to the Audit and Risk Committee, in helping them to understand the impact that COVID-19 has had on the EPA and how the EPA maintained effective internal controls.

ii) Breaches in Control

There were no reported instances of breaches in control in 2020.

iii) Material Losses or Frauds

There were no reported material losses or frauds in 2020.

iv) Review of Statement of Internal Control

This Statement of Internal Control 2020 was reviewed by the EPA Internal Auditors, EPA Audit & Risk Committee (ARC) and the Directors in February 2021 to ensure that it accurately reflects the control system in place during 2020.

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:

- Developing and publishing the EPA Strategic Plan 2016-2020 – *Our Environment, Our Wellbeing*. This Strategy sets out the EPA's Vision, Mission, Values, Goals and thirteen Strategic Objectives. Implementation of the Strategy is monitored by the Senior Management Network, comprising Directors and Programme Managers, and reported to the Executive Board of the EPA on a periodic basis. The development of the next EPA Strategy commenced in 2020 with a view to its completion during the latter part of 2021.
- Engaging the OECD to conduct a 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 Executive 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(a)(i) Monitoring Effectiveness of System of Internal Control)
- Establishing and operating a Risk Management Policy and Framework, appointing an Executive Risk Committee (ERC) and a Chief Risk Officer. (see Section 3(a)(ii) 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.
- Establishing a Pandemic Response Team to coordinate the EPA's response to COVID-19.

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) 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 Executive Board. The budgeting system also includes the preparation of two formal revised budgets in May and September, both of which are submitted to the Executive 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 Executive 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 the COVID-19 pandemic with no procedures or Key Controls being overridden in order to maintain business-as-usual.

vii) Monitoring effectiveness of 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 Executive 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 2020-2021 was implemented during the year with progress on the implementation of the actions required arising from each audit reviewed periodically and reported to the Audit & Risk Committee and the Executive Board.

The Internal Audit Plan 2021-2022 was developed during 2020 and reflects the risks identified in the EPA's Corporate Risk Register, the requirements of the Comptroller and Auditor General, 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 Executive Board in October 2020.

4. Procurement

I confirm that the EPA has procedures in place to ensure compliance with current procurement rules and guidelines.

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.

In 21 January 2020, the Department of the Environment, Climate and Communications informed the EPA that it could continue to operate the existing pre-funding arrangements under the EPA's Research Programme pending receipt of formal DPER approval for 2020.

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 2020 in February 2021 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 2020 and January 2021 in accordance with the Internal Audit Plan 2020/2021. Results from the Internal Audit indicate that significant assurance can be placed on the adequacy and operating effectiveness of controls to mitigate and/or manage financial risks.

7. Internal Control Issues

No breaches to internal controls were identified in relation to 2020 that require disclosure in the financial statements.

Signed on behalf of the Executive Board.

Laura Burke
Director General

Date: 24 June 2021

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

Opinion on financial statements

I have audited the financial statements of the Environmental Protection Agency for the year ended 31 December 2020 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 2020 and of its income and expenditure for 2020 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 2021

APPENDIX TO THE REPORT

Responsibilities of Directors

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

- the preparation of 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.

Information other than 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 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 purpose intended or where transactions did not conform to the authorities governing them.

I also 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.

7.4 STATEMENT OF INCOME AND EXPENDITURE AND RETAINED REVENUE RESERVES FOR THE YEAR ENDED 31 DECEMBER 2020

		2020	2019
Income	**Note**	**€'000**	**€'000**
Oireachtas Grants – DCCAE	**2(a)**	43,048	38,555
Environment Fund Grants	**2(b)**	2,992	9,205
Oireachtas Grants – DHPLG	**2(c)**	6,808	7,483
Emissions Trading Costs Recovered	**3**	1,727	1,486
Income from Radiological Activities	**4**	824	994
Licensing Activities	**5**	579	870
Enforcement Activities	**6**	9,884	9,701
Sundry Receipts	**7**	342	601
Net Deferred Retirement Benefit Funding	**24(c)**	7,123	8,894
Total Income		**73,327**	**77,789**
Expenditure			
Remuneration	**8**	27,064	25,586
Retirement Benefit Costs	**24(a)**	10,150	11,326
Travelling Expenses	**9**	555	1,903
Laboratory and Field Costs	**10**	1,701	1,512
Accommodation Costs	**11**	1,913	1,915
Administration Costs	**12**	8,541	9,289
Consultants	**13**	364	628
Grants, Contractors and External Service Providers	**14**	9,107	9,320
Environmental Research Programme Payments	**15**	8,660	8,541
Depreciation	**16**	5,902	5,562
Total Expenditure		**73,957**	**75,582**
Surplus / (Deficit) for the Year before Appropriations		**(630)**	**2,207**
Transfer from / (to) the Capital Account	**17**	449	(165)
Surplus on Disposals of Fixed Assets		15	49
Surplus /(Deficit) for the Year after Appropriations		**(166)**	**2,091**
Surplus at 1 January		3,662	1,571
Surplus at 31 December		**3,496**	**3,662**

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

The Statement of Cash Flows and notes 1 to 29 form part of these financial statements.

On behalf of the Board of the Environmental Protection Agency:

Laura Burke
Director General
Date signed: 24 June 2021

Gerard O'Leary
Deputy Director General

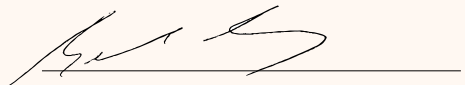
7.5 STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 31 DECEMBER 2020

	Note	2020 €'000	2019 €'000
Surplus / (Deficit) after appropriations		**(166)**	**2,091**
Experience gains / (losses) on retirement benefit obligations	**24(d)**	3,606	7,264
Changes in assumptions underlying the present value of retirement benefit obligations		(23,428)	(30,277)
Actuarial (Loss) / Gain in the year		**(19,822)**	**(23,013)**
Adjustment to deferred retirement benefits funding		**19,822**	**23,013**
Other Comprehensive Income for the year		**(166)**	**2,091**

The Statement of Cash Flows and notes 1 to 29 form part of these financial statements.

On behalf of the Board of the Environmental Protection Agency:

Laura Burke
Director General
Date signed: 24 June 2021



Gerard O'Leary
Deputy Director General

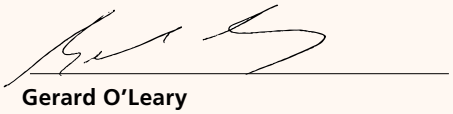
7.6 STATEMENT OF FINANCIAL POSITION AS AT 31 DECEMBER 2020

	Note	2020 €'000	2019 €'000
Fixed Assets - Property, Plant & Equipment	**19**	**38,027**	**38,476**
Current Assets			
Receivables	**20**	3,225	3,168
Cash and cash equivalents	**21**	9,445	8,887
		12,670	**12,055**
Current Liabilities (amounts falling due within one year)			
Payables	**22**	(9,180)	(8,399)
Net Current Assets		**3,490**	**3,656**
Total Assets less Current Liabilities before Retirement Benefits		**41,517**	**42,132**
Retirement Benefits			
Retirement benefit obligations	**24(b)**	**(306,587)**	**(279,642)**
Deferred retirement benefit funding asset	**24(c)**	**306,587**	**279,642**
		0	**0**
Total Net Assets		**41,517**	**42,132**
Representing			
Capital account	**17**	**38,021**	**38,470**
Retained revenue reserves		**3,496**	**3,662**
		41,517	**42,132**

The Statement of Cash Flows and notes 1 to 29 form part of these financial statements.

On behalf of the Board of the Environmental Protection Agency:

Laura Burke
Director General
Date signed: 24 June 2021



Gerard O'Leary
Deputy Director General

7.7 STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 31 DECEMBER 2020

	2020	2019
	€'000	€'000
Net Cash Flows from Operating Activities		
Surplus / (Deficit) of Income over Expenditure	(166)	2,091
Depreciation and Impairment of Fixed Assets	5,902	5,562
(Increase) in Receivables	(57)	(756)
Increase in Payables	804	110
Interest Paid	41	32
(Surplus) on Disposal of Fixed Assets	(15)	(49)
Transfer to Capital Account	(449)	165
Net Cash Inflow from Operating Activities	**6,060**	**7,155**
Cash Flows from Investing Activities		
Payments to acquire Property, Plant & Equipment	(5,453)	(5,728)
Proceeds on disposal of fixed assets	15	50
Net Cash Flows from Investing Activities	**(5,438)**	**(5,678)**
Cash Flows from Financing Activities		
Bank Interest Paid	(41)	(32)
Fixed Asset Loan written off	(23)	0
Net Cash Flows from Financing Activities	**(64)**	**(32)**
Net Increase / (Decrease) in Cash and Cash Equivalents	**558**	**1,445**
Cash and Cash equivalents at 1 January	8,887	7,442
Cash and Cash Equivalents at 31 December	**9,445**	**8,887**

7.8 NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2020

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 2020 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 are required to pay the full licence 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 on completion of the following stages of the licensing 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%

Radiological Protection Licence fees are recognised as income in line with the duration of the licence. Fees received in advance are shown as income in advance.

Other Revenue

Other revenue is recognised on an accrual's 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 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) Loans

Loans are recognised initially at the transaction price (present value of cash payable, including transaction costs). Loans are subsequently stated at amortised cost. Interest expense is recognised on the basis of the effective interest method and is included in finance costs.

Loans are classified as current liabilities unless there is a right to defer settlement of the loan for at least 12 months from the reporting date.

o) 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			2020 €'000	2019 €'000
Grants from the Department of Environment, Climate and Communications:				
(a) Oireachtas Grant – Grants from the Department's Vote:				
	Current	Subhead – F3	28,441	23,966
	Capital	Subhead – F3	13,910	13,873
	Other Programmes	Subhead – F3	697	716
	Total DECC Oireachtas Grants		**43,048**	**38,555**

The Current grant shown is net of single scheme employee contributions of €264K (2019: €207K) remitted to DPER.

(b) Environment Fund Grants				
	Non-Pay		0	1,412
	Research		0	3,588
	Other Programmes		2,992	4,205
	Total Environment Fund Grants		**2,992**	**9,205**
Grants from the Department of Housing, Local Government and Heritage:				
(c) Oireachtas Grant – Grants from the Department's Vote:				
	Current	Subhead – B3	5,871	6,452
	Capital	Subhead – B3	937	1,031
	Total DHLGH Oireachtas Grants		**6,808**	**7,483**
Total State Grants			**52,848**	**55,243**

Research Funding of €7.999M (2019 €10.437M) provided by the Department of the Environment, Climate and Communications are specific allocations to meet the cost of environmental research. €11.134M was expended on these research activities in 2020 (2019 €10.916M). See Note 15.

3 Emissions Trading Unit (ETU) Activities	2020 €'000	2019 €'000
Costs of Emissions Trading Unit recovered from Auction Funds, etc.	1,727	1,486
Total Funding of ETU Costs	**1,727**	**1,486**

4 Income from Radiological Activities	2020 €'000	2019 €'000
Calibration Service	20	29
Radiation Monitoring Service	269	314
Licence Fees	535	651
Total Income from Radiological Services	**824**	**994**

5 Licensing Activities - IED & IPC, Waste and WWD	2020 €'000	2019 €'000
Licence Fees prepaid at 1 January	1,427	1,351
Fees Received	570	976
Less Refunds Paid	(6)	(30)
Licence Fees prepaid at 31 December (see Note 22)	(1,412)	(1,427)
Amount credited to the Statement of Income and Expenditure and Retained Revenue Reserves	**579**	**870**

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 local authority 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	2020 €'000	2019 €'000
Enforcement Charges Invoiced	9,711	9,471
Enforcement Income from Prosecutions	173	230
Total Income from Enforcement Activities	**9,884**	**9,701**

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	2020 2020	2019 2019
Sundry	342	601
	342	**601**

8 Remuneration

(a) Aggregate Employee Benefits	2020 €'000	2019 €'000
Staff short-term benefits	24,807	23,501
Termination benefits	0	0
Employer's contribution to social welfare PRSI	2,323	2,168
Total Salary Costs	**27,130**	**25,669**
IT Development Salary costs capitalised	(66)	(83)
Salary Costs charged to the Statement of Income and Expenditure and Retained Revenue Reserves	**27,064**	**25,586**

The total Salary cost of €27.13M includes an accrual of €980,000 (2019 €736,000) in respect of accumulated staff annual leave entitlements. €264,000 (2019 €207,000) 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 141 (2019: 126). The Pension Related Deduction was replaced by the Additional Superannuation Contribution with effect from 1 January 2019. In 2020, €916,000 of Additional Superannuation Contribution (2019 €997,000) has been deducted from staff and paid to the Department of the Environment, Climate and Communications.

(b) Analysis of staff by location:	2020	2019
Headquarters	168	168
Regional Inspectorate Castlebar	26	27
Regional Inspectorate Cork	56	57
Regional Inspectorate Dublin	125	124
Regional Inspectorate Kilkenny	25	24
Regional Inspectorate Monaghan	14	15
Regional Offices	6	5
	420	**420**

(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:	2020	2019
€60,000 to €70,000	81	81
€70,000 to €80,000	48	45
€80,000 to €90,000	29	31
€90,000 to €100,000	6	4
€100,000 to €110,000	7	6
€110,000 to €120,000	1	0
€130,000 to €140,000	3	4
€140,000 to €150,000	0	1
€150,000 to €160,000	1	0
€160,000 to €170,000	0	1
€170,000 to €180,000	1	0

The total number of staff employed (WTE) at year end was 409.1 (2019: 407.7).

(d) Staff Short-Term Benefits	2020 €'000	2019 €'000
Basic Pay	24,742	23,438
Overtime	0	0
Allowances	65	63
	24,807	**23,501**

(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:

	2020	2019
	€'000	€'000
Salary	804	849
Allowances	11	11
	815	**860**

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

The Director General remuneration package for the financial period was as follows:	2020 €'000	2019 €'000
Salary	**172**	**168**

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	2020 €'000	2019 €'000
Travel and Subsistence	452	1,777
Motor Vehicle Expenses	106	149
Travel Refunds	(3)	(23)
	555	**1,903**

This includes Executive Board travel expenditure of €25,093 (2019 €84,469).

10 Laboratory and Field Costs	2020 €'000	2019 €'000
Laboratory and Field Expenses	992	1,011
Equipment Repairs and Maintenance	655	447
Protective Clothing	54	54
	1,701	**1,512**

11 Accommodation Costs	2020 €'000	2019 €'000
Rent and Rates	758	730
Power, Light and Heat, Cleaning	643	598
Repairs, Maintenance, Security	512	587
	1,913	**1,915**

12 Administration Costs	2020 €'000	2019 €'000
Telephone and Postage	401	372
Printing of Publications and Stationery Supplies	465	365
Insurance	194	177
Computer and Data Processing Charges	3,912	3,934
Audit Fees	29	29
Corporate Governance and Internal Audit Costs	81	91
Legal fees, advice and related costs	1,323	1,486
Meeting, External Committee and Guest Speaker Expenses	151	413
Staff Appointment and other related costs	130	190
Bank Interest and Charges	57	47
Books, Periodicals, and Library	101	65
Staff Development and Training Costs	408	642
Advertising	153	142
Communications	958	1,101
Sundries	178	235
	8,541	**9,289**

13 Consultancy Costs	2020 €'000	2019 €'000
Consultants	364	628
	364	**628**

The EPA Offices which made use of these consultancies were:	€'000	€'000
Office of Communications and Corporate Services	143	175
Office of Environmental Sustainability	58	0
Office of Evidence and Assessment	66	222
Office of Radiation Protection and Environmental Monitoring	39	104
Office of the Director General / Cross Office	58	127
	364	**628**

14 Grants, Contractors and External Service Providers	2020 €'000	2019 €'000
Contractors and External Service Providers	6,585	7,604
Grants	2,522	1,716
	9,107	**9,320**

The EPA Offices which incurred costs under this heading were:	2020 €'000	2019 €'000
Office of Communications and Corporate Services	642	671
Office of Environmental Sustainability	2,451	2,684
Office of Evidence and Assessment	4,169	4,478
Office of Environmental Enforcement	762	861
Office of Radiation Protection and Environmental Monitoring	1,083	626
	9,107	**9,320**

15 Environmental Research	2020 €'000	2019 €'000
EPA Research Programme Grant Payments	9,361	9,272
EPA Research Programme Grant Refunds	(87)	(69)
Co-Funding Research Income	(614)	(662)
Research Programme Payments	**8,660**	**8,541**

The current EPA environmental research programme was launched in 2014. It is being funded through a combination of Exchequer, Environment Fund and other Co-Funding sources. The research programme aims to fund research that will address key environmental management issues, which will ultimately protect and improve the natural environment.

Research Co - Funding	2020	2019
In addition to the funding provided by DECC, the following research co-funding was received:	€'000	€'000
Department of Agriculture Food and the Marine	185	122
Met Eireann / Department of Housing, Local Government and Heritage	103	15
Agence Nationale de la Recherche	90	0
The Marine Institute	50	58
Department of Transport	50	50
Health Service Executive	43	43
Gas Networks Ireland	39	0
Geological Survey of Ireland	26	0
REPAK	20	20
DWTI-SIST Research	7	0
WEEE Ireland	0	83
National Parks and Wildlife Service	0	61
Sustainable Energy Authority of Ireland	0	44
WW2015	0	38
AXIS	0	33
The Office of Public Works	0	15
Sundry / Other	1	80
Total Co - Funding	**614**	**662**

In 2020 EPA Research Programme expenditure was €10.790M including Grant Payments of €9.361M as shown above and implementation and activity costs of €1,430K which are reported under the Travel, Lab and Field, Administration and Contractors cost headings.

In 2019 EPA Research Programme expenditure was €10.916M including Grant Payments of €9.272M as shown above and implementation and activity costs of €1,644K, which are reported under the Travel, Lab and Field, Administration and Contractors cost headings.

A further €343K of grant payments (2019 €274K) to research projects is included in the Grants figure at Note 14.

At 31 December 2020 commitments entered into but not yet charged to the financial statements in respect of Research projects amounted to €24.391M (2019 - €27.551M) with the following breakdown:

	2020 €'000	2019 €'000
Outstanding Grant Commitments at 1 January	27,551	28,187
Grants Approved during the year	8,015	9,887
Grants Decommitted during the year	(1,558)	(1,046)
Grant Payments made in the year	(9,704)	(9,546)
Refunds of Grant payments received in the year	87	69
Outstanding Commitments at 31 December	**24,391**	**27,551**

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

16 Depreciation of Fixed Assets	2020 €'000	2019 €'000
Depreciation of Property, Plant and Equipment (Note 19)	5,902	5,562
	5,902	**5,562**

17 Capital Account		€'000	€'000
At 1 January 2020			**38,470**
Transfer from Income and Expenditure Account :			
Income Allocated for Capital purposes	- Fixed Asset Additions	5,453	
Less:			
Disposals		(1,035)	
Less prior depreciation on disposals		1,035	
		0	
Depreciation charge for year		(5,902)	
Net Transfer from Income and Expenditure Account			(449)
At 31 December 2020			**38,021**

At 31 December 2020 the Capital Account balance includes €15,662 (2019 - €15,662) 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

	Total	Buildings	Furniture & Fittings	IT & IS Equipment	Lab & Field Equipment	Motor Vehicles
Cost	€'000	€'000	€'000	€'000	€'000	€'000
At 1 January 2020	87,447	43,404	5,181	25,639	11,921	1,302
Additions	5,453	168	1,050	2,951	1,225	59
Disposals	(1,035)	0	0	(513)	(396)	(126)
At 31 December 2020	**91,865**	**43,572**	**6,231**	**28,077**	**12,750**	**1,235**
Depreciation						
At 1 January 2020	48,971	14,383	3,706	21,009	8,840	1,033
Charge for Year	5,902	840	702	3,190	1,047	123
On Disposals	(1,035)	0	0	(513)	(396)	(126)
At 31 December 2020	**53,838**	**15,223**	**4,408**	**23,686**	**9,491**	**1,030**
Net Book Value						
At 31 December 2020	**38,027**	**28,349**	**1,823**	**4,391**	**3,259**	**205**
At 31 December 2019	**38,476**	**29,021**	**1,475**	**4,630**	**3,081**	**269**

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

In 2020 the EPA capitalised €2.29M (2019 - €2.229M) in respect of the external cost and €66K (2019 – 83K) 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	2020 €'000	2019 €'000
Debtors	1,982	1,888
Prepayments	1,227	1,264
Prepayments for Fixed Assets	16	16
	3,225	**3,168**

21 Cash and cash equivalents	2020 €'000	2019 €'000
Cash and Bank Balances	**9,445**	**8,887**

22 Payables	2020	2019
Amounts falling due within one year:	**€'000**	**€'000**
Licence Fees Prepaid	1,412	1,427
Radiological Protection Licence Fees Prepaid	0	3
Other Deferred Income	615	109
Trade and Other Expenses	7,153	6,837
Amounts due to OPW in relation to loan repayments (Note 23).	0	23
	9,180	**8,399**
Included in Trade and Other Expense above are the following amounts due to the Revenue Commissioners:		
Professional Service Withholding Tax	388	317
PAYE/PRSI/USC	764	705
VAT	349	320
Relevant Contract Tax	0	16
	1,501	**1,358**

23 Borrowings

The EPA headquarters building in Wexford was constructed by the Office of Public Works (OPW) who financed the construction by means of a 20-year commercial loan. The EPA funds the annual repayments made by the OPW. Both the asset and the associated borrowings are recorded in the books of the EPA to reflect the substance of the underlying transactions. The loan has been fully discharged by the payments made by the EPA to OPW.

	2020 €'000	2019 €'000
Repayable within one year	0	23

24 Retirement Benefit Costs

(a) Analysis of total retirement benefit costs charged to the Statement of Income and Expenditure and Retained Revenue Reserves	2020 €'000	2019 €'000
Current Service Cost	8,237	7,867
Interest on retirement benefit scheme liabilities	3,191	4,670
Employee Contributions	(1,278)	(1,211)
	10,150	**11,326**

(b) Movement in net retirement benefit obligations during the financial year	2020 €'000	2019 €'000
Net retirement benefit obligation at 1 January	279,642	247,735
Current service costs	8,237	7,867
Interest costs	3,191	4,670
Actuarial (gain) / loss	19,822	23,013
Pensions paid in the year	(4,305)	(3,643)
Net retirement benefit obligation at 31 December	**306,587**	**279,642**

(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:

	2020 €'000	2019 €'000
Funding recoverable in respect of current year retirement benefit costs	11,428	12,537
Resources applied to pay retirement benefits	(4,305)	(3,643)
	7,123	**8,894**

The deferred funding asset for retirement benefits at 31 December 2020 amounted to €306.6M (2019 €279.6M).

(d) History of defined benefit obligations

	2020 € M	2019 € M	2018 € M	2017 € M	2016 € M
Defined benefit obligations	307	280	248	247	231
Experience gains / (losses) on defined benefit scheme liabilities:					
Amount (€ M)	3.606	7.264	(0.688)	(6.240)	(3.092)
Percentage of Scheme Liabilities	1.2%	2.6%	(0.3%)	(2.5%)	(1.3%)

The cumulative actuarial loss recognised in the Statement of Total Recognised Gains and Losses amounts to €138.8M (2019 €119M).

(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 1 March 2020 by a qualified independent actuary, taking account of the requirements of the FRS in order to assess the scheme liabilities at 31 December 2020.

The principal actuarial assumptions were as follows:	2020	2019
Future salary increases	2.45%	2.45%
Future retirement benefit increases	1.95%	1.95%
Future state pension increases	1.45%	1.45%
Discount rate	0.80%	1.15%
Future inflation	1.45%	1.45%
Revaluation in deferment	1.95%	1.95%

Mortality

Mortality Pre Retirement - Male: 62% of PNML00, Female 70% of PNFL00.

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 2020 and 2040.

Year of attaining age 65	**2020**	**2040**
Life expectancy - male	**86.7**	**89.0**
Life expectancy - female	**89.1**	**91.1**

25 Lease Commitments

At 31 December 2020 the Environmental Protection Agency had the following future minimum lease payments under non-cancellable operating leases for each of the following periods:

	2020	2019
	€'000	€'000
Payable within one year	**719**	**722**
Payable within two to five years	**2,338**	**2,293**
Payable after five years	**2,489**	**2,978**

Operating lease payments recognised as an expense were €723K, (2019 €722K).

26 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 €840K (2019 €944K).

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:	**2020**	**2019**
Purchase of Goods and Services:	**€'000**	**€'000**
Other Related Parties	46	38
	46	**38**

Payable to related parties:	**€'000**	**€'000**
Other Related Parties	0	5
	0	**5**

The 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.

27 Events after the reporting date

The onset of the COVID-19 pandemic in early 2020 significantly changed the way the EPA operated. Public health advice and safety measures resulted in a fundamental and rapid change to the working environment with remote and virtual working becoming the norm for most EPA staff. EPA has monitored developments closely, looking to mitigate the risks that may affect the Agency's employees and stakeholders. The EPA established a Pandemic Response Team to coordinate the Agency's response to COVID-19. A "Contingency plan for Covid-19 Pandemic" has been developed, setting out a number of actions to protect the safety, health and welfare of EPA staff, contractors, customers and stakeholders while also seeking to limit the disruption to the EPAs work. EPA's activities are included in the list of essential services in Schedule 2 of SI No. 121/2020 and the work of EPA has continued during 2020. The Agency does not believe that COVID-19 is impacting on its ability to continue to operate as a going concern.

28 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.

29 Approval of Financial Statements

The Financial Statements were approved by the Board of Directors on 22 June 2021.

AN GHNÍOMHAIREACHT UM CHAOMHNÚ COMHSHAOIL

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

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

Rialáil: *Rialáil agus córais chomhlíonta comhshaoil éifeachtacha a chur i bhfeidhm, chun dea-thorthaí comhshaoil a bhaint amach agus díriú orthu siúd nach mbíonn ag cloí leo.*

Eolas: *Sonraí, eolas agus measúnú ardchaighdeáin, spriocdhírithe agus tráthúil a chur ar fáil i leith an chomhshaoil chun bonn eolais a chur faoin gcinnteoireacht.*

Abhcóideacht: *Ag obair le daoine eile ar son timpeallachta glaine, táirgiúla agus dea-chosanta agus ar son cleachtas inbhuanaithe i dtaobh an chomhshaoil.*

I measc ár gcuid freagrachtaí tá:

Ceadúnú

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

Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil

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

Bainistíocht Dramhaíola agus Ceimiceáin sa Chomhshaol

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

Bainistíocht Uisce

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

Eolaíocht Aeráide & Athrú Aeráide

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

Monatóireacht & Measúnú ar an gComhshaol

- Córais náisiúnta um monatóireacht an chomhshaoil a cheapadh agus a chur i bhfeidhm: teicneolaíocht, bainistíocht sonraí, anailís agus réamhaisnéisiú;
- Tuairiscí ar Staid Thimpeallacht na hÉireann agus ar Tháscairí a chur ar fáil;
- Monatóireacht a dhéanamh ar chaighdeán an aeir agus Treoir an AE i leith Aeir Ghlain don Eoraip a chur i bhfeidhm chomh maith leis an gCoinbhinsiún ar Aerthruailliú Fadraoin Trasteorann, agus an Treoir i leith na Teorann Náisiúnta Astaíochtaí;
- Maoirseacht a dhéanamh ar chur i bhfeidhm na Treorach i leith Torainn Timpeallachta;
- Measúnú a dhéanamh ar thionchar pleananna agus clár beartaithe ar chomhshaol na hÉireann.
- Taighde agus Forbairt Comhshaoil
- Comhordú a dhéanamh ar ghníomhaíochtaí taighde comhshaoil agus iad a mhaoiniú chun brú a aithint, bonn eolais a chur faoin mbeartas agus réitigh a chur ar fáil;
- Comhoibriú le gníomhaíocht náisiúnta agus AE um thaighde comhshaoil.

Cosaint Raideolaíoch

- Monatóireacht a dhéanamh ar leibhéil radaíochta agus nochtadh an phobail do radaíocht ianúcháin agus do réimsí leictreamaighnéadacha a mheas;
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha;
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta;
- Sainseirbhísí um chosaint ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

Treoir, Ardú Feasachta agus Faisnéis Inrochtana

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

Comhpháirtíocht agus líonrú

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

Bainistíocht agus struchtúr na Gníomhaireachta um Chaomhnú Comhshaoil

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

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

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

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

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