Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Ireland's Air Pollutant Emissions

1990-2030

April 2022

Environmental Protection Agency

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

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

- **Regulation:** We implement effective regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.
- **Knowledge:** We provide high quality, targeted and timely environmental data, information and assessment to inform decision making at all levels.
- **Advocacy:** We work with others to advocate for a clean, productive and well protected environment and for sustainable environmental behaviour.

Our Responsibilities

LICENSING

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

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

NATIONAL ENVIRONMENTAL ENFORCEMENT

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

WATER MANAGEMENT

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

MONITORING, ANALYSING AND REPORTING ON THE ENVIRONMENT

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

REGULATING IRELAND'S GREENHOUSE GAS EMISSIONS

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

ENVIRONMENTAL RESEARCH AND DEVELOPMENT

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

STRATEGIC ENVIRONMENTAL ASSESSMENT

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

RADIOLOGICAL PROTECTION

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

GUIDANCE, ACCESSIBLE INFORMATION AND EDUCATION

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

AWARENESS RAISING AND BEHAVIOURAL CHANGE

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

MANAGEMENT AND STRUCTURE OF THE EPA

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

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

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

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KEY FINDINGS

Assessment of targets	Ireland exceeded its emission reduction commitment for ammonia in 2020, continuing a trend of non-compliance with emission reduction targets.
	Emissions of non-methane volatile organic compounds exceeded the 2020 emission reduction commitment, due to use of better scientific data which was unavailable when the emission reduction commitments were set. As a result, Ireland is adjusting the emissions of non-methane volatile organic compounds to achieve compliance, as allowed under Article 5(1) of the NEC Directive.
	Ireland is compliant with the 2020 emission reduction commitments for nitrogen oxides and fine particulate matter ($PM_{2.5}$). 2020 is the first year for which an emission reduction commitment for particulate matter applies.
	Due mainly to the use of lower sulphur content fuels in electricity generation and transport, emissions of sulphur dioxide are well below the required EU emission reduction commitments and decreasing.
Main drivers	COVID-19 restrictions resulted in a decrease in nitrogen oxide emissions in 2020 due to a reduction in transport activity. Less emissions from newer diesel fuelled vehicles and lower levels of cement production have reduced nitrogen oxide emissions in recent years.
	Increasing non-methane volatile organic compounds, emissions are being driven by a wide range of sources including agriculture, spirit production and paint and solvent use.
	Fine particulate matter ($PM_{2.5}$) emissions increased slightly compared to 2019. This was due to increased emissions from home heating as we spent more time at home due to COVID-19 restrictions. Emissions of $PM_{2.5}$ were still below the 2020 emission reduction commitment, however localised exceedances of air quality standards continue to have a negative impact on air quality and health.
	In addition to the five key air pollutants for which NEC Directive emission reduction commitments apply, this report also highlights the emissions trends for other pollutants such as carbon monoxide, lead, dioxins and Polycyclic Aromatic Hydrocarbons (PAHs). Emissions of most of these pollutants have greatly decreased since 1990 because of measures such as banning leaded fuel, catalytic converters and the move away from solid fuel for residential heating.
Future outlook	Ireland must implement significant mitigation measures to achieve compliance with emission reduction commitments out to 2030 as outlined in the National Air Pollution Control Programme (NAPCP) and Clean Air Strategy.
	For Ireland to comply with emission reduction commitments for nitrogen oxides for 2030 will require full implementation of the measures in the NAPCP, Clean Air Strategy and the Climate Action Plan, including significant electrification of the transport sector.
	No Measures have yet been proposed that will address compliance with the NMVOC emission reduction commitment for 2030. Further research on possible measures is required, particularly to tackle growing sources such as spirit production.
	Full Implementation at farm level of ammonia abatement measures outlined in the AgClimatise plan (in line with the Teagasc Marginal Abatement Cost Curve analysis on ammonia emissions) is required to bring Ireland into compliance with the 2030 emission reduction commitment for ammonia. These measures include Low Emission Slurry Spreading (LESS) and use of inhibited urea fertiliser.
	Fine Particulate matter ($PM_{2.5}$) emissions are projected to remain in compliance with the emission reduction commitments until at least 2030. However, to address air quality issues in towns and villages, a continued transition away from solid fuels for residential heating is required.

1. Introduction

This report provides details of emissions of air pollutants in Ireland in the period 1990 to 2020 and projected emissions of these pollutants for 2030. The information used to compile this report is sourced from many Agencies and Government Departments, as well as from Annual Environmental Reports submitted by industry and waste management activities licensed by the EPA. The EPA has calculated emissions using the methodologies described in EU[1] and UN[2] reporting guidelines, to comply with the annual reporting requirements of the Convention on Long Range Transboundary Air Pollution (CLRTAP), and the National Emissions Reduction Commitments Directive (NEC).

This report focuses on the five key pollutants with emission reduction commitments (ERCs) for which Ireland must comply with under the National Emission Reduction Commitments Directive (Directive (EU) 2016/2284[3]. These pollutants are Sulphur Dioxide (SO_2), Nitrogen Oxides (NO_x), Ammonia (NH_3), Non-Methane Volatile Organic Compounds (NMVOCs) and Fine Particulate Matter ($PM_{2.5}$). $PM_{2.5}$ targets only apply from 2020 onwards, previously no ceiling applied, though it was required that the pollutant be reported. For these pollutants the EPA has produced emissions projections to give an indication of the likelihood of compliance with future emissions emission reduction commitments. A summary of emission trends in air pollutants for which there are no emission reduction commitments under Directive (EU) 2016/2284 is also presented in section 4.

1 https://www.eea.europa.eu/publications/emep-eea-guidebook-2019

2 https://unece.org/DAM/env/documents/2013/air/eb/ece.eb.air.125_E_ODS.pdf

3 Transposed into Irish law via S.I. No. 232/2018.

2. National Emissions Reduction Commitments

The five air pollutants for which emission reduction commitments are set affect the environment and human health in different ways. Sulphur Dioxide, NO_x and NH_3 are primarily associated with acid deposition leading to toxicity of soils and waters[4]. Particularly in the case of Nitrate pollution, the EPA water quality reports highlight many of the same drivers as for ammonia pollution. Ammonia is however also responsible for secondary particulate matter formation and NO_x are precursors to tropospheric (ground level) Ozone formation. Fine Particulate Matter, tropospheric Ozone, NO_x and NMVOCs impact directly on human health, especially in higher concentrations in urban areas. In its 2021 Air Quality in Europe report[5], the EEA estimated that approximately 1,300 premature deaths a year occur in Ireland due to poor Air Quality. The EPA, working with local authorities and other public bodies has established 96 air monitoring stations and monitoring data from these stations is available in real time. The EPA's annual Air Quality in Ireland Report presents the key findings from these stations[6].

The National Emission Reduction Commitments Directive (Directive (EU) 2016/2284) on the reduction of national emissions of certain atmospheric pollutants, harmonises the reporting obligations to the European Union under the Convention on Long Range Transboundary Air Pollution (CLRTAP) and details emission reduction commitments for the above-mentioned air pollutants for 2020 and 2030. A full outline of the reporting obligations and submission deadlines are outlined in Article 8 and Annex I of Directive (EU) 2016/2284[7].

The emission reduction commitment for Ireland for 2020 and 2030 are as follows and are set as a percentage reductions on 2005 emission levels:

	2020	2030
• Sulphur Dioxide (SO_2)	-65%	-85%
• Nitrogen Oxides (NO_x)	-49%	-69%
• Ammonia (NH_3)	-1%	-5%
• Non-Methane Volatile Organic Compounds (NMVOCs)	-25%	-32%
• Particulate Matter < 2.5 µm ($PM_{2.5}$)	-18%	-41%

Additionally, emissions in 2025 should follow a linear reduction trajectory between the levels defined by the emission reduction commitments in 2020 and 2030.

2.1 Compliance with National Emissions Reduction Commitments

Current emission reduction commitments

The current emission reduction commitments to which Ireland must comply under Directive (EU) 2016/2284, are set out in Table 1 below along with the latest emission estimates for 2020. Emission reduction commitments are based on percentage reductions compared to 2005 emission levels. As the reductions are relative to a base year (2005), the absolute value of allowed emissions will continue to vary as emission estimates are revised and updated.

4 https://www.epa.ie/publications/research/air/research-390-nitrogensulfur-critical-loads-assessment-of-the-impacts-of-air-pollution-on-habitats.php

5 Tables 3 and 4 — European Environment Agency (europa.eu)

6 https://www.epa.ie/publications/monitoring--assessment/air/Air-Quality-in-Ireland-2020.pdf

7 Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC

The findings of the EPA's assessment of Ireland's air pollutant emissions for 2020 are set out in Table 1 and show that;

- Ireland complied with the SO_2, NO_x and $PM_{2.5}$ emission reduction commitments for 2020.
- Ireland did not comply with its emission reduction commitments for NH_3 for 2020
- Emissions of NMVOC reduced by only 14.3 per cent compared to the required 25 per cent emission reduction commitment.
- Emissions of NH_3 increased by 3.1 per cent compared to the required 1 per cent emission reduction commitment.

Table 1. Actual emissions and Emission reduction commitments for NEC relevant pollutants for 2020*

	2005	2020
Nitrogen Oxides (NO_x (kt)	134.719	59.302
Emission reduction commitment (%)		-49%
Actual reduction in emissions (%)		-56.0%
Sulphur Dioxide SO_2 (kt)	72.805	10.739
Emission reduction commitment (%)		-65%
Actual reduction in emissions (%)		-85.2%
Non-Methane Volatile Organic Compounds (NMVOC) (kt)	77.560	66.499
Emission reduction commitment (%)		-25%
Actual reduction in emissions (%)		-14.3%*
Ammonia (NH_3) (kt)	119.723	123.406
Emission reduction commitment (%)		-1%
Actual reduction in emissions (%)		+ 3.1%*
Fine Particulate Matter ($PM_{2.5}$) (kt)	18.117	12.087
Emission reduction commitment (%)		-18%
Actual reduction in emissions (%)		-33.3%

* Data in red highlights where emission reduction commitments have not been complied with.

Directive (EU) 2016/2284 has a flexibility mechanism that allows Member States to make an adjustment to their national inventory estimates for compliance purposes. This is allowed where non-compliance with national emission reduction commitments would result from applying improved emission inventory methods, updated in accordance with scientific knowledge. This flexibility applies to the five key pollutants and is available to all member states, ensuring that countries are not penalised for updating estimates with information that could not have been foreseen when the emission reduction commitments were agreed in 2012. Emissions of NO_x and NMVOCs from manure management and agricultural soils are not accounted for the purpose of compliance assessment (Article 4 (3) Directive (EU) 2016/2284).

Ireland is non-compliant with national emission reduction commitments for NMVOCs for 2020 as a result of applying improved emission inventory methods, by using more up-to-date emission factors and recognising new sources of emissions. As a result, and in accordance with Directive 2016/2284, Ireland is allowed to utilise the prescribed flexibility mechanism.

As the non-compliance for NH_3 has not been attributed to improved inventory methods and is as a direct result of increased agricultural activity, the criteria for use of the flexibility mechanism does not apply in this case.

Adjusted total emissions for NMVOC are presented in Table 2. When the adjustment is considered, Ireland is compliant with the emission reduction commitment for NMVOC for 2020. Detailed information relating to the use of the flexibility mechanism is outlined in Ireland's Informative Inventory Report 2022[8].

Table 2. Adjusted emission estimates for NMVOCs*

	2005	2020
NMVOC (kt)	77.560	66.499
2020 ERC (%)		-25%
Actual reduction in emissions (%)		-14.3%*
Adjustment (kt)	-8.531	-20.340
Adjusted NMVOC (kt)	69.029	46.159
Adjusted reduction in emissions (%)		-33.1%

* Data in red highlights where emission reduction commitment has not been complied with

Future emission reduction commitments

Ireland must implement significant mitigation measures to achieve compliance with emission reduction commitments out to 2030 as outlined in the National Air Pollution Control Programme (NAPCP) and Clean Air Strategy. Table 3 sets out the latest estimated values for the reduction commitments in 2030 along with projected emissions under two scenarios, *With Existing Measures* (WEM) and *With Additional Measures* (WAM). The WEM scenario assumes that no future policy actions are taken beyond those already implemented by the end of 2020, the latest inventory year. The WAM scenario provides an alternative scenario which includes additional planned policies and measures beyond 2020, such as the effect of Ireland's 2021 Climate Action Plan which sets out a major programme of policies and measures aimed to help Ireland achieve its decarbonisation goals. It also includes the effect of full implementation of AgClimatise[9] which is the roadmap for the agriculture sector towards climate neutrality and the latest Teagasc Marginal Abatement Cost Curve for NH_3 emissions from the agriculture sector[10]. Furthermore, the government submitted to the EU a National Air Pollution Control Plan[11] in 2021 to meet the 2030 emission reduction commitments as assigned by Directive 2016/2284. Often similar measures exist in both scenarios, for example Low Emission Slurry Spreading or the uptake of Electric Vehicles. For both of these measures the WEM scenario represents a projected uptake of the technology that

8 Informative Inventory Report: Monitoring & Assessment: Climate Change: Air emissions Publications | Environmental Protection Agency (epa.ie)

9 https://www.gov.ie/en/press-release/a8823-publication-of-ag-climatise-national-climate-air-roadmap-for-the-agriculture-sector/

10 https://www.teagasc.ie/news--events/news/2020/reduce-ammonia-emissions.php

11 https://www.gov.ie/en/publication/23bdb-national-air-pollution-control-programme-napcp/

is consistent with actions already in place and committed to whereas the WAM scenario reflects a higher level of ambition as expressed in Government plans.

As can be seen from Table 3, compliance with the Emission Reduction Commitments (ERCs) for 2030 for SO_2, NO_x, NH_3 and $PM_{2.5}$ is projected based on the continued adoption of measures in the WEM scenario. Further reductions are then seen with adoption of planned polices and measures under the WAM scenario.

Ammonia emissions are projected to remain non-compliant initially, but with the adoption of abatement measures, emissions of this pollutant are forecasted to become compliant by 2025 and 2030. If emissions of NH_3 were to increase over and above those forecasted, it will put the compliance with reduction commitments at risk and further measures may be required.

NMVOC emissions, compliance is not achieved in either scenario without the inclusion of flexibility mechanism under Directive (EU) 2016/2284. Emissions of this pollutant will need to be addressed.

Table 3. Actual emissions for 2020, projected emissions for 2025 and 2030 and reduction commitments for NEC relevant pollutants

Pollutant	Emissions (kilotonnes)			2020-2029 and 2030 Reduction Commitments (% reduction compared with 2005 levels) based on latest inventory estimates	
	2020	2025	2030	2020-2029	2030
Total SO_2 *WEM*	10.74	6.93	5.32	**25.48**	**10.92**
Total SO_2 *WAM*	10.74	6.87	4.89	-65%	-85%
Total NO_x *WEM* [3]	59.30	41.76	32.02	**68.71**	**51.85**
Total NO_x *WAM**	59.30	40.76	29.25	-49%	-69%
Total NMVOC *WEM* [3]	66.50	66.41	65.83	**58.17**	**52.74**
Total NMVOC *WAM* [3]	66.50	66.14	64.21	-25%	-32%
Adjusted NMVOC *WEM* [3]*	46.16	45.24	43.81	**51.77**	**46.94**
Adjusted NMVOC *WAM* [3]*	46.16	44.97	42.19	-25%	-32%
Total NH_3 *WEM*	123.41	114.10	112.65	**118.53**	**113.74**
Total NH_3 *WAM*	123.41	108.84	107.92	-1%	-5%
Total $PM_{2.5}$ *WEM*	12.09	10.38	9.54	**15.53**	**11.18**
Total $PM_{2.5}$ *WAM*	12.09	10.34	8.62	-18%	-41%

* Article 4 (3) of the National Emission Reduction Commitment Directive provides that emissions of NO_x and NMVOC from categories 3B (manure management) and 3D (agricultural soils) are not accounted for the purpose of complying with 2020 and 2030 reduction commitments.

Section 3 of this report provides insights to current and historic trends of the five pollutants for which emission reduction commitments are in place for 2020 and 2030. It also provides an assessment of projected future emissions in 2030 of these pollutants, focusing on the *With Additional Measures* scenario.

Other pollutants

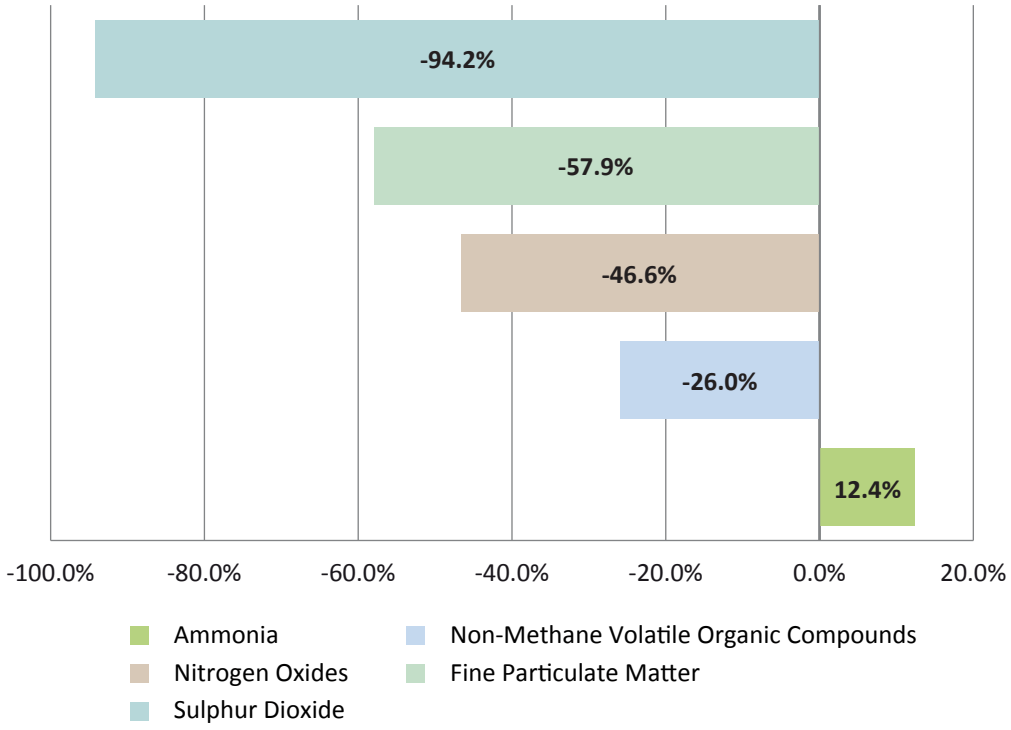
A large number of other pollutants for which no emission reduction commitments exist under Directive 2016/2284 are also reported on annually by the EPA. The general trend with these pollutants is downward, largely as a result of fuel switching from coal and peat to natural gas and kerosene in the residential sector, penetration of renewables for electricity generation and reductions in the quantities of coal and peat combusted for electricity generation. Changes in the age structure of the national vehicle fleet have also had a positive impact. Further detail on these pollutants is presented in section 4. Detailed information on these pollutants is also provided in Ireland's Informative Inventory Report 2022[8].

3. Key Air Pollutants under the National Emissions reduction Commitments Directive

The Revised Gothenburg Protocol to abate Acidification, Eutrophication and Ground-level Ozone was adopted in May 2012. The Protocol set national emission reduction commitments for 2020 and beyond for five pollutants; sulphur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds (VOCs), ammonia (NH_3) and particulate matter < 2.5 µm ($PM_{2.5}$) Although Ireland has not officially ratified the Protocol, the EU has implemented its provisions via the National Emission Reduction Commitments Directive, setting out emission reduction commitments for the five air pollutants described in this section.

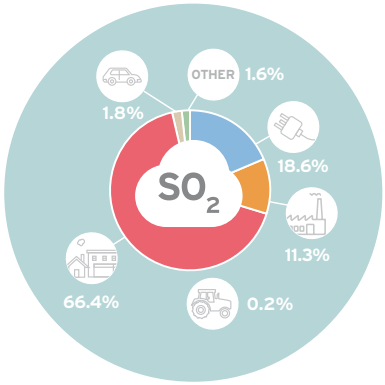
Ireland has seen big reductions in the emissions of all but ammonia (which increased) over the last thirty years as can clearly be seen in Figure 1 below. Despite this progress, challenges still remain to maintain a decreasing trend in the face of increasing economic activity, particularly in relation to emissions from Transport and Agriculture.

Figure 1: Percentage change in key NECD Air Pollutants 1990-2020



3.1 Sulphur Dioxide

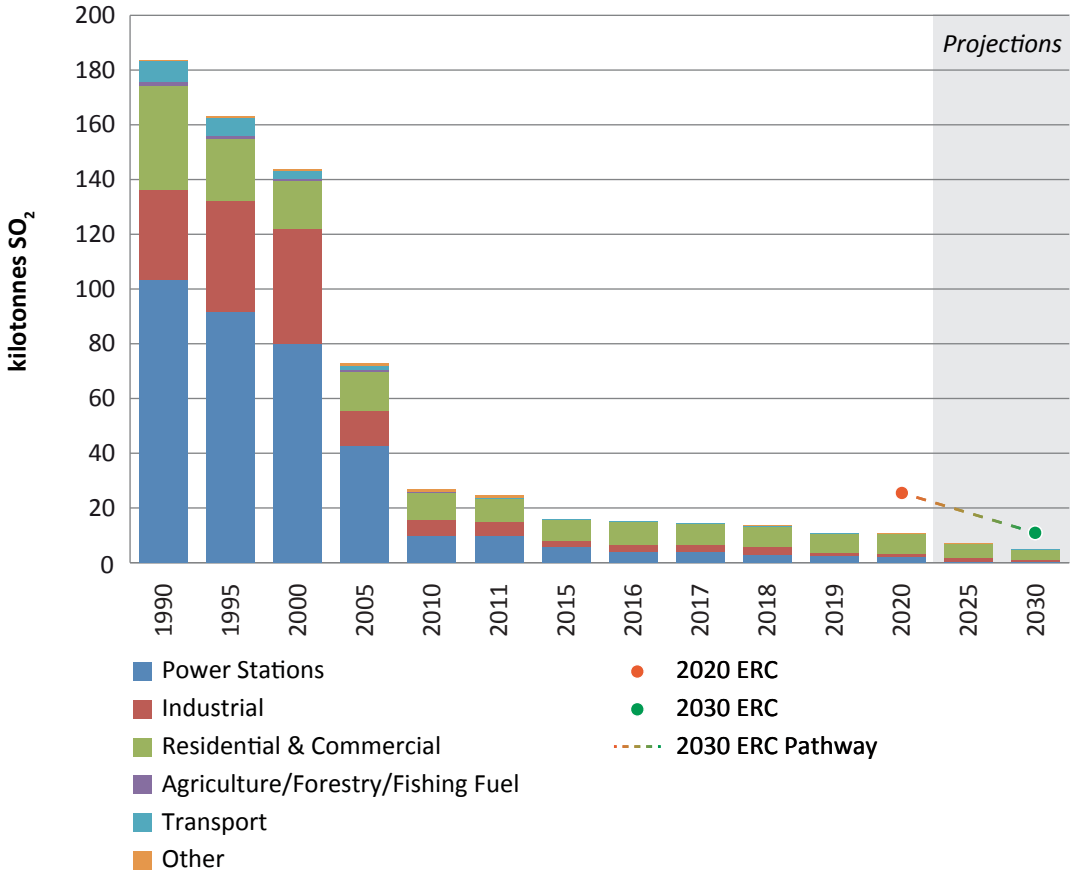
Sulphur dioxide (SO_2) is the major precursor to acid deposition, which is associated with the acidification of soils and surface waters and the accelerated corrosion of buildings and monuments. Emissions of SO_2 are derived from the sulphur in fossil fuels such as coal and oil used in combustion activities.



National Emission Reduction Commitments

Ireland's national emission reduction commitment for SO_2 under the NEC Directive is a 65% reduction on 2005 levels to be achieved for 2020 and an 85% reduction to be achieved for 2030. (Figure 2). Emissions have reduced by 85.2 per cent in the period 2005-2020 and therefore Ireland is compliant with the emission reduction commitment for 2020.

Figure 2: Trend in SO_2 emissions 1990-2030, current and future emission reduction commitments (ERCs)



Current and future trends in SO_2 emissions

Total national emissions of SO_2 were 1.3 per cent lower in 2020 compared to 2019. Power stations and combustion of fossil fuels in residential and commercial sectors for heating are the two principal sources of SO_2 emissions, contributing 18.6 and 66.4 per cent respectively to the total in 2020. Combustion sources in the industrial sector accounted for 11.3 per cent in 2020. Reductions in emissions were seen in both powers stations and manufacturing industry and construction sectors. Emissions in the residential and commercial sectors increased by 5.5 per cent, reflecting increased home heating due to Covid-19 restrictions and working from home.

In terms of the outlook for 2030, The emission projections predict compliance with the 2030 emission reduction commitment which require an 85 per cent reduction on 2005 levels. It is projected that in 2030 emissions will be 93.3 per cent below those in 2005. Key sources of projected SO_2 emissions, similar to current trends, include fossil fuel combustion for electricity generation in power stations and emissions from fuel combustion within the residential, commercial and manufacturing industry and construction sectors. Projected emission reduction are provided in Table 4.

Table 4 Projected SO_2 emission reduction in 2025 and 2030 compared to 2005

Projected SO_2 emissions	2025	2030
With Additional Measures Scenario (%)	-90.6	-93.3
Emission Reduction Commitment (%)	-65.0	-85.0

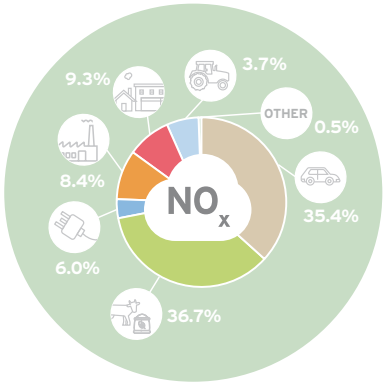
Historic SO_2 Emissions

Sulphur dioxide emissions in Ireland reduced considerably between 1990 and 2020. The latest estimates indicate a decrease of 94.2 per cent from 183.7 kt in 1990 to 10.7 kt in 2020. Emissions from Power stations and combustion in residential and commercial sectors decreased by 98.1 and 81.2 per cent respectively since 1990. The emissions from industrial sources decreased by 96.3 per cent from 1990 while the emissions in the transport sector decreased by 97.5 per cent. These large reductions reflect significant switching from the use of oil and solid fuels to natural gas, reduced sulphur content in coal and oil and implementation of abatement measures in electricity generation to meet emission limit values. Increased use of renewables rather than combustion of fossil fuels to meet increased electricity demand also contributes to this trend.

The remainder of SO_2 emissions are from combustion in oil refining, and combustion of fuels in agriculture, forestry, fishing. Emissions in these sectors decreased by 71.2 per cent and 98.4 per cent, respectively since 1990.

3.2 Nitrogen Oxides

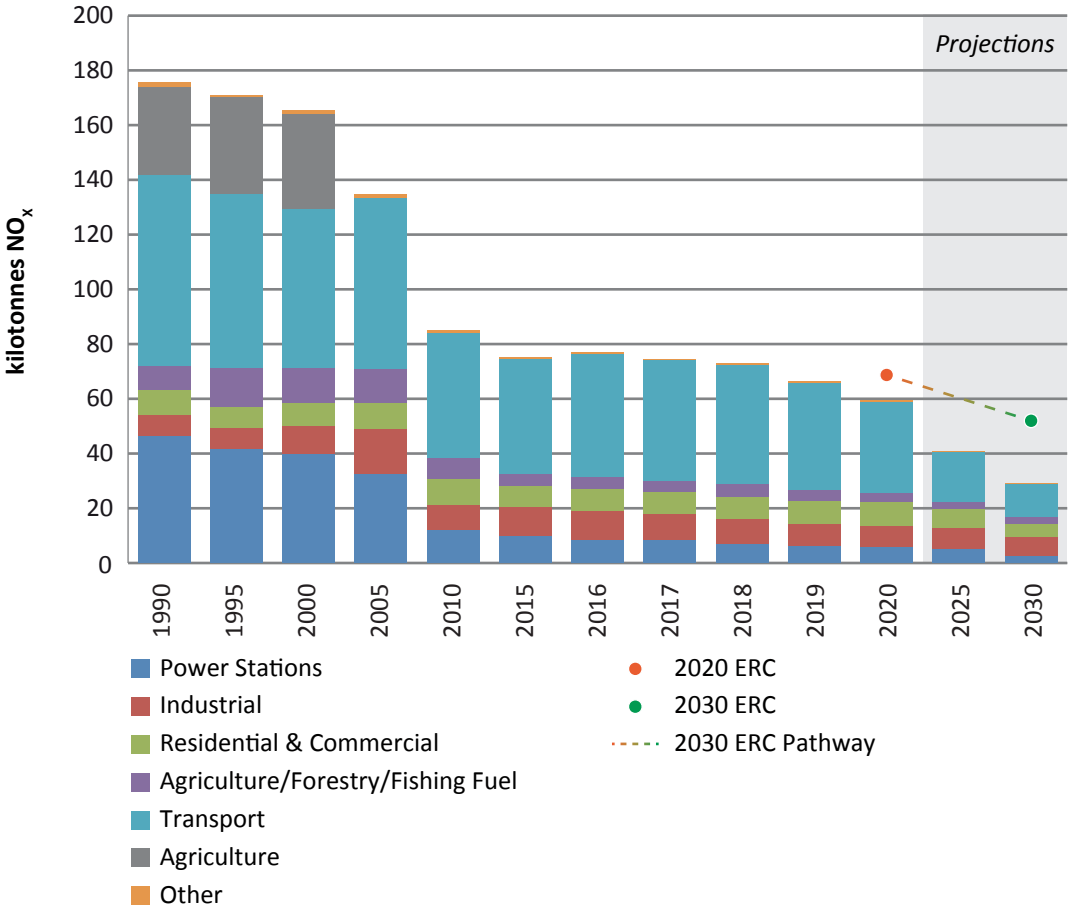
Emissions of nitrogen oxides (NO_x) contribute to acidification of soils and surface waters, ground level ozone formation and excess nitrogen or saturation in terrestrial ecosystems. Agriculture (as a result of both organic and synthetic nitrogen use) and fossil fuel combustion in power generation and transport are the principal sources



National Emission Reduction Commitments

Ireland's national emission reduction commitment for NO_x for 2020 under the NECD is a 49 per cent reduction compared to a 2005 baseline level. Article 4 (3) of Directive (EU) 2016/2284 states that emissions from manure management and agricultural soils are not accounted for the purpose of compliance assessment. On that basis emissions have reduced by 56 per cent in the period 2005-2020 and therefore Ireland is compliant with the emission reduction commitment for 2020. (Figure 3).

Figure 3: Trend in NO_x emissions 1990-2030, current and future emission reduction commitments (ERCs)



Current and future trends in NO_x emissions

The latest estimate is that 93.7 kt of NO_x was emitted in 2020. Emissions of NO_x reduced by 6.3 per cent in 2020 compared to 2019, mainly as a result of reduced emission from transport as result of Covid-19 restrictions. The agriculture sector, which consists of emissions from synthetic fertiliser application and emissions from urine and dung deposited by grazing animals, contributing approximately 36.7 per cent of the 2020 total. Transport (of which road transport is the main contributor), is the second biggest source of NO_x contributing approximately 35.4 per cent of the 2020 total. The industrial, power generation and residential/commercial sectors are the other main source of NO_x emissions, with contributions of 8.4 per cent, 6.0 per cent and 9.3 per cent respectively in 2020. The remainder of NO_x emissions emanate from combustion in the agriculture and other (refining and storage, solid fuel manufacture, fugitive emissions and waste) sectors, which together produced around 4.2 per cent of the total in 2020.

Total NO_x emissions in 2020, and projections for all subsequent years to 2030, are compliant with emission reduction commitments.

Table 5. Projected NO_x emission reduction in 2025 and 2030 compared to 2005

Projected NO_x emissions	2025	2030
With Additional Measures Scenario (%)	-66.6	-78.3
Emission Reduction Commitment (%)	-49.0	-69.0

Historic NO_x Emissions

NO_x emissions in Ireland have decreased by 46.6 per cent between 1990 and 2020 and emissions have decreased by 53.4 kt, or 36.3 per cent since 2008. This reduction was achieved due to improved abatement in Moneypoint power plant, reduced demand for clinker/cement and a reduction in emissions from road transportation. The application of low-NO_x burner technology in several major power stations and the increased use of natural gas have reduced NO_x emissions from electricity generation by 88.0 per cent on 1990 levels, even though electricity total final consumption has increased by 141.4 per cent over the same period. Emissions of NO_x from the coal-fired power plant at Moneypoint have decreased by 98.6 per cent between 1990 and 2020.

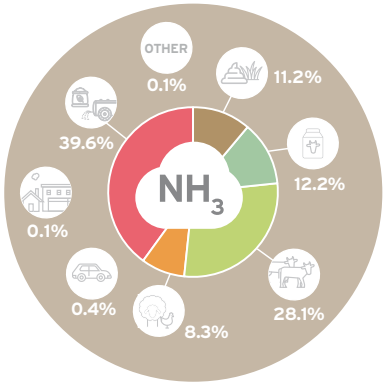
Road transport has seen a decline in emissions of 25.3 kt, or 43.2 per cent, between 2008 and 2020 due to the economic recession initially and in later years improvements in vehicle technologies. The effects of Covid-19 restrictions had a significant impact in 2020.

The NO_x figures for transport reported here are based on, fuel used, and not fuel sold, and therefore take into account fuel tourism. This means that the impact on emissions of fuel sold in the Republic of Ireland for consumption across the border in Northern Ireland is removed as allowed for under the *Guidelines for Reporting Emissions and Projections Data under the Convention on Long-range Transboundary Air Pollution*12, paragraph 23. It is estimated that fuel tourism accounted for 1.2 kt of NO_x in 2020.

12 Paragraph 23, ECE/EB.AIR/125

3.3 Ammonia

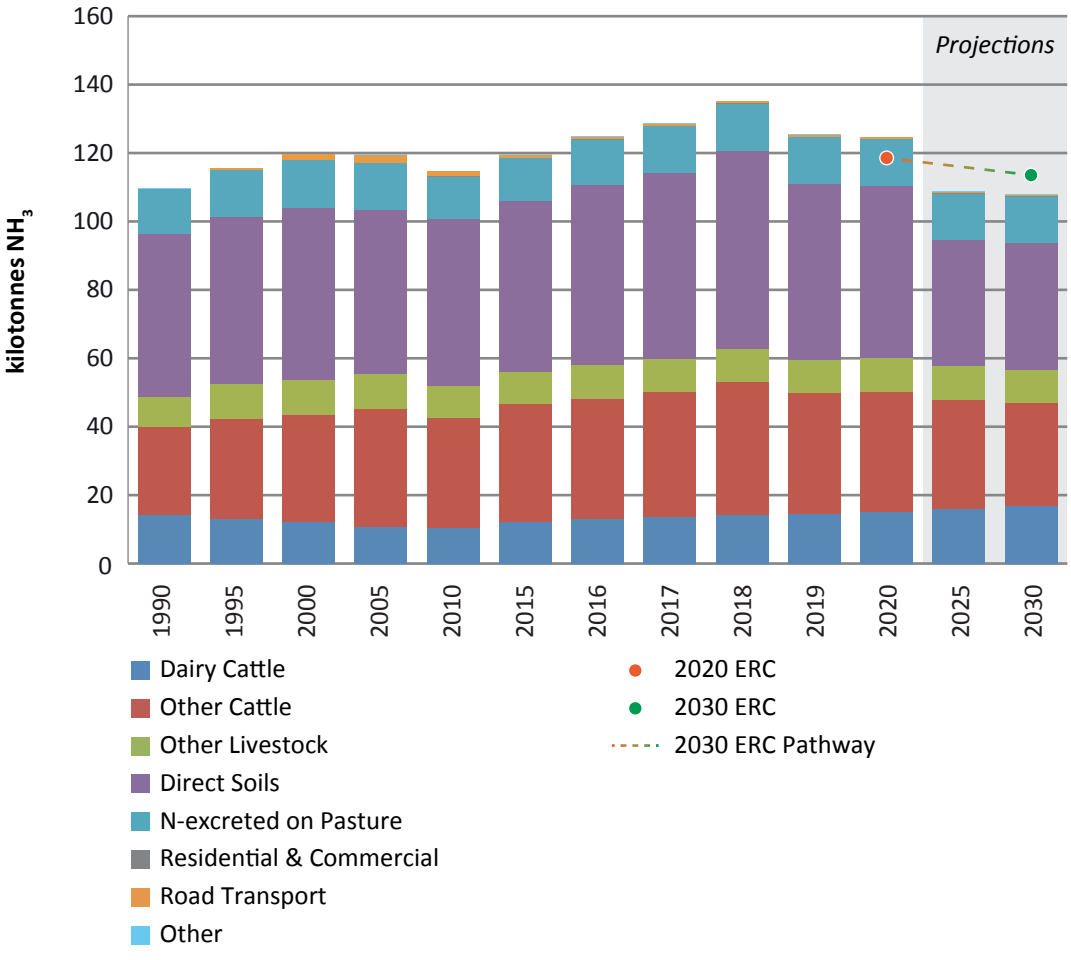
Ammonia (NH_3) emissions to air are associated with nitrogen deposition, acid rain and the formation of secondary particulate matter. The agriculture sector accounts for virtually all (99.4 per cent) of ammonia emissions in Ireland. Grasslands ultimately receive the bulk of the 42 million tonnes (Mt) of animal manures (equivalent to 545,385 tonnes of nitrogen) produced annually in Ireland along with nitrogen fertilisers which amounted to 379,519 tonnes (as nutrient nitrogen) in 2020. A proportion of the nitrogen in these inputs is volatilised into the air as ammonia.



National Emission Reduction Commitment

Ireland's national emission reduction commitment for NH_3 for 2020 under the NECD is a 1 per cent reduction compared to a 2005 baseline level. As emissions in 2020 were 3.1 per cent higher than in 2005, Ireland is non-compliant with the emission reduction commitment for 2020 (Figure 4).

Figure 4: Trend in NH_3 emissions 1990-2030, current and future emission reduction commitments (ERCs)



As shown in Figure 4 growth in emissions (due to increased bovine population and increased nitrogen fertiliser use) since the removal of milk quotas in 2015 is the main driver of non-compliance in 2020. In more recent years emissions have however, reduced in response to the adoption of abatement measures such as low emission spreading techniques and the use of inhibited urea fertiliser products.

Current and future trends in NH_3 emissions

The emissions in 2020 were 13.6 kt or 12.4 per cent higher than emissions in 1990. Emissions in 2020 were 1.6 per cent below those in 2019, mainly as a result of increased adoption of low emission spreading techniques at farm level. Animal manures produce about 90 per cent of ammonia emissions in agriculture and chemical fertilisers and road transport account for the remainder. It is estimated that approximately 12.3 per cent of the nitrogen in animal manures and 2.6 per cent of nitrogen contained in chemical fertilisers is lost to the atmosphere as NH_3 on average.

Under the With Existing Measures scenario, it is assumed that low emission spreading techniques, a reduction in concentrate crude protein for dairy cows and the lime application targets as set out in the DAFM AgClimatise document are met. Under this scenario, it is projected that the emission reduction commitment for 2020 is met in 2022. However, the levels of adoption of these measures as stated in AgClimatise must be met for compliance to be achieved. Total NH_3 emissions under the With Additional Measures scenarios are projected to be 9.9 per cent below 2005 levels. The emission reduction commitment for 2030 is a 5 per cent reduction compared to 2005, therefore it is projected that Ireland will be in compliance with its emission reduction commitment for that year assuming that the measures included in the With Additional Measures scenario are adopted in full. Measures outlined in the Teagasc NH_3 MACC and the DAFM AgClimatise document are included in this scenario including reduction in crude protein content of concentrates fed to pigs; cattle and pig slurry amendments; covering of slurry stores; drying of poultry manure; ban on the use of straight urea fertiliser; replacement of 65 per cent of calcium ammonium nitrate (CAN) and CAN based compounds with inhibited urea products and target nitrogen fertiliser application of 325,000 tonnes in 2030. Achieving the adoption of these measures in full will require significant policy levers that as yet do not exist.

Table 6: Projected NH_3 emission reduction in 2025 and 2030 compared to 2005

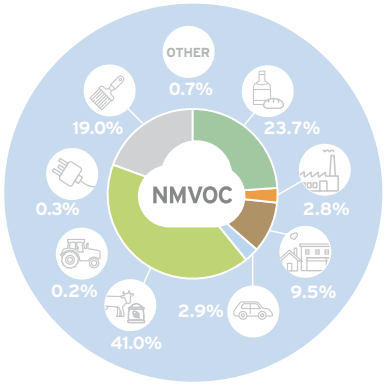
Projected NH_3 emissions	2025	2030
With Additional Measures Scenario (%)	-9.1	-9.9
Emission Reduction Commitment (%)	-1.0	-5.0

Historic NH_3 Emissions

The NH_3 emissions trend is largely determined by the cattle population and showed a steady increase up to 127.6 kt in 1998. There was some decline in the populations of cattle and sheep after 1998, as well as a decrease in fertiliser use, which contributed to a decrease in NH_3 emissions in the period 2000 to 2011. Subsequently, increases in cattle numbers and fertiliser use have seen NH_3 emissions increase especially in response to the removal of milk quotas in 2015. NH_3 emissions increased up to 2018 to 135.3 kt, the highest emissions across the timeseries (response to significant drought conditions in 2018 and increase nitrogen fertiliser and concentrate feeding to bovines). In 2020 approximately 36% of cattle slurry was applied using low emission techniques (strong growth from 16 per cent in 2019) and there was a 62 per cent increase (following a fourfold increase in 2019) in the use of inhibited urea fertiliser products. These are positive actions and are welcomed. Road transport produces a small proportion of emissions of ammonia (< 1 per cent) mainly from petrol passenger cars with three-way catalysts.

3.4 Non-Methane Volatile Organic Compound (NMVOC) emissions

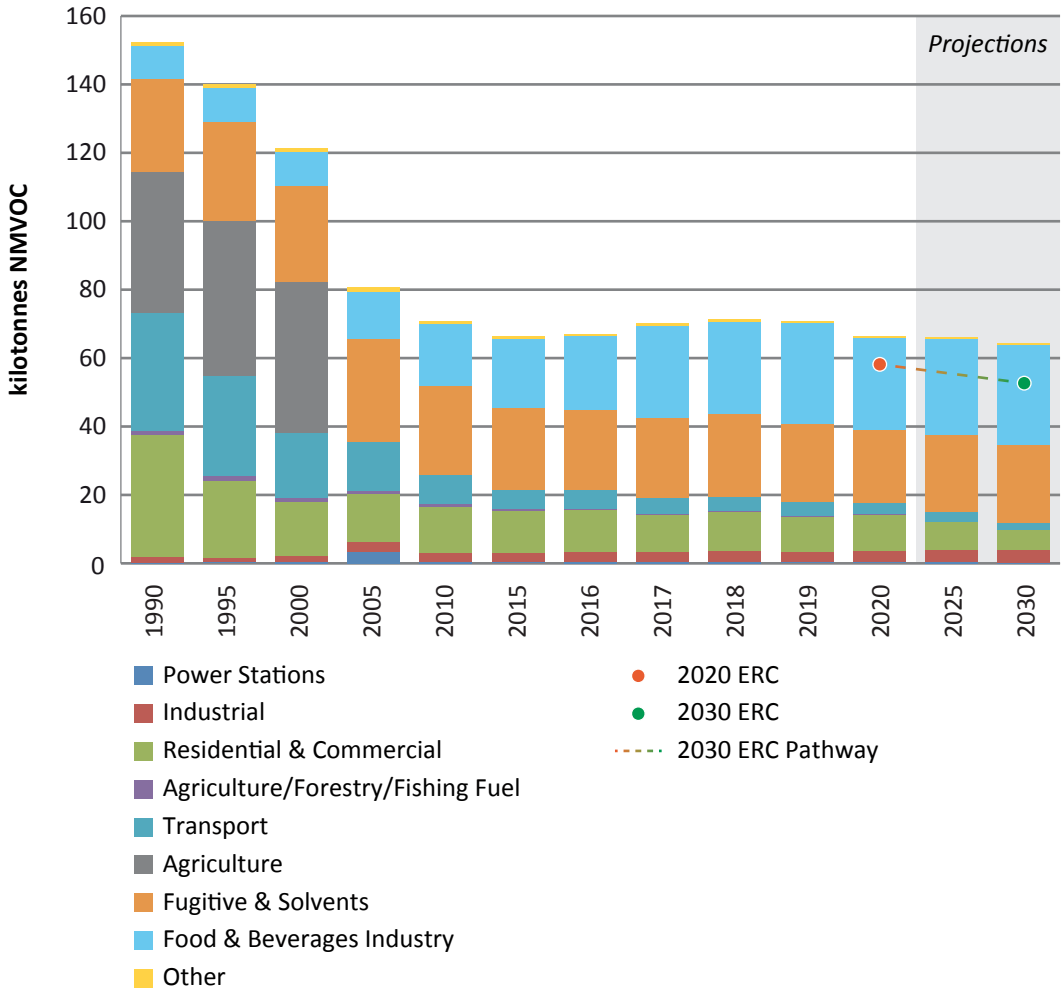
Non-methane volatile organic compounds (NMVOC) are emitted as gases by a wide array of products including paints, paint strippers, glues, cleaning agents and adhesives. They also arise as a product of incomplete combustion of fuels, from the storage and handling of animal manure and fertilisers in agriculture and from the food and beverages industry.



National Emission Reduction Commitment

Ireland's national emission reduction commitment for NMVOC for 2020 under the NECD is a 25 per cent reduction compared to a 2005 baseline level. As per Article 4 (3) of the NECD, emissions from manure management and agricultural soils are not accounted for the purpose of compliance targets. When this is taken into account emissions have reduced by 14.3 per cent in the period 2005-2020 and therefore Ireland is non-compliant with the emission reduction commitment for 2020 (Figure 5).

Figure 5: Trend in NMVOC emissions 1990-2030, current and future emission reduction commitments (ERCs)



Ireland has applied an adjustment to NMVOC emission inventories, as allowed under Article 5(1) of Directive 2016/2284 in accordance with Part 4 of Annex IV, as Ireland is non-compliant with its national emission reduction commitment for NMVOC as a result of applying improved emission inventory methods updated in accordance with better scientific knowledge. This adjustment relates to the inclusion of emissions from spirit production in the food and beverage industry category. When this flexibility is taken into account emissions in 2020 are 33.1 per cent below 2005 levels and Ireland and the emission reduction commitment for 2020 is reached.

Current and future trends in NMVOC emissions

The main sources of NMVOC emissions in Ireland are from manure management in agriculture, solvent use and the food and beverages industry. Emission in 2020 were 3.3 per cent below those in 2019, mainly driven by a reduction in emissions from the food and beverage industry. These sources produced 41.0 per cent, 19.0 per cent and 23.7 per cent, respectively of the annual total in 2020. Coal burning in the residential sector is another important but declining source as coal consumption decreases. Emissions from combustion of fossil fuels across all sectors; power stations, industrial, residential, commercial and agriculture account for 12.8 per cent of national total NMVOC emissions in 2020. Transport emissions account for 2.9 per cent of national total emissions of NMVOC, mainly from exhaust and fugitive releases from gasoline vehicles.

Total NMVOC emissions under the WAM scenario are projected to be 17.2 per cent below 2005 levels in 2030. The emission reduction commitment for 2030 is a reduction of 32 per cent on 2005 emission levels (Table 7). The emission projections thus predict non-compliance with the 2030 emission reduction commitment. Key drivers in emissions over the projected period include solvents and other product use, and emissions from food and beverages industry.

Table 7 also presents a scenario where the NMVOC emissions from source category 2.H (spirit production) are excluded, as this source was not included in the national inventory at the time the 2020 and 2030 reduction commitments were established. Emissions in 2030 are projected in this case to be 38.9 per cent below emission levels in 2005. The emission reduction commitment for 2030 is a 32 per cent reduction, this compliance with the emission reduction commitment is projected when the flexibility outlined in Article 5(1) of Directive 2016/2284 in accordance with Part 4 of Annex IV.

Table 7. Projected NMVOC emission reduction in 2025 and 2030 and associated emission reduction commitments compared to 2005

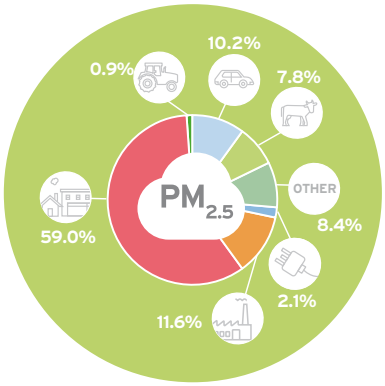
Projected NMVOC emissions	2025	2030
(excluding emissions from agricultural categories 3B and 3D)		
With Additional Measures Scenario (%)	-14.7	-17.2
Emission Reduction Commitment (%)	-25.0	-32.0
(excluding emissions from agricultural categories 3B and 3D and source category 2.H (spirit production)		
With Additional Measures Scenario (%)	-34.8	-38.9
Emission Reduction Commitment (%)	-25.0	-32.0

Historic NMVOC Emissions

Reductions corresponding to 26.0 per cent of NMVOC emissions have been achieved from 1990 to 2020. Technological controls for NMVOCs in motor vehicles, which have led to a significant reduction in emissions from road transport, have largely been responsible for the decrease in overall emissions along with reduced use of coal and peat as a source of heating in the residential sector. On the other hand, emissions from the agriculture sector have increased by 12.0 per cent since 1990. Emissions from the food and beverage industry, mainly spirit production have increased by 177.9 per cent over the same period.

3.5 Fine Particulate matter ($PM_{2.5}$) emissions

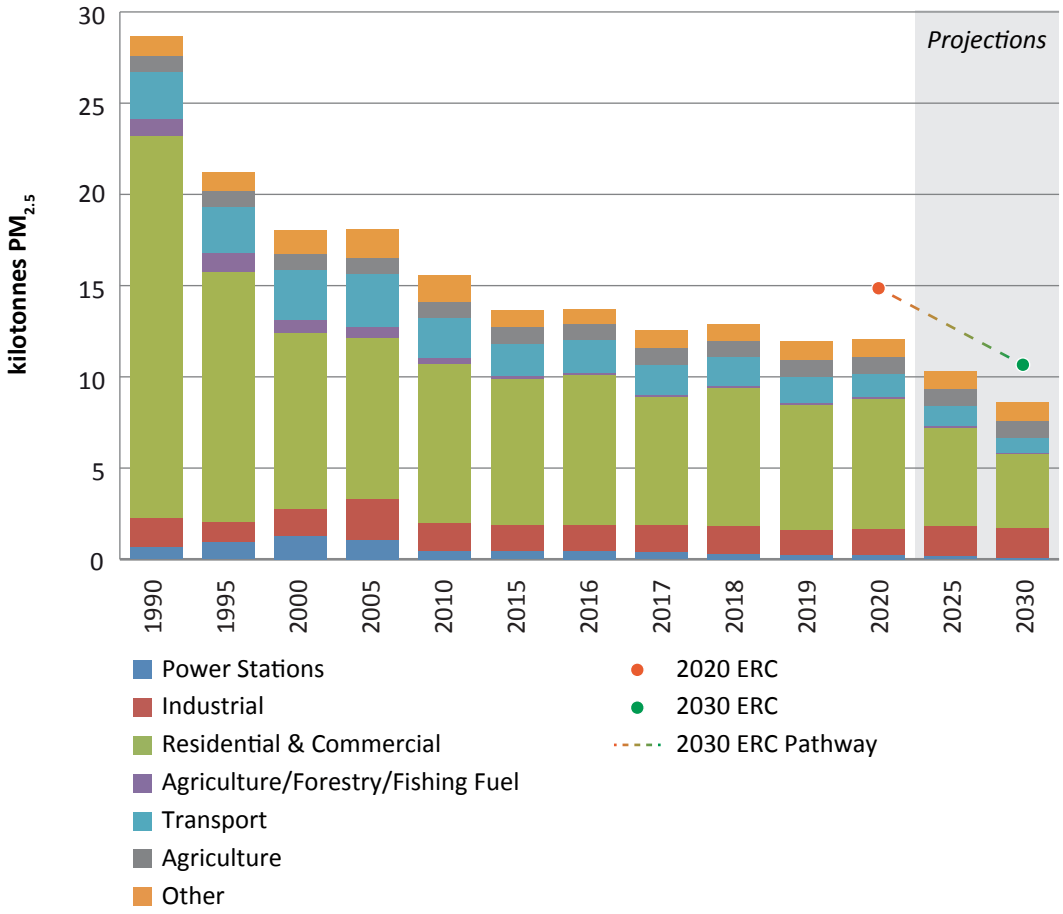
There are many sources of particulate matter (dust) including vehicle exhaust emissions, soil and road surfaces, construction works and industrial emissions. Particulate matter can be formed from reactions between different pollutant gases. Small particles can penetrate the lungs and cause damage. These are known as PM10 (diameter less than 10µm) and $PM_{2.5}$ (diameter less than 2.5µm). $PM_{2.5}$ is a better indicator of anthropogenic (man-made) emissions. Fine particulate matter $PM_{2.5}$ is responsible for significant negative impacts on human health.



National Emission Reduction Commitment

Ireland's national emission reduction commitment for $PM_{2.5}$ for 2020 under the NECD is a 18 per cent reduction compared to a 2005 baseline level. Emissions have decreased by 33.3 per cent in the period 2005-2020 and therefore Ireland is compliant with the emission reduction commitment for 2020. (Figure 6).

Figure 6: Trend in $PM_{2.5}$ emissions 1990-2030, current and future emission reduction commitments (ERCs)



Current and future trends in $PM_{2.5}$ Emissions

Emissions in 2020 were 1.4 per cent above those in 2019, in the main due to increased heating requirements in the residential sector as employees worked from home during Covid-19 restrictions. The main sources of $PM_{2.5}$ emissions in Ireland are from combustion of fossil fuels residential & commercial and manufacturing industries and construction sectors which produced 59.0 per cent and 11.6 per cent of the annual total, respectively in 2020. $PM_{2.5}$ emissions in the Other sectors account for 8.4 per cent of the total in 2020. These emissions arise from Manufacture of solid fuels, oil refining/storage sectors, coal mining and handling, quarrying and mining of minerals other than coal, construction and demolition, storage, handling and transport of mineral products, road paving with asphalt, fireworks, use of tobacco, storage handling and transport of agricultural products and accidental vehicle and building fires. Transport was responsible for a 10.2 per cent share to the national total in 2020. Emissions from Agriculture arise from Manure Management and Inorganic Nitrogen fertilizers, together accounting for 7.8 per cent of the national total in 2020. Emissions for public electricity and heat production accounted for 2.1 per cent of the total.

Total $PM_{2.5}$ emissions under the With Additional Measures scenario are projected to 52.4 below 2005 levels in 2030 (Table 8). The emission reduction commitment for 2030 is a 41.0 per cent reduction. It is therefore projected that Ireland will be in compliance with its emission reduction commitment for $PM_{2.5}$ in 2030 under this scenario. Key contributors to emissions over the projected period include the combustion of fossil fuels in the Residential, Commercial and Manufacturing Industry sectors.

It must be noted that while national emission levels are in compliance with the emission reduction commitment, localised air quality issues exist. Particulate matter levels recorded at ambient monitoring stations in Ireland continue to be a concern in villages, towns and cities. Monitored levels of particulate matter were above the WHO air quality guidelines at 38 of 67 monitoring stations in 2020. Continued reductions in solid fuel burning for residential heating is necessary to continue the reduction in particulate matter emissions and associated particulate matter concentrations in ambient air. Additionally research is underway to better understand emissions of particulate matter from the combustion of fuels in the residential sector.

Table 8. Projected $PM_{2.5}$ emission reduction and emission reduction commitments

Projected $PM_{2.5}$ emissions	2025	2030
With Additional Measures Scenario (%)	- 42.9	- 52.4
Emission Reduction Commitment (%)	- 18.0	- 41.0

Historic $PM_{2.5}$ Emissions

Total $PM_{2.5}$ emissions in 2020, at 12.1 kt, show a reduction of 57.9 per cent since 1990. Reduced use of coal and peat in the residential & commercial sectors, with increased use of gasoil, kerosene and natural gas has resulted in 66.0 per cent lower emissions between 1990 and 2020 in those combined sectors. Agriculture emissions have increased by 7.8 per cent from their 1990 level largely as a result of the increased cattle herd. Emissions from Transport sector, dominated by Road Transport have been decreasing since 2005, with a 52.0 per cent reduction between 1990 and 2020. This was largely due to technological advances and the age structure of the national fleet (whereby in recent times an increasing proportion of the fleet is newer vehicles), which has in turn been offset somewhat by increases in vehicle numbers over the time series.

4. Air Pollutants with no NEC Directive emission reduction commitment

The reporting obligations outlined in Article 8 and Annex I of the Directive (EU) 2016/2284 also include the mandatory reporting of emissions to air of carbon monoxide, cadmium, mercury, lead, polycyclic aromatic hydrocarbons, dioxins and furans, polychlorinated biphenyls (PCB), hexachlorobenzene, coarse particulate matter < 10µm and black carbon. Voluntary reporting of annual emissions of arsenic, chromium, copper, nickel, selenium, Zinc and total suspended particulates (TSP) is also undertaken. Emission reduction commitments are not set for any of the aforementioned pollutants in the Directive.

A brief overview of the pollutants involved and the trend in emissions of these pollutants over time is presented below. A summary table (Table 9) indicates the relative importance of each sector to emissions of each air pollutant. If a sector is the largest source of a pollutant, this is indicated in the second column, followed in the third column by other air pollutants for which the sector is a significant source.

Table 9. Sectoral sources of Pollutants

Sector	Largest source	Significant source
Road Transport	Cu	CO, $PM_{10,}$ $PM_{2.5}$, TSP, BC, Pb, Hg, Cr, Zn
Power Stations		CO, Pb, Cd, Hg, As, Cr, Ni, Se, Zn, HCB
Combustion in manufacturing industries	Cd, Zn	$PM_{2.5}$, BC, Hg, As, Cr, Ni, Se, PCB, PAH
Industrial Processes	TSP	PM_{10}, $PM_{2.5}$, Cd, Cr, Cu, Zn
Residential and Commercial Combustion	CO, $PM_{2.5}$, BC, Pb, Hg, Ni, Se, Dioxins, PCB, PAH	PM_{10}, TSP, Cd, As, Cr, Zn, PCB
Agriculture	PM_{10}, HCB	$PM_{2.5}$, TSP
Industrial waste incineration	As, Cr	
Solid waste disposal (landfills)		Hg,
Vehicle and building fires and waste burning		Dioxins

Carbon monoxide (CO) emissions continue to decline, driven by major reductions due to three-way catalysts in gasoline vehicles in Road Transport, and a large decrease in the use of solid fuels for space heating in the Residential sector. National total CO emissions have reduced by 79.1 per cent over the period 1990 to 2020.

Emissions of *coarse particulate matter* (PM10) have reduced by 35.1 per cent since 1990. The main determinant of the trend in PM_{10} emissions is the Agriculture sector with a 31.3 per cent share of the national total, and combustion in the Residential and Commercial/Institutional sectors combined with 25.4 per cent share of the total in 2020. Total suspended particulate emissions have decreased by 20.8 per cent, since 1990. Total suspended particulates emissions are driven by a wide range of minor sources. *Black Carbon* (BC) emissions have decreased by 65.3 per cent, between 1990 and 2020. The main driver of the BC trend is the Residential and Commercial/Institutional sectors combined with a 43.5 per cent share of the total in 2020.

Over the period 1990–2020, total national *lead* (Pb) emissions have decreased by 97.6 per cent with the Pb emissions trend largely determined by the Road Transport sector. There was a marked decrease between

1999 and 2005 when the lead content of petrol was reduced. Combustion of fuels in the Residential and Commercial/Institutional sectors is the largest source of Pb in 2020 accounting for 43.8 per cent of the national total.

Total national emissions of *cadmium* (Cd) have decreased by 58.1 per cent. Emissions of Cd are largely determined by combustion of fuels in the Manufacturing Industries and Construction sector, specifically combustion sources in Non-Ferrous Metals.

Total national emissions of *mercury* Hg have decreased by 64.2 per cent between 1990 and 2020. Emissions from Manufacturing Industries and Construction are the largest source of Hg. Emissions from the Residential and Commercial/Institutional and Public Electricity and Heat Production sectors are also an important source of Hg.

Emissions of *arsenic* (As) are largely dominated by incineration of hazardous and clinical wastes and crematoria. In the past Public Electricity and Heat Production was the largest however both a reduction in coal and peat power generation and move towards cleaner fuels has reduced its contribution substantially.

Emissions of *chromium* (Cr) have decreased by 50.6 per cent between 1990 and 2020. Transport, fuel combustion in the Manufacturing Industries and Construction sectors and Waste Incineration are the main sources.

Total *copper* (Cu) emissions in Ireland were steadily increasing over the 1990–2008 period and have been steadily decreasing since. Total emissions in 2020 were 21.0 per cent lower than in their peak in 2008 but they are 56.4 per cent higher than in 1990.

National total emission estimates of *nickel* (Ni) were steadily increasing over the 1990–1999 period and have been generally decreasing from 1999 onwards. The main contributor to the trend is combustion of fuels in the Residential and Commercial/Institutional and Manufacturing Industries and Construction sectors.

The main contributor to national *selenium* (Se) emissions has been fuel combustion in the Residential and Commercial/Institutional sectors which combined accounted for 70.2 per cent of selenium emissions in 2020.

National total emissions of *zinc* (Zn) have fallen by 65.7 per cent between 1990 and 2020. In the 1990-2001 period, the main determinant of the trend in zinc emissions was Metal Production. Since the closure of Ireland's only steel plant in 2001, fuel combustion in the Transport and Residential and Commercial/Institutional and Manufacturing Industries and Construction sectors are the largest sources.

Dioxin and *furan* emission levels decreased having reduced by 59.0 per cent between 1990 and 2020. The main contributors to national emissions are the combined Residential and Commercial/Institutional sectors, with a 72.7 per cent share of total emissions in 2020.

Hexachlorobenzene (HCB) emissions from secondary aluminium processing were the largest source of HCB emissions in Ireland up to 1996. Since then the use of pesticides (in which HCB is a contaminent) in agriculture is the largest source accounting for 86.4 per cent of national emissions in 2020.

Emissions of *polychlorinated biphenyls* (PCBs) have decreased by 81.0 per cent between 1990 and 2020. Emissions from the Waste sector, specifically vehicle and building fires and other burning such as bonfires and household waste are the largest sources in 2020.

Polycyclic Aromatic Hydrocarbon (PAHs) emissions, which include emissions of *benzo[a]pyrene, benzo[b] fluoranthene, benzo[k]fluoranthene*, and *indeno[1,2,3-cd]pyrene*, are dominated by combustion in the Residential and Commercial/Institutional sectors. Declines in the use of coal and sod peat have led to reduced emissions from these sectors.

Appendix – Emissions of key NEC Directive Air Pollutants, 1990-2020

	SO_2	NO_x	NMVOC	NH_3	$PM_{2.5}$
			kilotonnes		
1990	183.746	175.568	152.206	109.801	28.695
1991	183.578	176.473	153.027	111.774	28.469
1992	171.257	184.076	148.004	114.535	25.045
1993	162.276	176.008	145.369	113.915	24.704
1994	177.165	173.110	141.222	114.951	22.586
1995	163.204	171.006	139.265	115.677	21.246
1996	150.190	175.742	140.308	119.970	21.798
1997	168.533	165.527	136.170	123.074	19.884
1998	178.610	169.309	137.672	127.623	20.954
1999	160.871	167.211	127.989	125.361	17.971
2000	143.896	165.318	121.291	119.835	18.060
2001	141.975	166.332	121.852	119.991	17.999
2002	106.399	158.197	122.219	120.470	17.247
2003	82.437	160.099	121.077	120.521	17.149
2004	73.122	163.480	120.773	117.930	17.364
2005	72.805	167.253	121.701	119.723	18.117
2006	60.741	162.528	121.828	121.348	17.651
2007	54.948	156.555	120.933	114.573	17.029
2008	45.631	147.094	117.865	116.658	17.001
2009	32.655	123.230	115.930	116.852	16.346
2010	26.672	116.459	112.802	114.896	15.538
2011	24.620	103.853	109.636	110.502	13.737
2012	23.328	107.214	110.979	117.136	13.598
2013	23.338	108.541	112.792	117.976	13.962
2014	17.323	106.730	109.805	114.283	13.321
2015	15.896	106.249	110.889	119.563	13.658
2016	15.263	108.956	113.111	124.859	13.696
2017	14.517	108.346	116.589	128.668	12.539
2018	13.677	109.124	116.846	135.298	12.911
2019	10.884	100.057	116.517	125.407	11.923
2020	10.739	93.740	112.617	123.406	12.087

An Ghníomhaireacht um Chaomhnú Comhshaoil

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

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

- **Rialú:** Déanaimid córais éifeachtacha rialaithe agus comhlíonta comhshaoil a chur i bhfeidhm chun torthaí maithe comhshaoil a sholáthar agus chun díriú orthu siúd nach gcloíonn leis na córais sin.
- **Eolas:** Soláthraímid sonraí, faisnéis agus measúnú comhshaoil atá ar ardchaighdeán, spriocdhírithe agus tráthúil chun bonn eolais a chur faoin gcinnteoireacht ar gach leibhéal.
- **Tacaíocht:** Bímid ag saothrú i gcomhar le grúpaí eile chun tacú le comhshaol atá glan, táirgiúil agus cosanta go maith, agus le hiompar a chuirfidh le comhshaol inbhuanaithe.

Ár bhFreagrachtaí

CEADÚNÚ

Déanaimid na gníomhaíochtaí seo a leanas a rialú ionas nach ndéanann siad dochar do shláinte an phobail ná don chomhshaol:

- saoráidí dramhaíola (m.sh. láithreáin líonta talún, loisceoirí, stáisiúin aistrithe dramhaíola);
- gníomhaíochtaí tionsclaíocha ar scála mór (m.sh. déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta);
- an diantalmhaíocht (m.sh. muca, éanlaith);
- úsáid ghlanscartha agus scaoileadh rialaithe Orgánach Géinmhodhnaithe (OGanna);
- foinsí radaíochta ianúcháin (m.sh. trealamh x-gha agus radaiteiripe, foinsí tionsclaíocha);
- áiseanna móra stórála peitril;
- sceitheadh fuíolluisce;
- gníomhaíochtaí dumpála ar farraige.

FORFHEIDHMIÚ NÁISIÚNTA I LEITH CÚRSAÍ COMHSHAOIL

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

BAINISTÍOCHT UISCE

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

MONATÓIREACHT, ANAILÍS AGUS TUAIRISCIÚ AR AN GCOMHSHAOL

- Monatóireacht a dhéanamh ar cháilíocht an aeir agus Treoir an AE maidir le hAer Glan don Eoraip (CAFÉ) a chur chun feidhme.
- Tuairisciú neamhspleách le cabhrú le cinnteoireacht an rialtais náisiúnta agus áitiúil (m.sh. tuairisciú tréimhsiúil ar Staid Chomhshaol na hÉireann agus Tuarascálacha ar Tháscairí).
- Rialú Astaíochtaí na nGás Ceaptha Teasa in Éirinn.
- Fardail agus réamh-mheastacháin na hÉireann maidir le gás ceaptha teasa a ullmhú.
- An Treoir maidir le Trádáil Astaíochtaí a chur chun feidhme i gcomhair breis agus 100 de na táirgeoirí dé-ocsaíde carbóin is mó in Éirinn.

TAIGHDE AGUS FORBAIRT COMHSHAOIL

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

MEASÚNÚ STRAITÉISEACH COMHSHAOIL

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

COSAINT RAIDEOLAÍOCH

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

TREOIR, FAISNÉIS INROCHTANA AGUS OIDEACHAS

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

MÚSCAILT FEASACHTA AGUS ATHRÚ IOMPRAÍOCHTA

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

BAINISTÍOCHT AGUS STRUCHTÚR AN GCC

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

- An Oifig um Inbhuanaitheacht Comhshaoil
- An Oifig Forfheidhmithe i leith cúrsaí Comhshaoil
- An Oifig um Fhianaise agus Measúnú
- An Oifig um Chosaint Radaíochta agus Monatóireacht Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

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