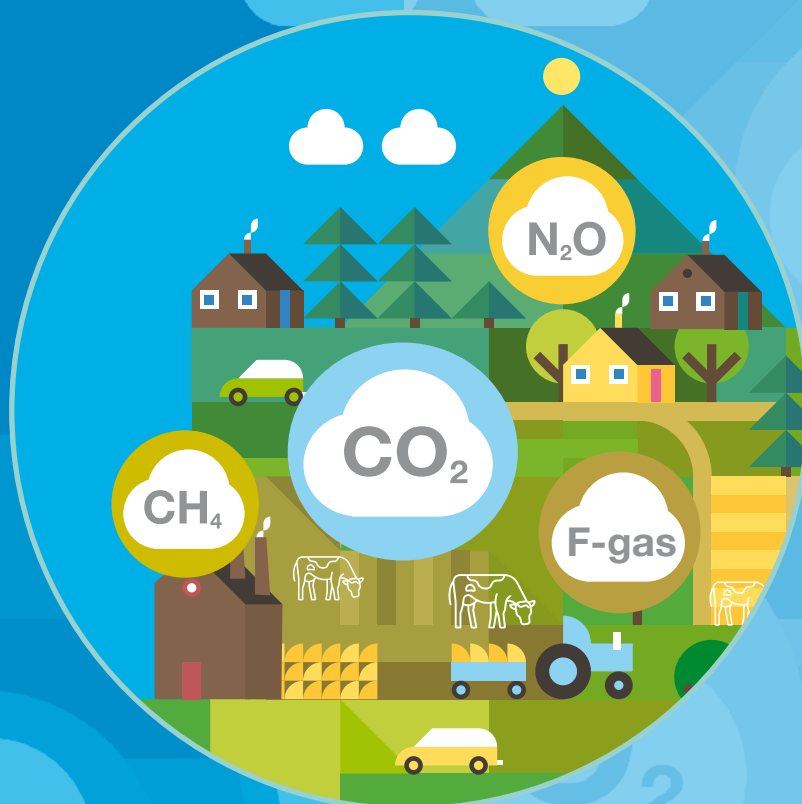


Ireland's Final Greenhouse Gas Emissions

1990-2019

April 2021



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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.

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Key Findings

<p>Welcome Reduction in overall GHG emissions</p>	<p>2019 total national greenhouse gas emissions are estimated to have declined by 4.4% on 2018 levels to 59.78 million tonnes carbon dioxide equivalent (Mt CO₂eq), despite the economy continuing to grow. This much needed reduction in total emissions, driven by the Energy, Agriculture and Transport sectors, is a step in the right direction that must be sustained and enhanced over the next decade.</p>
<p>Exceeding 2019 EU annual limit</p>	<p>The final estimates of greenhouse gas emissions for the period 1990-2019 indicate that Ireland will exceed its 2019 annual limit set under the EU's Effort Sharing Decision (ESD) by 6.85 Mt CO₂eq. This makes it highly unlikely that Ireland will meet its overall 2020 targets under the scheme, regardless of the impact of COVID on emissions in 2020.</p>
<p>ETS and non-ETS emissions both reducing in 2019</p>	<p>In 2019, emissions from Ireland's Emissions Trading Sector (ETS) decreased by 8.7% or 1.34 Mt CO₂eq while non-ETS emissions decreased by 3.0% or 1.41 Mt CO₂eq.</p>
<p>Less Coal means less emissions from electricity generation</p>	<p>Emissions in the Energy Industries sector show a decrease of 11.2% or 1.19 Mt CO₂eq in 2019, which is attributable to a 69% decrease in coal and an 8% decrease in peat used in electricity generation. Electricity generated from wind increased by 16.0% in 2019.</p>
<p>Less fertiliser and lime use reduces Agriculture emissions</p>	<p>Agriculture emissions decreased by 4.0% or 0.88 Mt CO₂eq in 2019, driven by reduced nitrogen fertiliser use (down -10.1% in 2019) and a 25.4% reduction in the quantity of lime used on soils. This is a welcome reduction in emissions from the sector but one which may be difficult to sustain given a further increase of 2.8% in dairy cow numbers in 2019 (the 9th consecutive year of growth).</p>
<p>Marginal decrease in Transport emissions</p>	<p>Greenhouse gas emissions from the Transport sector decreased slightly overall, by 0.3% or 0.04 Mt CO₂eq in 2019. This decrease was largely driven by an increase in biofuel use, +21.9% in 2019, which offset an overall increase in Transport energy consumption of 0.2%.</p>
<p>Less coal and warmer winter means less Residential emissions</p>	<p>Greenhouse gas emissions from the Residential sector decreased by 7.3% or 0.52 Mt CO₂eq due to substantial reductions in carbon intensive fossil fuel use; coal -29%, peat -7%. Kerosene and natural gas use in households also decreased by 4% and 2% respectively as a result of a warmer winter than in 2018.</p>

1. Introduction

The EPA is responsible for compiling the inventories of greenhouse gas emissions for Ireland and for reporting the data to the relevant European and international institutions. As such, Ireland's legal reporting obligations require that we submit data for the period 1990-2019 in January, March and April 2021 to the European Commission and the United Nations Framework Convention on Climate Change (UNFCCC).

The final estimates of Ireland's greenhouse gas figures for the years 1990-2019 are based on the SEAI's final energy balances released in November 2020 and are estimated using methodologies employed in the inventory in accordance with UNFCCC reporting guidelines and the latest available input data. In addition, verified emissions data from installations covered by the EU's Emissions Trading Scheme (ETS) are included. These estimates are, at this stage, final estimates of Ireland's greenhouse gas figures for the years 1990-2019 and have been officially submitted to the European Commission on 15th March 2021.

The 2019 estimates are presented on the following pages, accompanied by an account of how these differ from the 2018 estimates. The recent and long-term trends in greenhouse gas emissions across key sectors, and their significance in relation to Ireland's target under the EU's Effort Sharing Decision up to 2020 are also assessed.

The latest Inventory year, 2019, predates the impact of the current Pandemic and the expected impact of measures announced in the 2019 Climate Action Plan. The impact of the pandemic in terms of greenhouse gas emissions will be incorporated in the 2020 Inventory in 2021, which is also likely to see the beginning of new measures announced in the Climate Action Plan taking effect.



2. Ireland's Final Greenhouse Gas Emissions in 2019

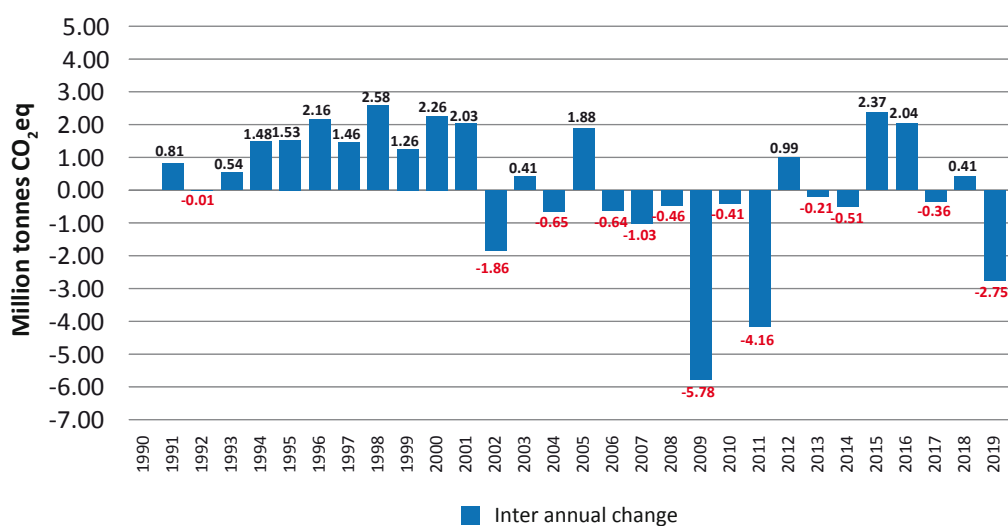
For 2019, final total national greenhouse gas emissions are estimated to be 59.78 million tonnes carbon dioxide equivalent (Mt CO₂eq) which is 4.4% lower (or 2.75 Mt CO₂eq) than emissions in 2018 (62.53 Mt CO₂eq) and follows a 0.7% increase in emissions reported for 2018. Emission reductions have been recorded in 6 of the last 10 years.

In 2019, national total emissions decreased (-4.4%), ETS¹ emissions decreased (-8.7%) and ESD emissions decreased (-3.0%), the first time all 3 category totals have decreased in the same year since 2013. However, since 2013, emissions in the ETS sector have decreased by 9.6% or 1.51 Mt CO₂eq whereas emissions under the ESD increased by 6.3% or 2.72 Mt CO₂eq. In 2019, emissions from electricity generation have decreased by 11% for the second year in a row, due to large decreases in the use of coal and peat in Ireland's power plants.

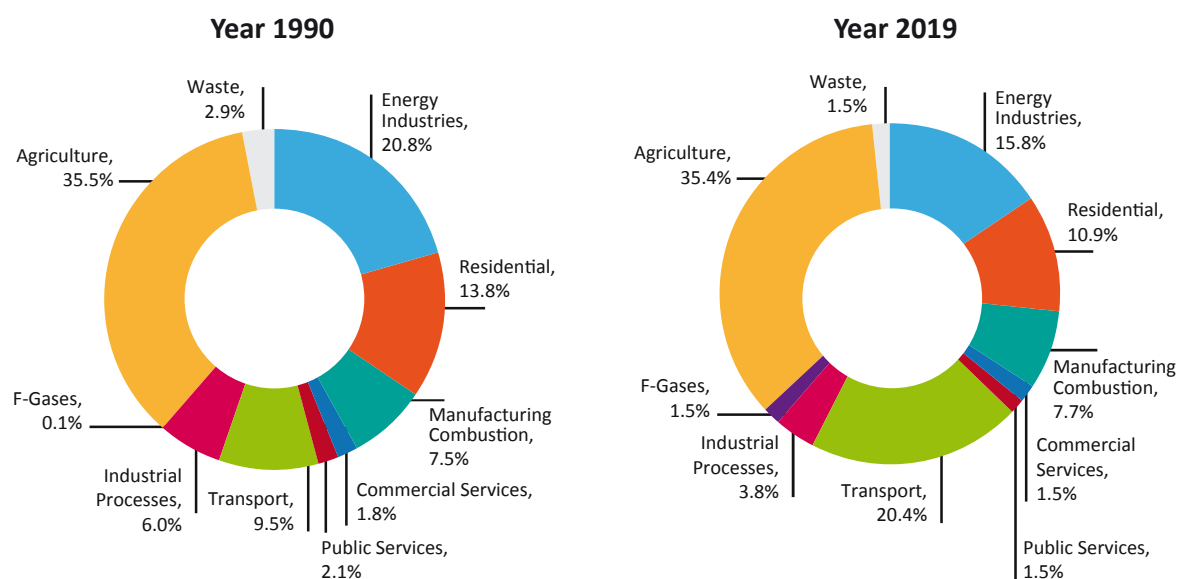
The inter-annual change in total greenhouse gas emissions is presented in Figure 1 and sectoral emissions in Figures 2 and 15. Detailed sectoral data are shown in Table 3.

Agriculture remains the single largest contributor to the overall emissions at 35.3% of the total. *Transport* and *Energy Industries* are the second and third largest contributors at 20.3% and 15.8% respectively. *Residential* and *Manufacturing Combustion* emissions account for 10.9% and 7.7% respectively. These five sectors accounted for 90% of national total emissions in 2019. The remainder is made up by the *Industrial Processes* at 3.8%, *F-Gases* at 1.8%, *Commercial Services* at 1.5%, *Public Services* at 1.5% and *Waste* at 1.5%. Figure 2 shows the contributions from each of the sectors in 1990 and 2019.

Figure 1. Inter annual changes in GHG emissions 1990-2019



¹ ETS emissions in this report refers to CO₂ emissions from stationary installations and from domestic aviation. It does not include emissions from intra-EU aviation as those are not considered part of Ireland's total reportable greenhouse gas emissions.

Figure 2. Profile of GHG Emissions in 1990 and 2019 by Sector

Methodology changes in the 1990-2019 Inventory

Changes are made each year to update and improve the underlying data and methods being used to estimate emissions. For this inventory submission, two important changes occurred, new energy statistics and a methodology update in the Agriculture sector. As is normal with significant emission inventory changes, where new data is used, the impact is estimated back to the first inventory year (1990) to ensure a consistent time-series.

Newly available source data was used to produce the Energy Balance by the SEAI, which impacted on most fuel consuming sectors. The new data included more accurate survey data on public sector energy use and the integration of data from the Central Statistics Office's "Business Energy Use" survey. The impact of this change was to alter the estimated sectoral fuel mix for some fuel types, affecting the emissions from the Residential, Commercial and Public and Manufacturing combustion sectors. The overall total fuel used in Ireland was unchanged, so this change only affected the breakdown of emissions.

In the Agriculture sector, significant updates were made to the bovine methane model used to estimate methane emissions from both enteric fermentation and manure management, in particular to the activity data assumptions behind it. These updates included new housing data, manure storage, slurry spreading, and animal feed data compiled by Teagasc and the Department of Agriculture. The changes have had different impacts on different years, with, for example, methane emissions in 1990 decreasing and those in 2018 increasing as a result. The overall accuracy of emissions estimates for recent years has been substantially improved with new knowledge in manure management and feeding practices.

3. Compliance with EU and international commitments

The greenhouse gas emission inventory for 2019 is the seventh year that compliance under the European Union's Effort Sharing Decision (Decision 406/2009/EC) will be assessed. This Decision sets 2020 targets for sectors outside of the Emissions Trading Scheme (known as ESD emissions) and annual binding limits for the period 2013-2020. Ireland's target is to reduce ESD emissions by 20% by 2020 compared with 2005 levels.

The final inventory reviews for the years up to 2018 were completed in August 2020, following the submission of official data in March 2020 to the European Commission. For the period 2013 to 2018 Ireland currently has a cumulative 1.56 Mt CO₂eq surplus annual emission allowances (AEAs), due to emissions being substantially below the annual allowance in the years 2013-2015, see Table 1 and Figure 3.

Ireland's annual limit for 2019 is 38.73 Mt CO₂eq. Ireland's final 2019 greenhouse gas ESD emissions are 45.58 Mt CO₂eq, 6.85 Mt CO₂eq more than the annual limit for 2019. This value is the national total emissions less emissions covered by the EU's emissions trading scheme for stationary and aviation operators. Agriculture and Transport accounted for 72.9% of total ESD emissions in 2019. This indicates that Ireland will not be in compliance with its 2019 Effort Sharing Decision annual limit, the fourth year in a row exceeding the assigned allowances. Ireland's final cumulative shortfall of allowances for the period 2013 to 2019 is 5.29 Mt CO₂eq.

Table 1. Compliance with EU ESD Targets 2013-2020 (all numbers in the table are rounded to the nearest kt CO₂eq)

	2013	2014	2015	2016	2017	2018	2019	2020
A Total greenhouse gas emissions without LULUCF	57,903	57,626	59,878	61,546	60,744	60,912	59,778	0.0
B NF ₃ emissions	0.9	1.0	1.0	1.0	1.3	1.3	1.4	0.0
C Total greenhouse gas emissions without LULUCF and without NF ₃ emissions	57,903	57,625	59,877	61,545	60,743	60,911	59,776	0.0
D Total verified emissions from stationary installations under Directive 2003/87/EC	15,686	15,953	16,830	17,737	16,896	15,515	14,179	0.0
E CO ₂ emissions from 1.A.3.a. domestic aviation	10	9	10	10	17	17	17	0.0
F Total ESD emissions (= C-D-E)	42,207	41,663	43,037	43,798	43,829	45,379	45,580	0.0
G EU ESD Targets	46,892	45,761	44,630	43,499	40,885	39,807	38,729	37,651
Distance to target (= F-G)	-4,685	-4,098	-1,593	299	2,944	5,571	6,851	

Note: Shaded cells show data that has been reviewed, and compliance agreed, by the European Commission under Article 19 of the MMR No. 525/2013

Figure 3. Compliance with ESD Targets 2013-2020

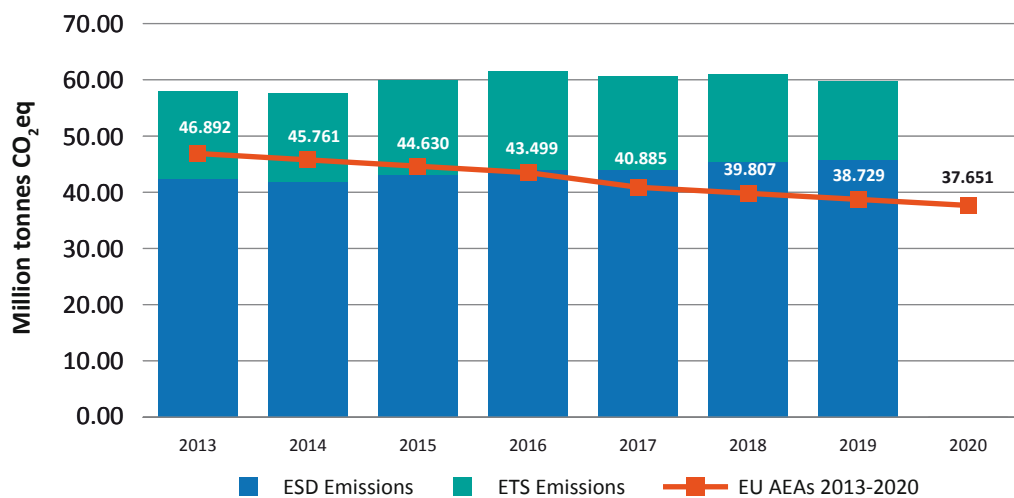
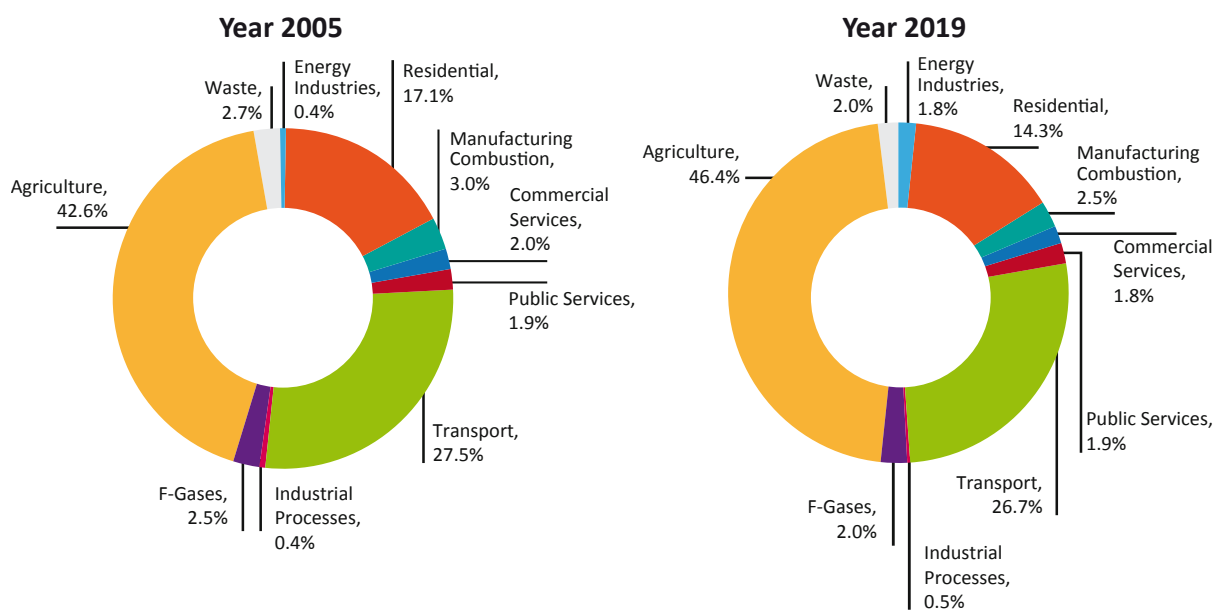


Figure 4. Profile of Effort Sharing Decision relevant GHG Emissions in 2005 and 2019 by Sector



4. Greenhouse gas emissions by sector

For the purposes of this report emissions are classified into nine key sectors and fluorinated gases (F-gases). Although F-gases can be emitted from any sector it is helpful to group them collectively as the emissions from any one sector are seldom significant, and measures to reduce them are often cross-sectoral in nature. The sectoral breakdown used in this report, and changes in emissions for those sectors between 2018 and 2019, are presented in Table 2 below and described in more detail in the Appendix.

This sectoral breakdown is produced for National reporting purposes and although generally in alignment with the classification used for UNFCCC reporting, some adjustments have been made for ease of comparison with national policies. Key energy sub categories; Energy Industries (largely power generation), Residential, Manufacturing Combustion, Transport, Commercial Services and Public Services are also shown separately rather than as part of an overarching Energy category as reported to the UNFCCC. In this section, the time series since 1990 is graphically presented, as 1990 is the historical base year used for UNFCCC and Kyoto Protocol reporting.

Table 2. Ireland's Final Greenhouse Gas Emissions for 2018 and 2019 by Sector

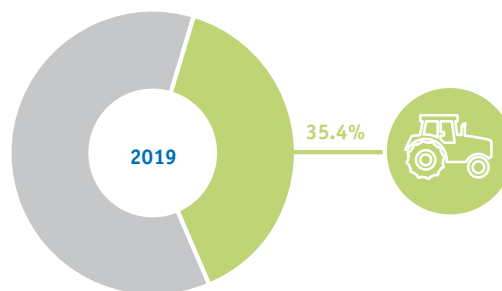
Million tonnes CO ₂ eq	2018	2019	% Change
Agriculture	22.031	21.148	-4.0%
Transport	12.237	12.200	-0.3%
Energy Industries	10.632	9.445	-11.2%
Residential	7.043	6.527	-7.3%
Manufacturing Combustion	4.685	4.589	-2.0%
Industrial Processes	2.298	2.268	-1.3%
F-Gases	0.938	0.916	-2.3%
Commercial Services	0.875	0.891	1.8%
Public Services	0.877	0.887	1.2%
Waste	0.909	0.905	-0.4%
Total	62.526	59.778	-4.4%

4.1 Agriculture

Methane emissions originate from Enteric Fermentation, Manure Management and fuel combustion. In 2019, CH₄ emissions contribute 67.0% to the Agriculture sector and have reduced by 2.6% since 2018.

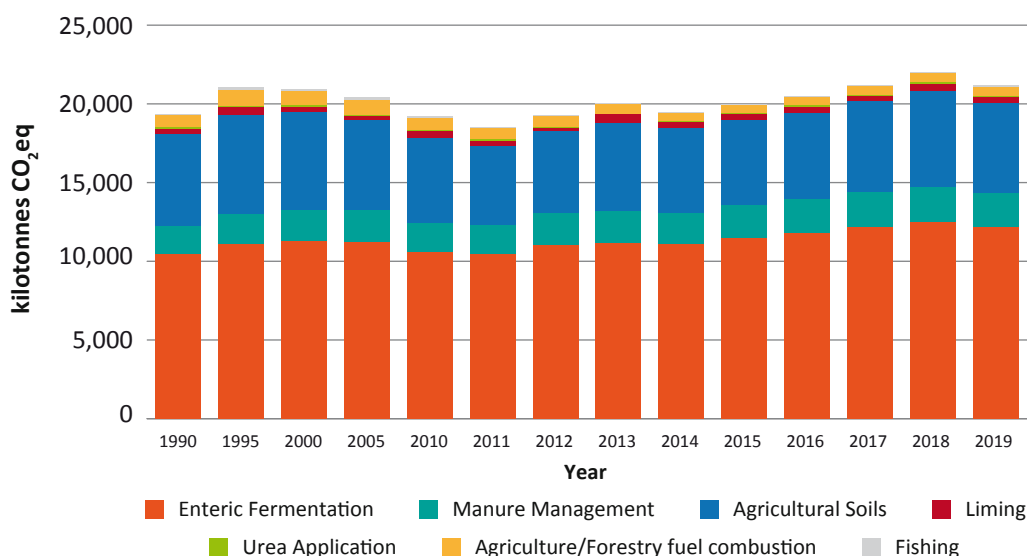
Nitrous Oxide emissions originate from Manure Management, Agricultural Soils and fuel combustion. In 2019, N₂O emissions contribute 30.9% to the Agriculture sector and have reduced 5.9% since 2018, primarily as a result of less nitrogen fertiliser use.

Carbon dioxide emissions originate from Liming, Urea Application and fuel combustion. In 2019, CO₂ emissions contribute 2.1% to the Agriculture sector and have reduced by 20.7% since 2018.



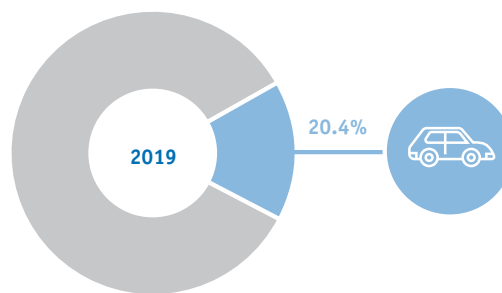
Agriculture emissions decreased by 4.0% or 0.88 Mt CO₂eq in 2019 following an increase in 2018 of 3.9%. The most significant drivers for the decreased emissions in 2019 were reductions of synthetic nitrogen fertiliser use of 10.1% and in liming of soils by 25.4%. This follows substantial increases in both fertiliser and lime use in 2018. It is worth noting that Agricultural emissions in 2018 were the highest in the 30-year time series. The national dairy herd continued to increase in 2019 (9 consecutive years), with higher dairy cow numbers of 2.8% with an increase in milk production of 5.3%. In 2019, other cattle and sheep numbers decreased by 3.0% and 1.5% respectively, whereas pig and poultry numbers increased by 1.1% and 4.6% respectively. Total fossil fuel consumption in agriculture/forestry/fishing activities decreased by 1.7% in 2019.

Figure 5. Trend in Agriculture 1990-2019



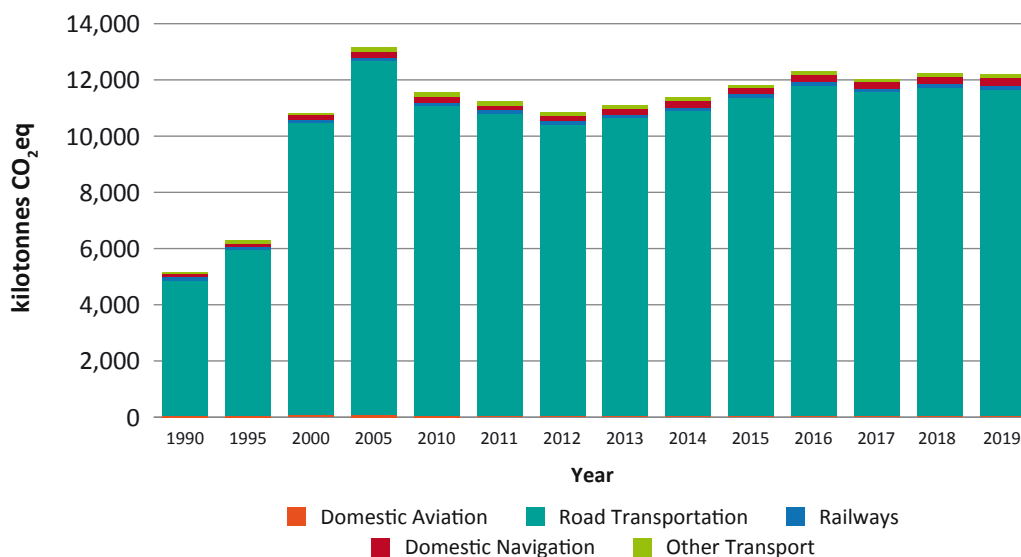
4.2 Transport

Transport emissions decreased slightly by 0.3% in 2019 or 0.04 Mt CO₂eq. Emissions from road transport have remained relatively stable for the last 4 years, at an average 11.6 Mt CO₂eq. Total energy consumption in road transport increased by 0.2% in 2019; petrol, -5.8%, diesel +0.8%, bioethanol -4.0% and biodiesel +27.5%. The increased biodiesel usage reflects the increase in the biofuel obligation from 8% to 10% with effect from 1st January 2019. Looking at the underlying drivers, the number of passenger diesel cars increased by 7.1% in 2019 while the number of passenger petrol cars decreased by 1.9%, commercial vehicle numbers increased by 3.2% and employment grew by 3.5% between Q4 2018 and Q4 2019.



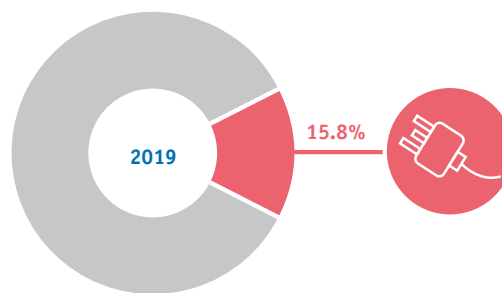
Transport emissions in 2019 were still 15.3% below peak levels in 2007 primarily due to the economic downturn, but also due to improving vehicle fuel efficiency, the increased use of biofuels and a significant decrease in fuel tourism in recent years. Passenger cars were responsible for 57% of road transport emissions in 2019, with Light Goods Vehicles responsible for 15% and Buses and Heavy Goods Vehicles responsible for 27%. The impact of Electric Vehicles in reducing Transport emissions is still very low given the low number in the vehicle fleet but they are projected to contribute substantially to emissions reductions towards the latter half of the 2020s.

Figure 6. Trend in Transport 1990-2019



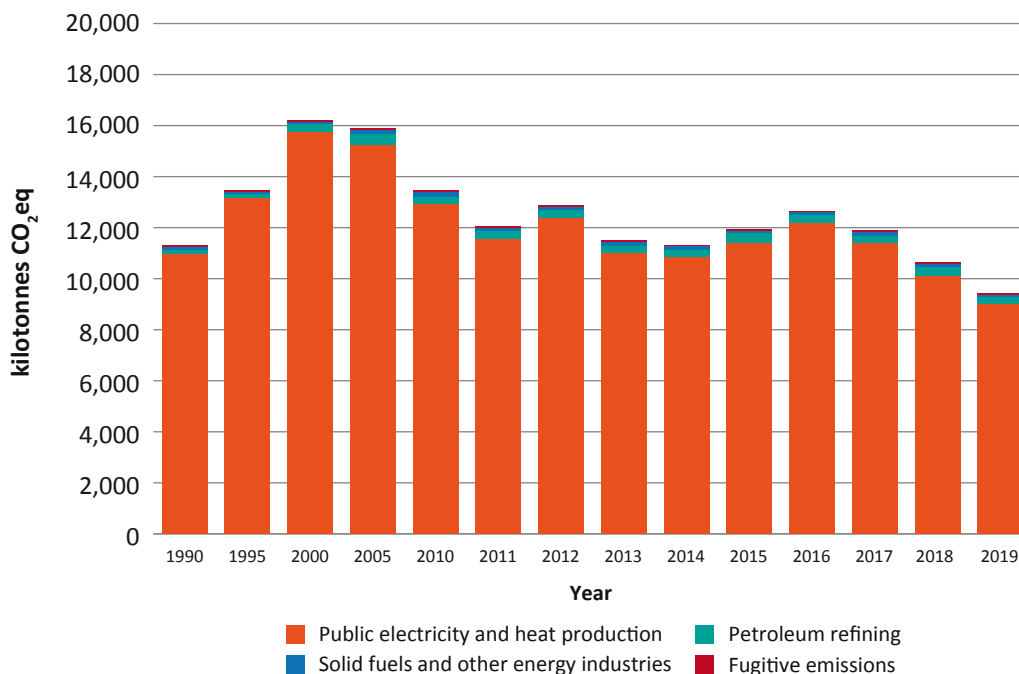
4.3 Energy Industries

Sectoral emissions in the Energy Industries sector show a decrease of 11.2% in 2019 which is attributable to decreases in consumption of coal and peat by 69% and 8.0% respectively, whilst there was an increase in oil of 128.3% and a decrease in biomass of 1.9% respectively for electricity generated. In 2019, electricity generated from wind and hydro increased by 16.0% and 27.7% respectively, reflected in a 13.6% decrease in the emissions intensity of power generation in 2019 (325 g CO₂/kWh) compared with 2018 (375 g CO₂/kWh) which is a new low in terms of carbon intensity. Renewables now account for 37.6% of electricity generated in 2019 (up from 33.0% in 2018) also a new high.



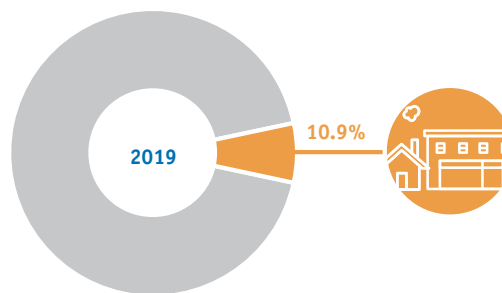
In the last 3 years, emissions have decreased by over 3.2 Mt CO₂eq due to a reduced use of coal and peat and an increased use of natural gas and renewables in electricity generation. Announcements made by the ESB and Bord na Móna to phase out coal and peat respectively, indicate that we can expect this emission saving to be maintained into the future. The emission categories relevant under Energy Industries are: Public electricity and heat production, Petroleum refining, Manufacture of solid fuels and other energy industries.

Figure 7. Trend in Energy Industries 1990-2019



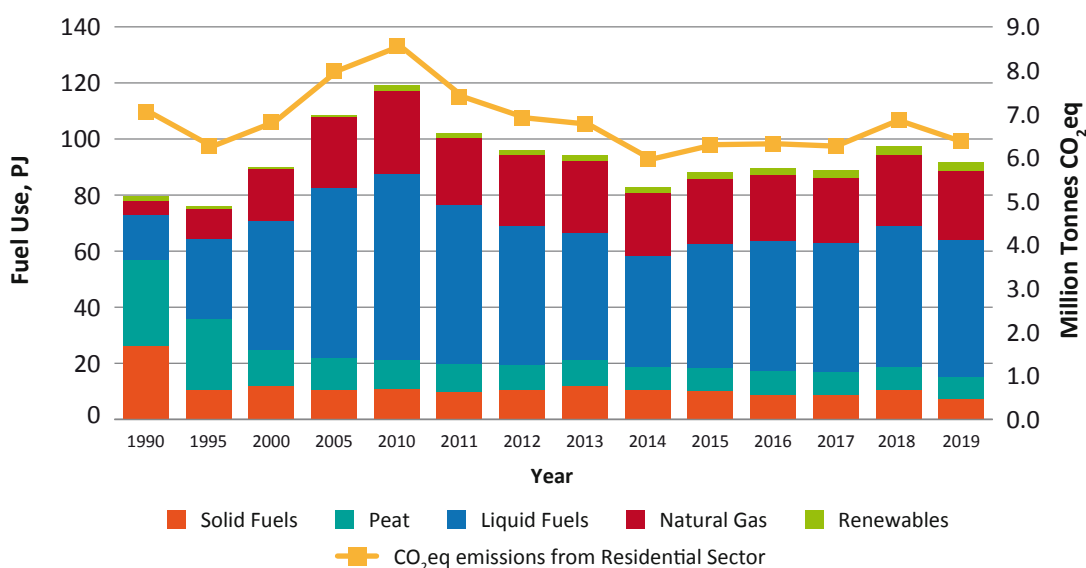
4.4 Residential

Emissions in the *Residential* sector decreased by 7.3% or 0.52 Mt of CO₂eq in 2019. Within the different fuels used in household space and water heating, all fuels showed decreases; coal, peat, LPG, kerosene, natural gas and biomass decreased by 28.6%, 6.6%, 7.1%, 4.2%, 2.1% and 18.0% respectively in 2019. There were 3.8% fewer degree days in 2019, with 24 of 25 weather stations showing fewer degree days² especially during the months January to April 2019.

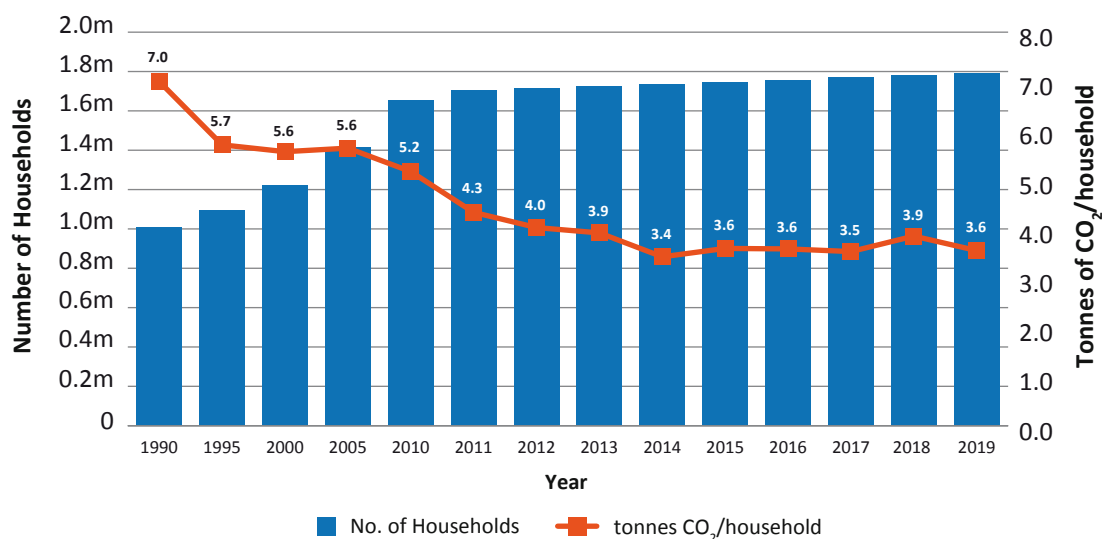


Since 2014, fuel use by household has increased by 7.2% with CO₂ emissions per household increasing from 3.4 t CO₂ to 3.6 t CO₂ in 2019. While weather is a key variable from year to year, the flattening of the historic downward trend in per household CO₂ emissions evident in Figure 9, indicates a need for increased energy efficiency retrofit activity in order to achieve future emissions reduction commitments.

Figure 8. Trend in Residential 1990-2019



² Degree days are a measure of the heating or cooling requirement on a given day with reference to a level where neither is required (typically 15.5o C). The number of degree days in a year is a strong indicator of the annual Residential energy demand.

Figure 9. CO₂ Emissions per Household 1990-2019

4.5 Manufacturing and Industry

Emissions relating to *Manufacturing Combustion* and *Industrial Processes* combined accounted for 11.5% of Ireland's total emissions in 2019.

Emissions from the *Manufacturing Combustion* sector decreased by 2.0% or 0.10 Mt CO₂e in 2019. There were decreases in combustion emissions from major sub sectors including food and drink and non-metallic minerals (includes cement) which decreased by 7.5% and 3.3% respectively in 2019. Decreased emissions from companies within the ETS were evident in the Non-ferrous metals, Chemicals, Food Processing Beverages and Tobacco, Non-Metallic Minerals (including cement) sectors, with emissions decreasing by 1.1%, 4.0%, 1.6% and 3.6% respectively.

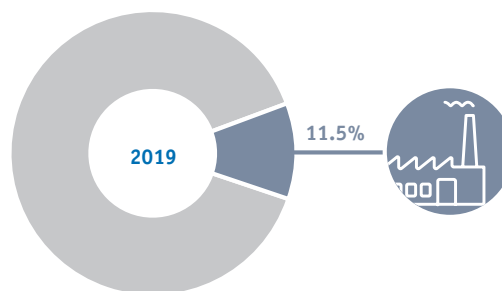
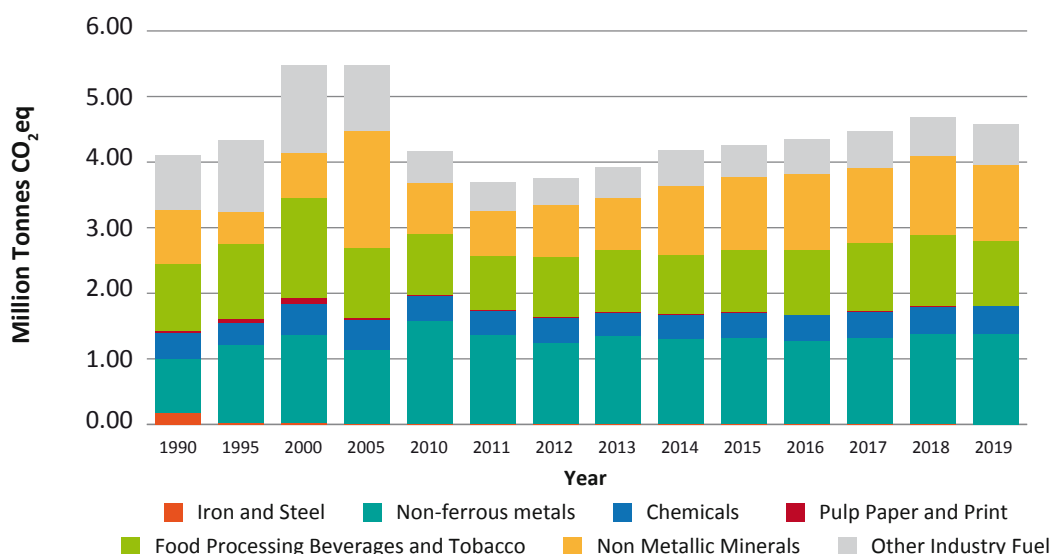


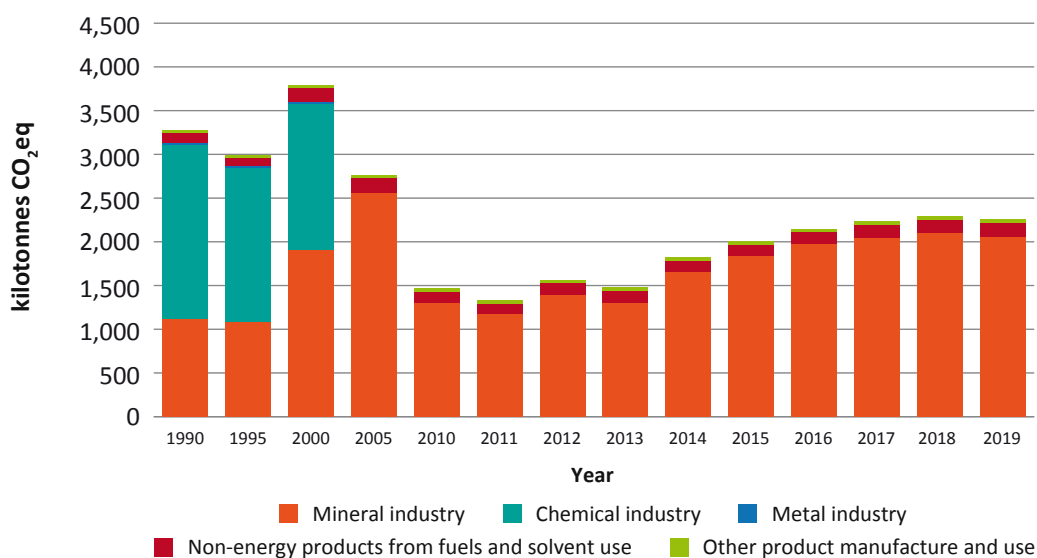
Figure 10. Trend in Manufacturing Combustion 1990-2019



Emissions from the *Industrial Processes* sector decreased by 1.3% (0.03 Mt CO₂eq) in 2019 following a 2.5% increase in 2018. The yearly decrease is due to a reduction in cement production. Total process emissions from the mineral products subsector (including cement) decreased by 1.8%.

In 2019, total emissions (combustion and process) from the cement sector decreased by 2.0% and amount to 2.85 Mt CO₂eq, or 4.8% of national total emissions. This is the first decline in the sector's emissions since 2013. Cement sector emissions are now 87.3% higher than the 2011 low during the economic recession.

Figure 11. Trend in Industrial Processes 1990-2019

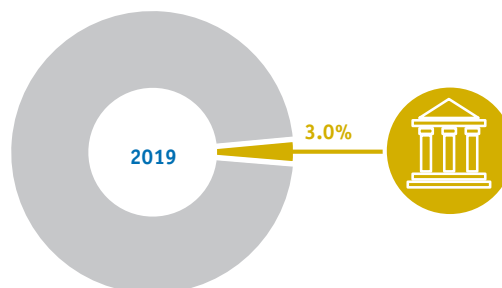


4.6 Other Sectors

Emissions from *F-Gases*, *Commercial Services*, *Publics Services* and *Waste* account for 6.0% of total national emissions in 2019.

Commercial and Public Services

Emissions from *Commercial Services* and *Public Services* both increased by 1.8% and 1.2% respectively, with increases of 2.1% in natural gas use in both sectors in 2019. There was a decrease in renewables use of 13.7% in public services.

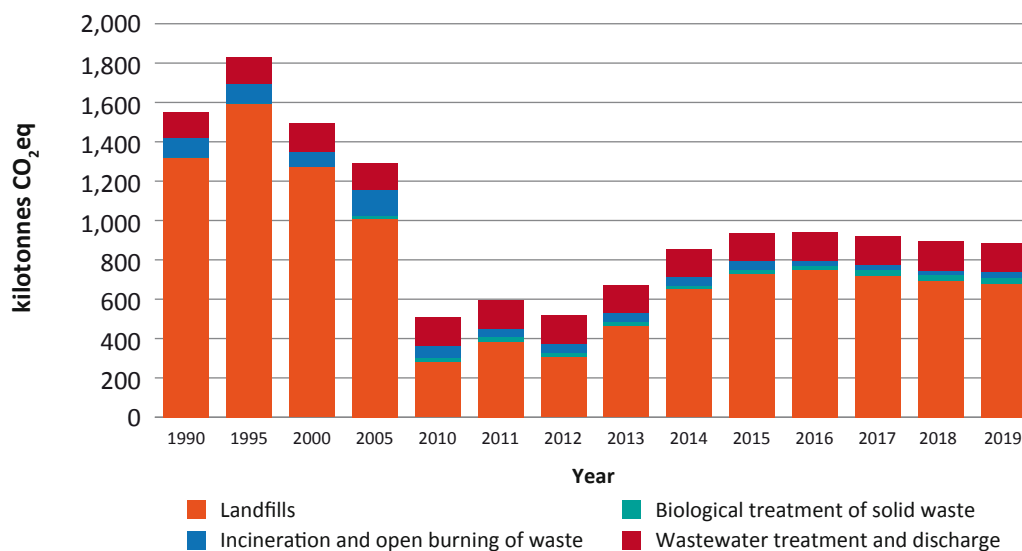


Waste

Emissions from the *Waste* sector decreased by 0.4% in 2019, with a decrease in sub category; landfills of 2.3%. Overall emissions decreased by 0.004 Mt CO₂eq.

Long-term decreases are a result of decreased quantities of municipal solid wastes (MSW) disposed of at landfills and a decrease in the proportion of organic materials (food and garden waste) in MSW as well as a diversion of paper products from landfills. Improved management of landfill facilities, including increased recovery of landfill gas utilised for electricity generation and flaring is also a big driver in decreased emissions from the waste sector.

Figure 12. Trend in Waste 1990-2019

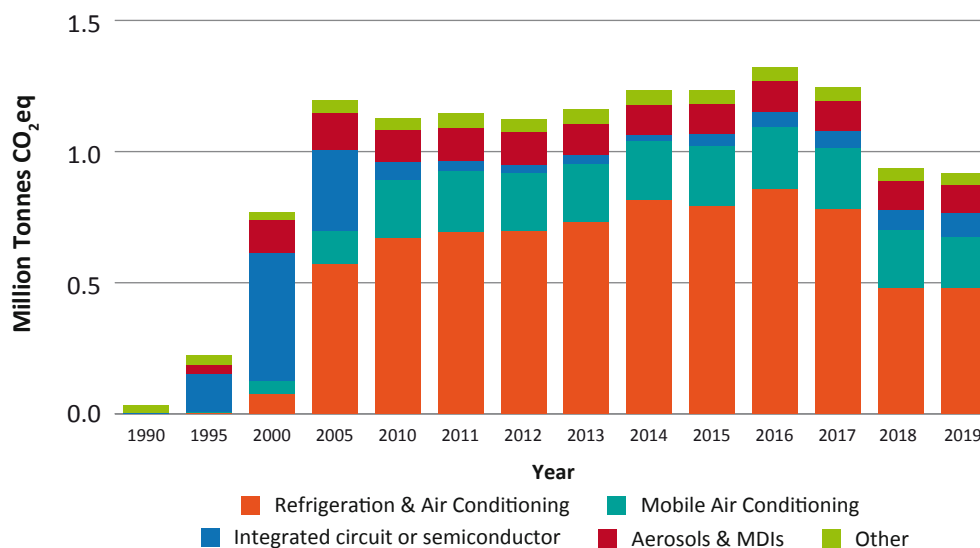


Fluorinated Gas Emissions

F-Gas emissions were down 2.3% from 2018 to 2019, following a decrease of 24.8% in 2018. This is driven by a reduction in refrigeration and air conditioning emissions. Emissions of F-gases (HFCs, PFCs, SF₆ and NF₃) were 0.92 Mt CO₂eq in 2019 compared to 34.6 kt CO₂eq in 1990, a 26-fold increase over the time series, see Figure 13. However, F-gas emissions have risen from a very low base and only accounted for 1.5 per cent of the national total in 2019. F-gases include a wide range of substances that are used in a diverse range of products and manufacturing processes.

The main causative factor behind the more recent decreases in F-gas emissions has been the phasing out of refrigerant and air conditioning (AC) gases with high global warming potentials (GWPs), due to the implementation of the F-Gas Regulation (EU) No. 517/2014. These refrigerant gases are being replaced with products containing a blend of HFCs and hydrofluoroolefins (HFOs) with low GWPs in sub category, Refrigeration and Air Conditioning.

Figure 13. Composition and Trend in F-Gas Emissions 1990-2019



5. International Aviation and Maritime Emissions

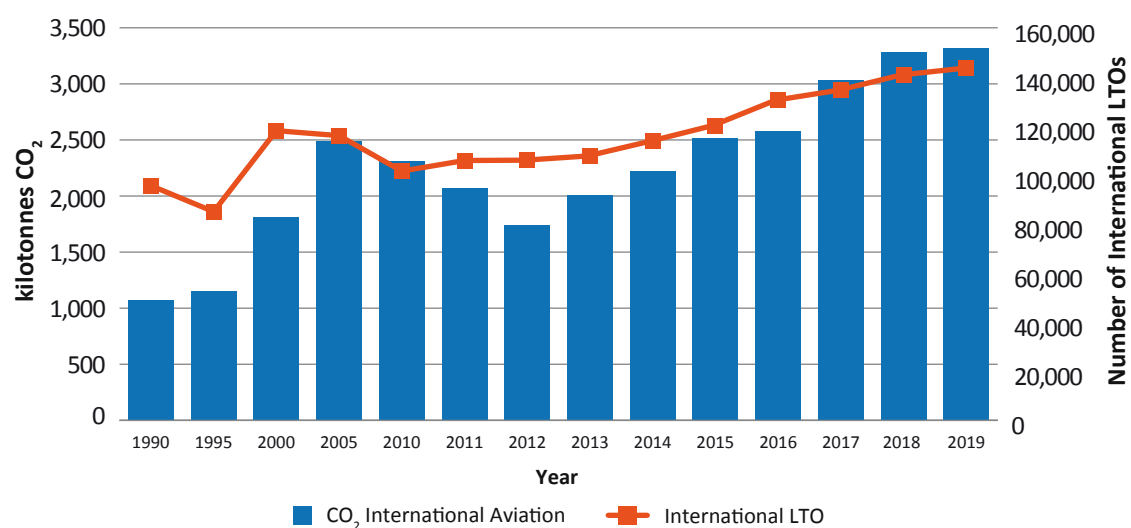
Emissions from international aviation and maritime navigation are reported as “memo items” in the national emission inventory. This means they are not counted as part of Ireland’s national total emissions but are reported by Ireland to the UNFCCC and EU for information purposes. A substantial proportion of Ireland’s international aviation emissions is included in the EU ETS, such as all intra EU flights and flights within the European Economic Area (EEA). In 2019, total international aviation contributed 3.32 Mt of CO₂ from over 143,500 return flights from Irish airports, see Figure 14. The other major destinations for Irish passengers are flights to North America which amounted to approximately 13,000 return flights in 2019 with CO₂ emissions of 1.4 Mt. International flights to North America contribute more CO₂ per flight due to the large cruise distances involved.

In recent years, CO₂ emissions from international aviation have increased very rapidly and it is therefore important that they are closely monitored for comparison with other sources and for the benefit of the international organisations that will have to develop control strategies for them in the future.

In the last 3-year period, 2017 to 2019, emissions from international aviation averaged at 3.21 Mt of CO₂ the highest emissions since 2007. The allocation of jet kerosene use to international aviation (bunker fuel) is done by subtracting jet kerosene used in civil aviation from total jet kerosene fuel sales compiled by SEAI. In 2019, the amount of jet kerosene fuel allocated to domestic aviation was 0.47 per cent of the total recorded under air transport in the energy balance.

International marine navigation is another important source of emissions that is also excluded from Ireland’s national total emissions and any EU or UN reduction commitments. In 2019, emissions from this source amounted to 0.44 Mt of CO₂eq down from 0.50 Mt of CO₂eq in 2018.

Figure 14. Trend in International Aviation 1990-2019



6. Long-term Changes in Sectoral Emissions 1990-2019

As 1990 is the historical base year used by most countries in relation to UNFCCC and Kyoto Protocol reporting, it is instructive to look at how emissions have evolved over the longer timeframe from 1990 to the present. The share of CO₂ in total greenhouse gas emissions has increased to 62.4% of total greenhouse gas emissions in 2019 compared to 60.6% in 1990. The share of CH₄ and N₂O emissions, primarily from the agriculture sector, have fallen from 39.4% of total greenhouse gas emissions in 1990 to 36.1% in 2019 as emissions (primarily CO₂) from other sectors grew at a faster rate. Emissions from F-gases account for 1.5% of the total in 2019. The trend in emissions from 1990 to 2019 is shown in Figures 15 and 16 and Table 3 in the Appendix.

Between 1990 and 2019, Transport shows the greatest overall increase of GHG emissions at 137.0%, from 5,148.4 kt CO₂eq in 1990 to 12,199.8 kt CO₂eq in 2019, with road transport increasing by 142.6%. Fuel combustion emissions from Transport accounted for 9.5 per cent and 20.4 per cent of total national greenhouse gas emissions in 1990 and 2019, respectively. The increase in emissions up to 2007 can be attributed to general economic prosperity and increasing population, with a high reliance on private car travel as well as rapidly increasing road freight transport.

Energy Industries show a decrease in emissions of 16.6% over the period 1990 to 2019. Over the time series, emissions from electricity generation have decreased by 18.0% whereas total electricity consumption has increased by 136.4%. Emissions from electricity generation increased from 1990 to 2001 by 54.2% and have decreased by 46.8% between 2001 and 2019. This decrease reflects the improvement in efficiency of modern gas fired power plants replacing older peat and oil-fired plants and the increased share of renewables, primarily, wind power along with increased interconnectivity. This year was the lowest year in the 30-year time series for coal fired electricity generation, 69% less than in 2018, and the lowest year in the last 15 years for peat fired electricity, 8% less than 2018. These reductions reflect the gradual ending of coal and peat fired electricity generation for market and climate policy reasons.

The latest estimates show that total emissions in the Agriculture sector have increased by 9.4% from 1990 to 2019 mainly driven by a 16.1% increase in methane emissions from enteric fermentation and a 22.1% increase in emissions from manure management. After initially showing a rising trend in emissions in the 1990s, the Agriculture sectoral emissions began to decrease steadily between 1998 until 2011. However, since 2011, emissions have trended upwards again with an overall peak in emissions reported in 2018. Meanwhile, total fossil fuel combustion emissions from agriculture/forestry/fishing activities have decreased by 18.3% since 1990. In the last 10 years, dairy cow numbers have increased by 38.3% with a corresponding milk production increase of 66.9%. This reflects national plans to expand milk production under Food Wise 2025 and the removal of the milk quota in 2015.

Increased housing stock drove the gradual upward trend in the emissions from the Residential sector after 1997 following emission reductions in the early 1990s due to fuel switching to reach a peak in 2008. The 2019 emissions in this sector are 7.3% lower than 2018 levels and are 13.2% lower than their 1990 level, whereas the housing stock increased by 77.7% between 1990 and 2019. Winter heating demand is the most important variable determining emissions from this sector.

Figure 15. GHG Emissions by Gas 1990-2019

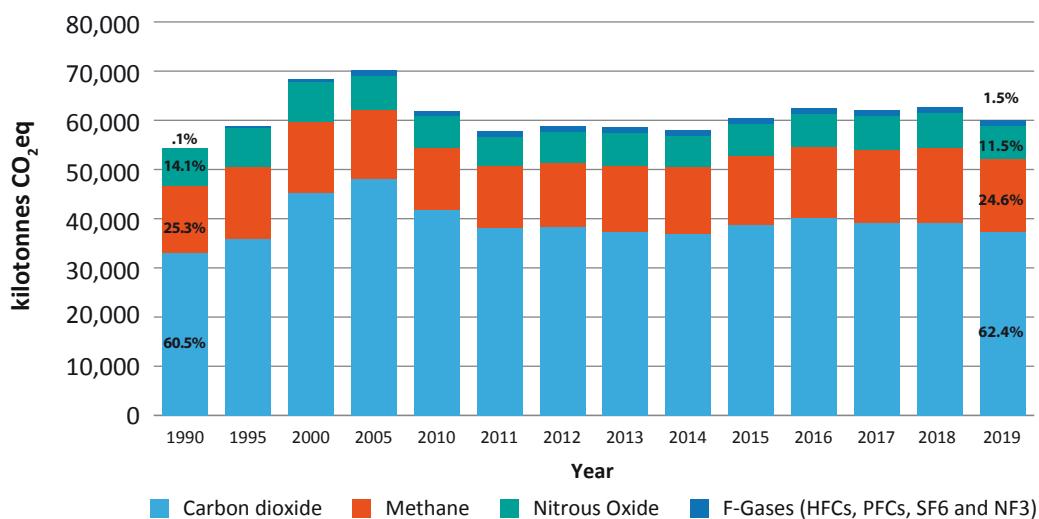
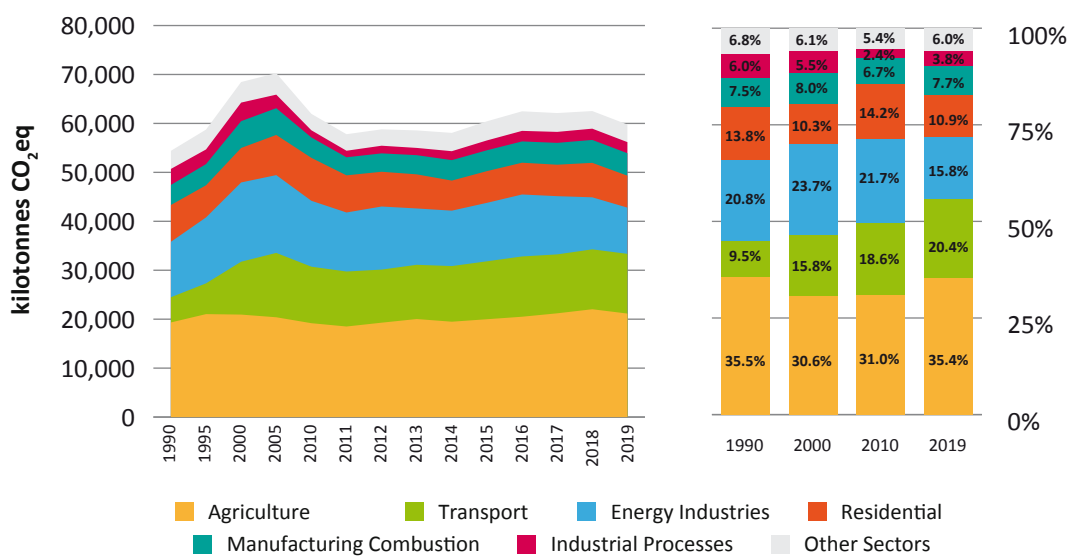


Figure 16. Trend in Emissions for Largest Sectors 1990-2019



7. Conclusion

Greenhouse gas emissions data for 2019 illustrate that when the right measures are taken it can be effective in reducing emissions. Greenhouse gas emissions decreased by 4.4% in 2019 compared to 2018 despite modest growth in the domestic economy of 1.7% over the same period³. The reduction in emissions associated with electricity generation is particularly welcome as it will also allow other sectors to decarbonise in time, as they increasingly look to electricity as an energy source.

Significant challenges remain however. The emissions savings achieved by not burning coal can only be realised once, whereas the 2019 Climate Action Plan committed to almost 3% annual emissions reductions throughout the 2020s, and the more recent Programme for Government has committed to 7% annually over the same period. Transport emissions fell very slightly in 2019, despite the increase in biofuel blend rates, and electric vehicle uptake currently remains at a very low level.

In relation to the built-environment, while the fall in Residential emissions can be attributed largely to a warmer winter, there was also evidence of a further switch away from solid fuels, a trend that is encouraging. However, the overall emissions per household have remained at a very similar level (allowing for weather) over the last 5 years, indicating the need for significant further efforts on energy efficiency. The trend in Commercial and Public services emissions unfortunately didn't follow the same path as Residential emissions in 2019 with increases in both sectors.

Agriculture emissions, while decreasing by a not insignificant amount in 2019, did so primarily as a result of a reduction in fertiliser use and liming, which had both increased significantly in the previous year. There is as yet no firm indication that the 2019 trend is likely to result in a sustained long term decrease in Agriculture emissions, particularly given that dairy cow numbers continued to rise in 2019.

Overall, the reduction in emissions in 2019 is a positive step in the right direction, with evidence of a clear shift away from coal and peat in power generation, something which the operators have committed to sustaining in the future. 2020 is also likely to see a further reduction in emissions, driven this time by the impact of the COVID-19 pandemic across all sectors of the economy.

The future challenge for Ireland is therefore to sustain a positive start towards emissions reductions throughout the 2020's, with measures that decouple growth in the economy from growth in greenhouse gas emissions. A 'green recovery' from the current recession caused by the pandemic can fundamentally alter the emissions pathway for Ireland and allow us to achieve our Climate Action Plan and EU targets, while ensuring Ireland does its part to limit dangerous warming globally.

3 Using the CSO's Modified Gross National Income (GNI*) measure as emissions are generated by domestic activity. <https://www.cso.ie/en/releasesandpublications/ep/p-nie/nie2019/mgni/>

Appendix – Additional Tables and Background Notes

Table 3. Ireland's Final GHG Emissions by Sector 1990-2019 (kilotonnes CO₂ equivalent)

1990-2019 Submission 2021 Final	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Share 2019	Annual change
Energy Industries	11327.55	13476.50	16196.99	15899.44	13467.20	12059.64	12888.18	11510.29	11323.89	11948.11	12662.80	11898.66	10632.48	9445.25	15.8%	-16.6%
Public electricity and heat production	10953.92	13132.91	15754.35	15244.75	12895.10	11557.10	12350.20	10977.54	10837.73	11400.97	12149.48	11379.09	10110.55	8984.97	15.0%	-18.0%
Petroleum refining	168.67	181.27	274.80	411.87	310.47	285.49	313.64	294.56	279.48	358.73	313.57	311.19	322.19	275.09	0.5%	63.1%
Solid fuels and other energy industries	100.54	69.44	87.15	171.89	174.66	137.46	146.29	162.01	134.84	115.75	126.26	129.41	119.33	107.93	0.2%	7.4%
Fugitive emissions	104.42	92.87	80.69	70.93	86.96	79.60	78.06	76.18	71.84	72.65	73.49	78.97	80.41	77.25	0.1%	-26.0%
Residential	7521.29	6565.09	7046.70	8202.62	8771.98	7590.04	7102.24	6969.01	6143.90	6480.50	6489.74	6428.90	7042.89	6527.18	10.9%	-13.2%
Manufacturing Combustion	4097.82	4331.30	5479.79	5471.81	4164.50	3689.88	3757.13	3920.63	4179.13	4261.12	4352.26	4461.78	4684.92	4589.20	7.7%	12.0%
Commercial Services	994.85	1063.38	1020.17	1010.25	801.88	833.69	859.55	870.93	777.18	856.98	824.79	835.76	875.38	891.48	1.5%	-10.4%
Public Services	1115.26	941.82	922.77	886.26	892.83	776.61	819.45	851.24	847.13	860.35	889.24	826.79	877.02	887.34	1.5%	-20.4%
Transport	5148.44	6280.34	10802.31	13147.97	11545.36	11235.63	10847.13	11081.88	11365.83	11833.68	12316.46	12036.99	12236.99	12199.80	20.4%	137.0%
Domestic aviation	48.40	45.73	69.64	80.21	49.51	24.65	14.99	15.37	14.69	15.55	16.78	17.45	16.78	17.64	0.0%	-63.6%
Road transportation	4792.01	5892.79	10380.35	12567.00	10998.16	10750.31	10377.96	10610.47	10860.11	11336.38	11772.67	11528.11	11689.42	11624.50	19.4%	142.6%
Railways	148.87	124.51	137.65	136.58	136.31	136.52	131.93	131.38	120.53	122.83	125.10	129.14	130.49	136.55	0.2%	-8.3%
Domestic navigation	85.77	92.10	152.65	211.19	200.12	173.73	183.60	179.59	224.81	221.73	266.46	235.28	260.23	277.16	0.5%	223.1%
Other transportation	73.39	125.19	62.02	153.00	161.26	150.42	138.66	145.07	145.69	137.19	135.45	127.01	140.07	143.95	0.2%	96.1%
Industrial Processes	3274.57	2991.09	3789.65	2765.56	1466.88	1337.01	1564.12	1480.83	1825.85	2010.90	2154.14	2242.03	2298.37	2267.56	3.8%	-30.8%
Mineral industry	1116.73	1084.18	1908.78	2552.80	1299.05	1167.27	1391.97	1301.70	1650.45	1830.36	1968.40	2039.86	2094.55	2057.67	3.4%	84.3%
Chemical industry	1985.55	1754.44	1663.30	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

1990-2019 Submission 2021 Final	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Share 2019	Annual change
Metal industry	26.08	24.80	28.80	36.96	40.72	40.90	40.99	41.06	41.21	41.44	42.57	42.77	42.98	44.00	0.1%	40.4%
Non-energy products from fuels and solvent use	114.87	95.48	154.89	175.80	127.12	128.84	131.16	138.07	134.19	139.10	143.17	159.40	160.85	165.89	0.3%	44.4%
Other product manufacture and use	31.34	32.20	33.88	36.96	40.72	40.90	40.99	41.06	41.21	41.44	42.57	42.77	42.98	44.00	0.1%	40.4%
F-Gases	34.59	226.33	768.66	1197.06	1127.81	1145.63	1122.70	1159.10	1231.93	1235.44	1320.54	1246.32	937.61	916.47	1.5%	2549.4%
Agriculture	19333.88	21035.87	20938.90	20391.41	19179.60	18503.51	19284.93	20030.29	19484.62	19990.94	20500.31	21198.94	22031.50	21148.50	35.4%	9.4%
Enteric fermentation	10466.07	11085.93	11295.77	11217.33	10554.67	10419.33	11043.03	11144.52	11063.69	11463.66	11789.94	12182.62	12464.64	12151.21	20.3%	16.1%
Manure management	1777.13	1897.19	1954.92	1986.79	1873.38	1870.55	2022.78	2029.56	1984.21	2067.75	2128.05	2190.60	2260.76	2169.28	3.6%	22.1%
Agricultural soils	5820.50	6305.21	6206.98	5761.17	5395.71	4997.67	5185.60	5619.15	5382.52	5414.07	5469.12	5777.84	6075.94	5723.32	9.6%	-1.7%
Liming	355.04	494.60	366.38	266.73	427.93	360.68	229.40	515.69	391.07	401.15	433.60	332.75	461.06	343.90	0.6%	-3.1%
Urea application	96.68	86.27	91.84	60.81	98.24	70.27	46.35	47.09	54.55	64.27	79.11	83.99	88.76	91.98	0.2%	-4.9%
Agriculture/Forestry fuel combustion	730.62	1008.11	909.76	953.63	753.49	721.93	687.92	596.55	534.52	514.94	540.70	560.34	595.84	595.84	1.0%	-18.4%
Fishing	87.85	158.55	113.24	144.94	76.18	63.10	69.85	77.73	74.06	65.11	59.79	70.80	84.51	72.96	0.1%	-16.9%
Waste	1552.05	1829.18	1492.77	1291.97	531.37	621.94	539.70	696.37	883.10	953.92	964.85	938.69	908.85	904.85	1.5%	-41.7%
Landfills	1318.08	1592.76	1268.16	1007.00	278.65	381.56	302.79	460.97	648.10	726.93	749.56	717.91	692.71	676.88	1.1%	-48.6%
Biological treatment of solid waste	0.00	0.00	0.00	13.77	46.17	52.42	44.82	46.48	47.39	38.28	43.13	45.17	44.37	44.37	0.1%	0.1%
Incineration and open burning of waste	97.74	100.59	79.51	132.48	62.09	45.00	48.32	45.16	41.68	42.43	25.04	27.46	23.91	32.53	0.1%	-66.7%
Wastewater treatment and discharge	136.24	135.83	145.10	138.72	144.46	142.96	143.77	143.76	145.93	146.29	147.12	148.15	147.87	151.08	0.3%	10.9%
National Total	54400.32	58740.88	68458.71	70264.34	61949.41	57793.58	58785.14	58570.58	58062.57	60431.95	62475.14	62114.86	62526.01	59777.64	100.0%	9.9%

Background Notes

Units: 1 Mt = 1,000 kilotonnes

CO₂ Equivalent: greenhouse gases other than CO₂ (i.e. methane, nitrous oxide and F-gases) may be converted to CO₂ equivalent using their global warming potentials (GWPs).

F-gases: These gases comprise HFCs (Hydrofluorocarbons), PFCs (Perfluorocarbons), SF₆ (Sulphur Hexafluoride) and NF₃ (Nitrogen Trifluoride). They are much more potent than the naturally occurring greenhouse gas emissions (carbon dioxide, methane and nitrous oxide).

GWPs:

Industrial designation or common name	Chemical formula	GWP for 100-year time horizon IPCC 4 th assessment report (AR4)
Carbon dioxide	CO ₂	1
Methane	CH ₄	25
Nitrous oxide	N ₂ O	298
Hydrofluorocarbons	HFCs	12 to 14,800
Perfluorinated compounds	PFCs	7,390 to >17,340
Sulphur hexafluoride	SF ₆	22,800
Nitrogen trifluoride	NF ₃	17,200

Ireland's GHG Sectors: include the following ten sectors for analysis;

1. Energy Industries (electricity generation, waste to energy incineration, oil refining, briquetting manufacture and fugitive emissions)
2. Residential (combustion for domestic space and hot water heating)
3. Manufacturing Combustion (combustion of fuels for heating, steam generation and powering machinery)
4. Commercial Services (combustion for Commercial Services space and hot water heating)
5. Public Services (combustion for Public services space and hot water heating)
6. Transport (combustion of fuel used in road, rail, navigation, domestic aviation and pipeline gas transport)
7. Industrial Processes (process emissions from mineral, chemical, metal industries, non-energy products and solvents)
8. F-Gases (gases used in refrigeration, air conditioning and semiconductor manufacture)
9. Agriculture (emissions from fertiliser application, ruminant digestion, manure management, agricultural soils and fuel used in agriculture/forestry/fishing)
10. Waste (emissions from solid waste disposal on land, solid waste treatment (composting), wastewater treatment, waste incineration and open burning of waste).

An Gníomhaireacht Um Chaomhnú Comhshaoil

Tá an GCC freagrach as an gcomhshaoil a chosaint agus a fheabhsú, mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaoil 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 ardchaighdeán, spriocdhíríte 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 peitрил 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.

FORFHEIDHMÍÚ 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 chomhshaoil.

BAINISTÍOCHT DRAMHAÍOLA AGUS CEIMICEÁIN SA CHOMHSHAOIL

- 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 Gníomhú ar son na hAeráide;

- Tacú le gníomhaíochtaí forbartha Náisiúnta, AE agus NA um Eolaíocht agus Beartas Aeráide.

MONATÓIREACHT & MEASÚNÚ AR AN GCOMHSHAOIL

- Córais náisiúnta um monatóireacht an chomhshaoil a cheapadh agus a chur i bhfeidhm: teicneolaíocht, bainistíocht sonraí, anailís agus réamhaisnéisiú;
- Tuairiscí ar Staid Timpeallacht 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 chomhshaoil 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.

COSAINN 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 comhshaoil agus raideolaíoch a chur ar fáil, chomh maith le taighde, comhordú agus cinnteoireacht bunaithe ar an eolaíocht.

BAINISTÍOCHT AGUS STRUCHTÚR NA GNÍOMHAIREACHTA UM CHAOMHNÚ COMHSHAOIL

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

- An Oifig um 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 Gníomhaireacht agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

