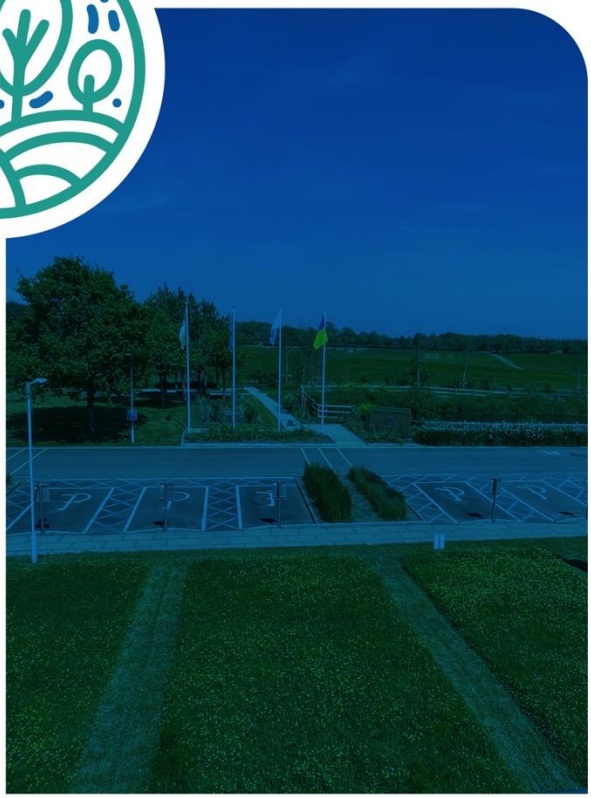
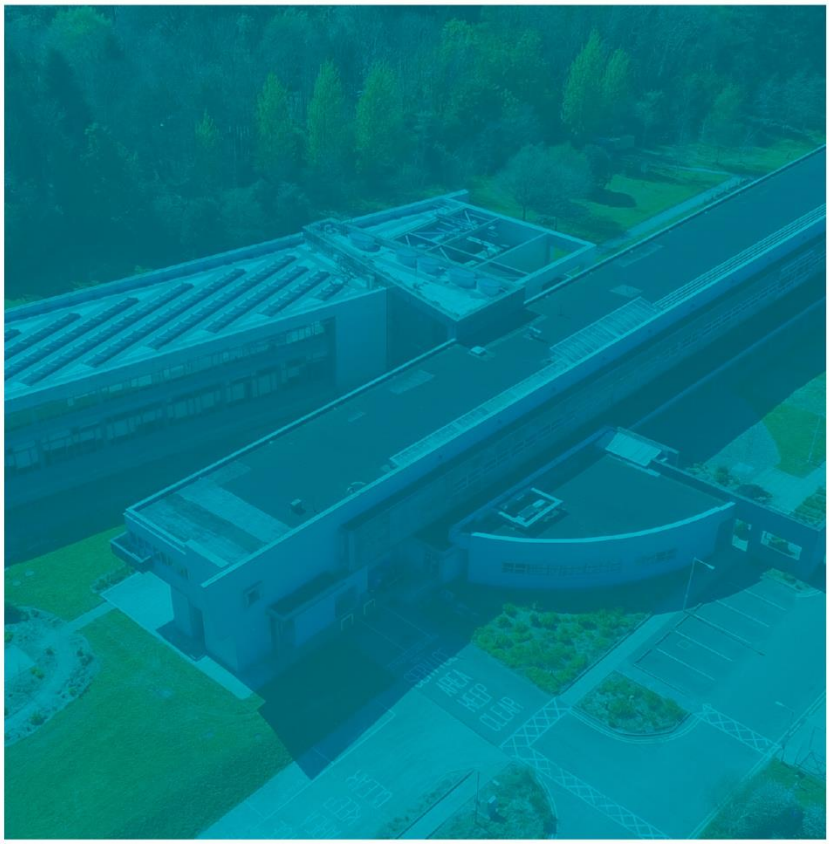
EPA Greenhouse Gas Emissions Report

2024

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil





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Executive Summary

This Carbon Report and associated Greenhouse Gas Inventory has been prepared using the Greenhouse Gas Protocol Corporate Standard - Revised Edition (GHG Protocol, 2015). The graphs and tables presented within the report summarise the 2024 emissions under scopes 1, 2, and 3 for the Environmental Protection Agency (*EPA)*. The total carbon emissions generated by the EPA in 2024 were 1,194 tCO_2 equivalent.

The purpose of this report is to provide a comprehensive breakdown of the EPA's greenhouse gas emissions (hereinafter referred to as Carbon emissions) in 2024 arising from internal operations across 6 main locations; EPA Headquarters, Johnstown Castle, Co. Wexford and EPA Regional Inspectorates located in Dublin, Castlebar, Kilkenny, Monaghan and Cork.

All data is reported in tonnes of carbon dioxide equivalent (tCO_2e). The data is also provided in emissions per EPA location.

Relevant activity data on energy consumption, heating, transport, water usage, and waste management is collected across the EPA and converted using appropriate emission factors to Greenhouse Gas Emissions. These emissions are calculated by collecting activity data (e.g., kWhr of electricity, litres of fuel, km travelled) within the EPA's internal database and subsequently uploading this data to sustainability software which, in turn, uses emission conversion factors from the Sustainability Energy Authority of Ireland (SEAI) and the UK's Departments for Energy Security and Net Zero & the Department for Environment Food and Rural Affairs (DEFRA). This report has been prepared by reviewing and analysing the emissions data for 2024 generated by bespoke sustainability software. All Scope 1 and 2 emissions as well as some Scope 3 emissions (Business travel by road (including public transport) and air) for 2024 are submitted to the Sustainable Energy Authority of Ireland (SEAI) under annual reporting obligations. The remaining Scope 3 emissions (employee commuting, waste generated and water usage) which are reported internally are also presented in this report.

This report details the methodology used to quantify the carbon emissions attributable to the EPA and presents the results of the data tracking for 2024. Total carbon emissions generated by the EPA in 2024 were 1,194 tCO_2 equivalent. The largest emissions were generated from Scope 3 activities accounting for 44% of total with Scope 1 accounting for slightly less than a quarter (21.5%).

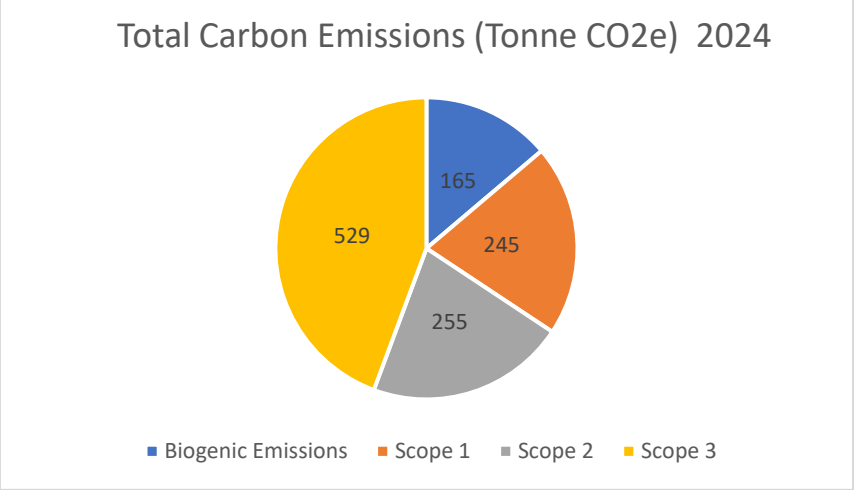


Figure 1: Total EPA carbon emissions (tCO_2e) 2024

The report also analyses comparatively against performance in previous years dating back to the 2016 - 2018 base period. Data for the base period has been averaged as shown in Figure 2. The use of the averaged base period provides a benchmark for tracking our emissions in alignment with our revised Strategy to reduce total carbon emissions by at least 35 per cent by 2026 on our transition to carbon neutrality.

All data collected and analysed within this report follows the Greenhouse Gas (GHG) Protocol principles of relevance, completeness, consistency, transparency and accuracy.

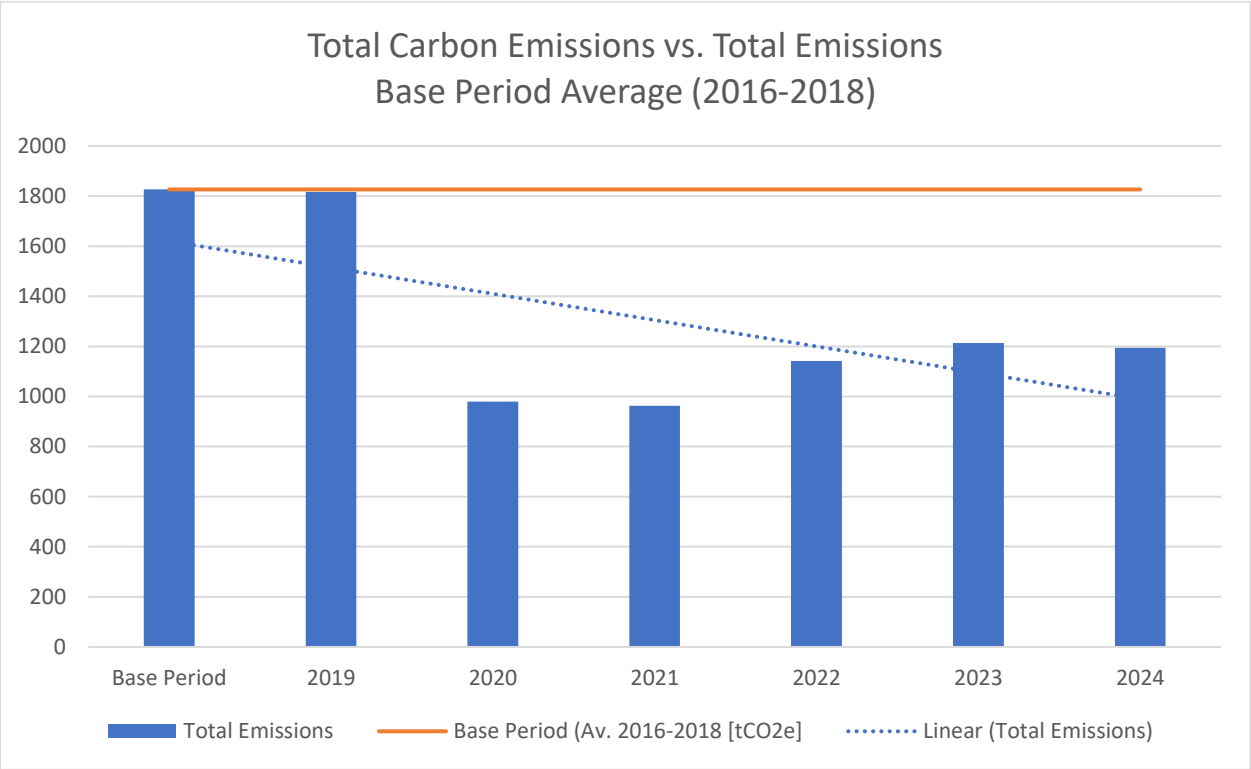
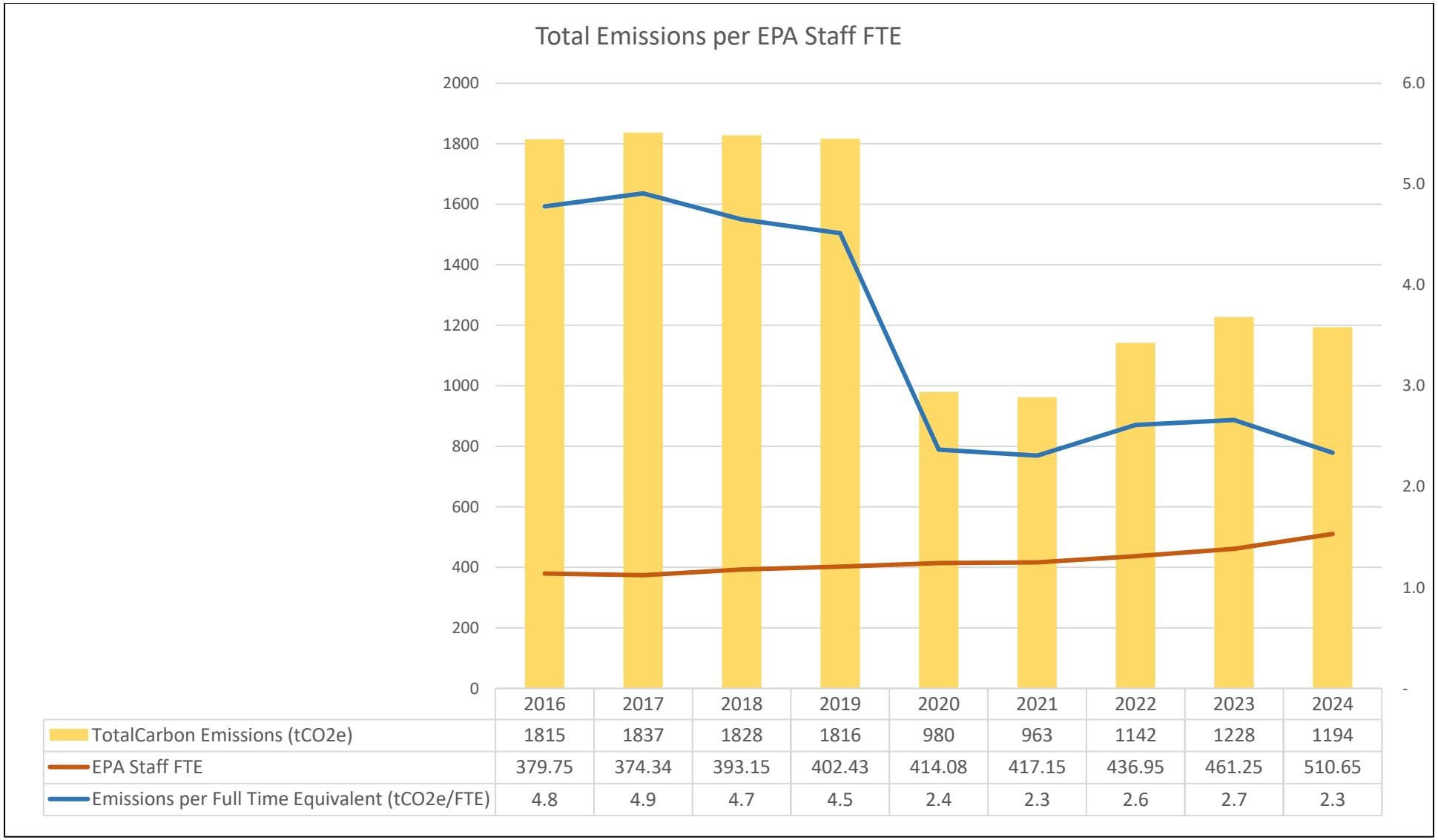


Figure 2: Total carbon emissions vs. total emissions base period average (tCO_2e)

In line with the GHG Protocol, Full-Time Equivalent statistics (FTE) are used by the EPA to calculate emissions intensity, such as emissions per FTE, on a consistent basis. FTE represents the equivalent of a full-time worker. Since not all employees work the same number of hours per week, using FTEs ensures that emissions are proportionate to actual labour input. This provides a more accurate picture of the EPA's carbon footprint relative to its workforce.

EPA staffing levels have increased to 511 full-time-equivalent staff (increase of 31% since 2010) as of the end of December 2024. This reflects a reduction in emissions by 48% from the base period average (2016-2018), when comparing the total emissions generated in 2024 per FTE EPA staff member. See Figure 3 overleaf which illustrates this trend.



	2016	2017	2018	2019	2020	2021	2022	2023	2024
TotalCarbon Emissions (tCO2e)	1815	1837	1828	1816	980	963	1142	1228	1194
EPA Staff FTE	379.75	374.34	393.15	402.43	414.08	417.15	436.95	461.25	510.65
Emissions per Full Time Equivalent (tCO2e/FTE)	4.8	4.9	4.7	4.5	2.4	2.3	2.6	2.7	2.3

Figure 3: Total emissions per EPA FTE vs Total FTE staff numbers (tCO_2e)

The following Figure 4 presents the total carbon emissions (in tonnes CO_2e) across six EPA locations; Wexford, Dublin, Cork, Castlebar, Kilkenny, and Monaghan.

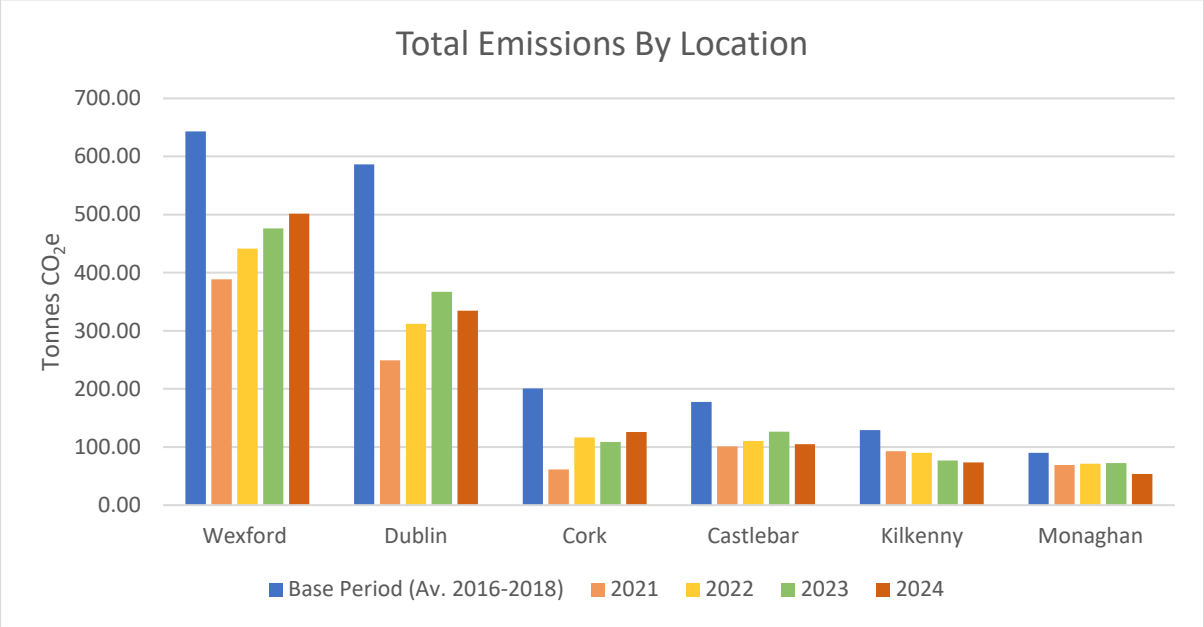


Figure 4: Total carbon emissions by EPA location (tCO_2e)

1 INTRODUCTION

1.1 Description of the EPA

The Environmental Protection Agency (hereinafter the 'EPA') is an independent regulatory body established in 1992. The purpose of the Environmental Protection Agency (EPA) is to protect, improve and restore Ireland's environment. We do this through regulation, scientific knowledge and working with others.

We have a broad environmental remit and play a key role in environmental regulation, provision of knowledge and advocacy for the environment. Our principal functions are set out in the EPA Acts 1992 to 2020 and the Radiological Protection Act 1991 to 2014 and other relevant legislation. Responsibilities include Regulation, Licensing and Enforcement, Monitoring and Reporting on the environment, Regulating and reporting Ireland Greenhouse Gas emissions, Research and development, Strategic Environmental Assessment, Guidance, Education and Public Access of environmental Information.

We have a responsibility to raise environmental awareness, influencing positive behavioural change by supporting businesses, communities, and the general population. Our vision for Ireland is ambitious and reflects the transformation needed so that we all live sustainably, that we have an environment which supports our health and well-being, and that is vibrant and healthy. We are committed to incorporating exemplary environmental management practices into our everyday activities. We aim to minimise the environmental impact of our own activities to achieve continual environmental improvement, to prevent pollution, to measure and reduce our Greenhouse Gas (GHG) emissions, adapt to climate change, and encourage environmental awareness within the EPA.

We achieved formal certification of our environmental management system to the enhanced international standard (ISO 14001:2015) in 2017, following many years of certification to the previous standard. We continue to maintain an Environmental Management System (EMS), to help us control our impact on the environment from our activities and facilities.

Through an Environmental Management Programme (EMP), we have identified several significant aspects of the EPA's operation that impact or have the potential to impact the environment. This report presents our carbon emissions for the period 2024.

In line with 2021 energy performance, we again surpassed the 2020 national energy efficiency target of 33% with an overall energy consumption reduction of 56% in 2024.

We are continuing our journey towards the next challenge ahead which will be to reduce our carbon emissions even further. Targets have been set under the 2020 Climate Action and Low Carbon Development (Amendment) Bill to set Ireland on the path to net- Zero emissions no later than 2050, and to a 51% reduction in emissions nationally by the end of this decade. The EPA is affecting and monitoring change across our organisation with a view to reducing emissions resulting from our activities over time.

This report demonstrates our continuing commitment to sustainable development and our ambition to persuade others of the changes required to reduce our collective impact on the environment.

1.2 Purpose of Report

We have reported Greenhouse Gas (*collectively referred hereinafter as 'carbon'*) emissions data since 2013 and summary carbon emissions have previously been presented as part of our Environmental Performance Reports. This data was also used to inform other reports including the EPA's Climate Action Roadmap 2025, EPA Annual Report, SEAI Public Sector reports and the Department of the Environment, Climate and Communications (DECC) Resource Efficiency Action Plans. This fourth formal carbon report is supported by consistent, timely and reliable data in accordance with the GHG Protocol.

This report presents the carbon emissions associated with the EPA's activities with the inclusion of all Scope 1 and 2 emissions together with certain activities falling within Scope 3. Reporting on Scopes 1 and 2 emissions are mandatory under the GHG Protocol while Scope 3 reporting is voluntary.

1.3 Methodology – The Greenhouse Gas Protocol

The calculation of our carbon emissions is based on the methodology and guidance of the Greenhouse Gas Protocol (*A Corporate Accounting and Reporting Standard* (Revised Edition)[1] and the Greenhouse Gas Protocol Corporate Value Chain Scope 3 Accounting and Reporting standard (The GHG Protocol Scope 3 standard) (WBCSD and WRI, 2004, 2011).

The GHG Protocol Initiative is a unique multi-stakeholder collaboration of businesses, NGOs, and governments, led by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). The Protocol is science based, internationally renowned and widely used as a foundation for developing inventories and carbon reporting. The latest edition of the Standard was published in 2004 and updated with guidance on Scope 2 in 2015 [2].

This report establishes the activities undertaken by the EPA which fall within the respective scopes of the Greenhouse Gas Protocol and provides a comprehensive breakdown of our carbon emissions for 2024 arising from internal operations across six main locations; EPA Headquarters, Johnstown Castle, Wexford, and EPA Regional Inspectorates located in Dublin, Castlebar, Kilkenny, Monaghan, and Cork. This report also analyses comparatively against performance in previous years dating back to the chosen 2016-2018 base period.

1.3.1 Overview of Greenhouse Gases

The GHG Protocol covers the accounting and reporting of the six greenhouse gases covered by the Kyoto Protocol — carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF_6). In line with the GHG Protocol, EPA emissions data are reported for all six GHGs separately in metric tonnes and in tonnes of CO_2 equivalent:

Carbon dioxide equivalent (CO_2e) – a carbon dioxide equivalent or CO_2eq is a metric measure used to compare the emissions from various greenhouse gases based on their global warming potential (GWP), by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential over a 100-year time period.

[1] https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf

[2] (http://www.ghgprotocol.org)

- Carbon dioxide (CO_2) – carbon dioxide enters the atmosphere through the burning of fossil fuels (coal, natural gas, and oil), solid waste, trees, and other biological materials.
- Methane (CH_4) – methane is emitted during the production transport and combustion of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills.
- Nitrous oxide (N_2O) – nitrous oxide is emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater.
- Fluorinated gases (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF_6)) – these are synthetic, powerful greenhouse gases that are emitted from a variety of household, commercial, and industrial applications, and processes. Fluorinated gases are typically emitted in smaller quantities than other greenhouse gases, but they are potent greenhouse gases.

1.4 Persons Responsible for Data Verification

Since 2018, the EPA's Facilities Management & Sustainability team supported by the EPA Green Team, and Site Environmental Managers (SEM's) have worked towards building a process and system for the calculation and evaluation of the carbon footprint associated with EPA activities.

The 2024 emissions data generated from the EPA's operational activities has been reviewed by the Facilities Management & Sustainability team and the EPA 's Green Team and verified as accurate and representative for the reporting period.

1.5 Selection of the Base Period

1.5.1 Approach to Selecting the Base Year or Period

In line with the GHG Protocol Methodology, we were required to choose and report a base year/period for which verifiable emissions data are available from the earliest relevant point in time for which they have reliable data. There are two methods of base year selection outlined under the GHG Protocol:

- A single year of historical data (***base year***) or
- An average of multiple years (***base period***).

The choice of base periods allows us to balance the effort of data gathering with the potential impacts of early action. Using multi-year base periods has the added advantage of smoothing out any unrepresentative data within years (e.g., increased heating needs due to extremely cold winters).

1.5.1.1 Previous Reporting Base Year

Aligning with the Public Sector Climate Action Strategy and Public Sector Climate Action Mandate the bas period of 2016 -2018 was selected as the base period applied for EPA emissions reporting. The timeframe was also more representative of the current situation with the EPA in terms of staffing numbers and provides an ambitious benchmark upon which to base future targets for reduction measures. The selection of the base period (2016-2018) defines the baseline that the EPA will use when reporting on the 2030 carbon reduction target of 51%.

The 2016-2018 base period has been applied for the 2024 Carbon report.

2 ORGANISATIONAL AND OPERATIONAL BOUNDARY

2.1 Organisational Boundary

The EPA's core functions include regulation, enforcement, and assessment. The current EPA Strategy - EPA Strategic Plan 2022–2026 sets out strategic outcomes that provide clear focus for the work of the EPA. The EPA has a full time Executive Board and is organised into five offices, each led by a Director with 13 programme areas managed by a Senior Management Network.

The organisational boundary defines the businesses and operations that establish the organisation for the purpose of accounting and reporting carbon emissions. For reporting, two distinct approaches can be used to consolidate the carbon emissions of an organisation: the equity share and the control approaches. Under the control approach, organisations can choose to report emissions from operations which they have financial or operational control over. Under the equity share approach, organisations can account for carbon emissions from operations according to their share of equity in the operation.

A financial control approach was used to set organisational boundaries for the EPA. The EPA directs financial and operating functions of 6 main locations; EPA HQ, Johnstown Castle, Wexford, and EPA Regional Inspectorates located in Dublin, Castlebar, Kilkenny, Monaghan, and Cork

In 2024 there were 522 EPA employees located across the 6 EPA sites. In 2024, 443 EPA staff are in a blended working arrangement which facilitated working from home up to a maximum of 50% of the time.

2.2 Operational Boundary

Once an organisation has determined its organisational boundaries in terms of the operations it owns and controls, it then sets its operational boundaries. This involves identifying carbon emissions associated with its operations, categorising them as direct (Scope 1) and indirect (Scope 2 & 3) emissions, and choosing the scope of accounting and reporting for indirect emissions. All Scope 1 and Scope 2 emissions were quantified and reported as was mandated by the GHG Protocol standard.

Identified **Scope 1** emission sources are the stationary combustion of natural gas, kerosene, and bio-LPG for heat and energy generation, mobile combustion of diesel and petrol from the operation of EPA owned vehicles.

Indirect stationary combustion from purchased electricity is the only **Scope 2** emission source identified. These emissions are a result of stationary combustion at the site of electricity generation. The scope 2 emissions relate to lighting and heating of EPA buildings and mobile transport in EPA owned electric vehicles (EVs).

Scope 3 emissions are optional to quantify and report under the GHG Protocol standard (WBCSD and WRI, 2004). Further assessment of the EPA's Scope 3 activities was carried out by the internal Green Team in 2021 to identify which additional activities merited inclusion in the carbon report. The feasibility of the inclusion of all Scope 3 activities in carbon reporting was assessed during the consultation process based on the quality of data currently recorded by the EPA, the level of effort required to gather

datasets, and their relevance to the overall carbon footprint. The aim was to identify the activities that were material to the EPA's carbon footprint (i.e., heavy emitters) and to consider their inclusion in the overall emissions calculation. The EPA formally adopted Scope 1, 2 and 3 activities for use in all future emissions calculations as shown in the following Table 2.

Over time, activities will be added to Scope 3 that have a material impact on overall emissions as soon as the data becomes readily available. In Q4 2025, the EPA plans to further screen and identify additional scope three emissions categories and data for inclusion into the organisational boundary. Examples of categories considered will include products, goods and services with data identified and calculated in line with the GHG Protocol Scope 3 calculation standard.

Table 1: EPA CO_2 Emission Sources

	Emission Source	Nature of Source	EPA Location
Scope 1	**Heating sources (Stationary combustion) in EPA Buildings**	Stationary combustion of natural gas, kerosene, wood chip, LPG and Bio_LPG for space heating	Wexford, Dublin, Cork, Monaghan, Kilkenny & Castlebar
	EPA Owned Vehicles	Mobile combustion of petrol and diesel	Wexford, Dublin, Cork, Monaghan, Kilkenny & Castlebar
Scope 2	**Purchased Electricity**	Indirect Stationary Combustion (including EV's)	Wexford, Dublin, Cork, Monaghan, Kilkenny & Castlebar
Scope 3	**Business Travel**	Mobile combustion of motor fuel (Private Motor Vehicle and Public transport (Bus, Taxi, Rail (National, DART & Luas)) Mobile combustion of aeroplane fuel	Wexford, Dublin, Cork, Monaghan, Kilkenny & Castlebar
	Employee Commuting	Mobile combustion of motor fuel	Wexford, Dublin, Cork, Monaghan, Kilkenny & Castlebar
	Purchased Goods and Services	Water consumption	Wexford, Dublin, Cork, Monaghan, Kilkenny & Castlebar
	Waste Disposal	EPA generated non-hazardous and hazardous waste for recovery/disposal	Wexford, Dublin, Cork, Monaghan, Kilkenny & Castlebar
Biomass	**Wood Chip and Bio-LPG**	Stationary combustion of wood chip and Bio-LPG fuel for space heating	EPA HQ Wexford, Monaghan

3 REPORTING BOUNDARIES

The GHG Protocol methodology categorises emissions sources into direct (Scope 1) and indirect emissions (Scope 2 & Scope 3).

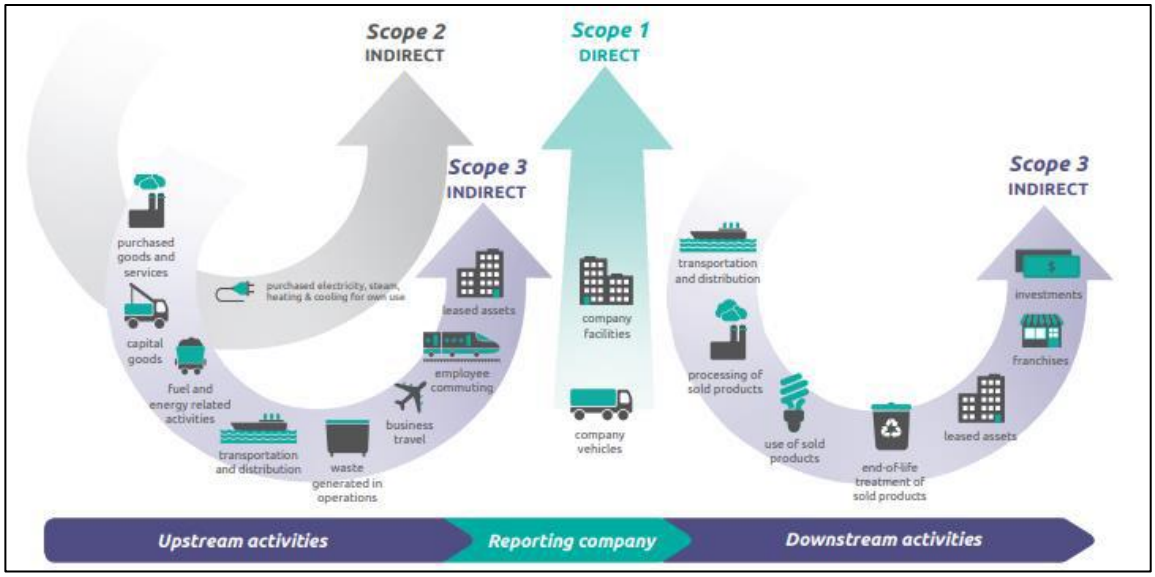


Figure 5: Scope 1, 2, 3 activities under the GHG Protocol

The EPA's activities are currently categorised into three scopes as listed below.

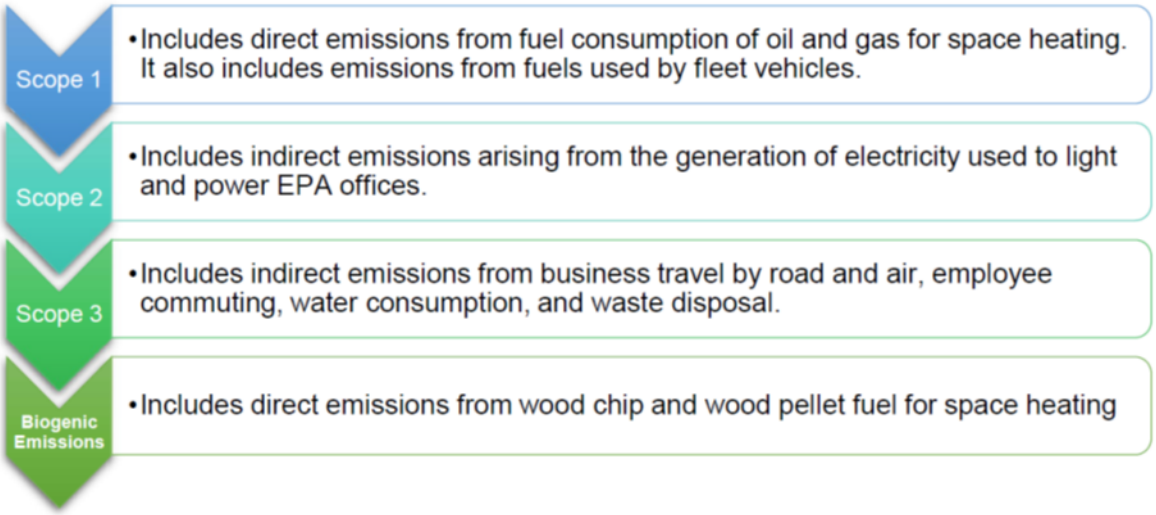


Figure 6: EPA Activities by Scope

3.1 Direct Emissions (Scope 1)

Direct emissions are emissions from sources which are owned or controlled by the EPA. All direct emissions generated from EPA activities are included in Scope 1. These include emissions from the

stationary combustion of natural gas, kerosene, and Bio-LPG for space heating; and emissions from the mobile combustion of diesel and petrol in EPA-owned vehicles as shown in Table 2.

Table 2: Scope 1 Emissions

Source Category	Activity Name	EPA Location
Mobile Combustion – Owned Fleet	EPA Owned Fleet – Fuel Cards	EPA Regional Inspectorates - Dublin, Kilkenny, Monaghan, Castlebar, Cork
Stationary Combustion	Natural Gas	EPA Regional Inspectorates - Dublin, Kilkenny, Castlebar
Stationary Combustion	Kerosene	EPA Regional Inspectorates – Cork
Stationary Combustion	LPG	EPA Headquarters Wexford, EPA Regional Inspectorate - Monaghan
Stationary Combustion	Bio-LPG	EPA Headquarters Wexford, EPA Regional Inspectorate - Monaghan
Stationary Combustion	Wood Chip	EPA Headquarters Wexford

Biogenic emissions are reported separately to the three scopes as per GHG Protocol methodology. Biogenic emissions incorporate direct emissions from the combustion of wood chip and Bio-LPG (CH_4 & N_2O fraction) for space heating at EPA HQ in Wexford, and Bio-LPG in Monaghan.

3.2 Indirect Emissions (Scope 2)

Indirect emissions are emissions which are a consequence of the activities of the EPA but occur at sources owned or controlled by another entity. All indirect emissions are included in scopes 2 and 3.

3.2.1 Scope 2 Indirect Emissions

Scope 2 includes indirect emissions arising from the generation of electricity. These emissions are a result of stationary combustion at the site of electricity generation. The scope 2 emissions relate to lighting and heating of EPA buildings and mobile transport in EPA owned electric vehicles (EVs).

Table 3: Scope 2 Emissions

Source Category	Activity Name	EPA Location
Purchased and Used electricity	Electricity	EPA Regional Inspectorates - Dublin, Kilkenny, Monaghan, Castlebar, Cork. EPA Headquarters Wexford – Lighting and heating of buildings, Laboratories, and canteen under the Operational Control of the EPA
Purchased and Used electricity	Electricity	EPA Regional Inspectorates - Dublin, Kilkenny, Monaghan, Castlebar, Cork. EPA Headquarters Wexford – charging of EPA owned (fleet) Electric vehicles (EVs)

3.2.2 Scope 3 Indirect Emissions

In 2021 the Green Team led a screening exercise to evaluate the EPA activities that fell within Scope 3 emissions to be included in the Carbon report in line with GHG Protocol Standard. The aim was to identify the activities that are material to our carbon footprint (i.e., heavy emitters) and consider their inclusion in the overall carbon emissions calculation. This exercise will be repeated in 2025 in order to

ensure a holistic and representative carbon assessment of the EPA across both direct and indirect emissions.

The Scope 3 Standard recommends that organisations identify which scope 3 activities are expected to have the most significant emissions, offer the most significant reduction opportunities, and are most relevant to the company's business goals. The relevant EPA activities falling within the Scope 3 emissions categories (voluntary for inclusion) are listed in Table 4 below.

Table 4: EPA Activities which fall within Scope 3

Scope 3 Emissions	Activity	Relevance to EPA Activity (Upstream, Downstream or Not Applicable)
1. Purchased Goods and Services	• Laboratory supplies • Stationary, Paper, Ink • IT Services • IT equipment • Construction materials • Outsourced Contractor services -Construction • Facilities fit out (maintenance, carpets, painting, lighting) • Provision of Clean Water	Upstream
	• Offsite Storage of EPA Files • Outsourced contractor services – legal, consultancy, maintenance, IT, Security, offsite file storage, monitoring, • Events management • Courier Services • Landscaping • Use of Clean Water	Downstream
2. Capital Goods	• Laboratory Equipment (machines) • Vehicles and Plant • Furniture	Upstream
3. Fuel & energy related activities (not included in Sc 1 or Sc 2)	• Other fuels - sampling activities, pumps boats,	Downstream
4. Upstream Transportation and Distribution	• Transportation of Goods and Services • Transportation of related activities - Purchased Fuels, Biomass	Upstream
5. Waste Generated in operations	• Waste disposal of EPA generated waste	Upstream
6. Business travel	• All other travel on vehicles not owned/controlled by EPA including private motor vehicles, public transport by road and rail and air travel • Hotel Stays	Downstream
7. Employee Commuting	• Commuting to Work • Working from Home	Downstream

The feasibility of including all Scope 3 activities in this carbon report was assessed during the screening process. Factors such as the quality of data currently recorded by the EPA, the level of effort required to gather datasets and their relevance to the overall carbon footprint were considered.

Challenges were identified that required consideration within the EPA. The main challenges identified were:

- **Data availability**: Scope 3 covers a broad range of goods and services. The level of readiness of external providers to provide the required data is low at present but is expected to improve in the coming years; and
- **Resource Commitment**: Capturing data begins at procurement stage and requires on-going effort particularly where services are ongoing (e.g., outsourced sampling, consultancy). A resource commitment will be required from all business units procuring goods & services and a centralised resource will be required to support and co-ordinate the data gathering/reporting.

While these challenges exist for all organisations, the EPA ambition is to add activities that have a material impact as soon as the data becomes readily available. To this end the Green Team has developed a Materiality Matrix that will be used to determine the sequence new activities to be added to Scope 3. This Matrix will be reviewed in the coming years and initially secondary data will be utilised for any new scope 3 categories with a gradual move to improved data quality and the use of primary data for robust calculations and reporting.

3.2.3 Materiality Matrix

A set of criteria was developed to assist in the evaluation of the identified Scope 3 emissions sources of relevance to the EPA. The criteria were sourced from the GHG Protocol and additional criteria were added to provide a specific context for EPA when screening Scope 3 activities. The GHG Protocol criteria are presented in Figure 7 below.

Table [II] Criteria for identifying relevant scope 3 activities

Criteria	*Description of activities*
Size	They contribute significantly to the company's total anticipated scope 3 emissions
Influence	There are potential emissions reductions that could be undertaken or influenced by the company
Risk	They contribute to the company's risk exposure (e.g., climate change related risks such as financial, regulatory, supply chain, product and technology, compliance/litigation, and reputational risks)
Stakeholders	They are deemed critical by key stakeholders (e.g., customers, suppliers, investors or civil society)
Outsourcing	They are outsourced activities previously performed in-house or activities outsourced by the reporting company that are typically performed in-house by other companies in the reporting company's sector
Sector guidance	They have been identified as significant by sector-specific guidance
Spending or revenue analysis	They are areas that require a high level of spending or generate a high level of revenue (and are sometimes correlated with high GHG emissions)
Other	They meet any additional criteria developed by the company or industry sector

Source: Adapted from table 6.1 from the *Scope 3 Standard*

Figure 7: Criteria for identifying relevant Scope 3 activities [Source: GHG Protocol]

A rating score was applied to the criteria which resulted in a materiality matrix being developed. Each of the EPA activities which fell within the GHG Protocol Scope 3 categories were scored in line with the materiality matrix. The results provided confidence in the Scope 3 activities included in the data being reported and identified additional Scope 3 categories that will be considered for potential future inclusion. Scope 3 activities that have been included in the 2024 Carbon report is presented in Table 5.

Table 5: Scope 3 inclusions

Scope 3 (Indirect) emissions	EPA Activity	EPA Location
Business travel (downstream)	All business travel on vehicles not owned/controlled by EPA including air travel, public transport (buses, trains, taxis) and travel by road in private vehicles (expensed travel)	**All Locations**
Waste generation (in operations)	Waste recycling and disposal of EPA generated waste	**All Locations**
Employee commuting (downstream)	Commuting to work by car, bus, train, tram or motorcycle	**All Locations**
Purchased goods and services (downstream)	Use of clean water	**All Locations**

3.3 Progressive approach to carbon reporting

The first essential steps were made in 2021 and 2022 in terms of reporting against the 2030 Climate Action targets. This step focused on strengthening and streamlining our existing data collection process. An environmental database was enhanced and in use throughout all locations through the SEM's. This database forms a central repository for relevant energy, electricity, waste, water, and employee (numbers only) data that must be recorded within the EPA.

The Green Team has spent considerable time in 2025 reviewing and validating the 2024 Scope 1, 2 and 3 data to ensure that information included in this report is accurate and representative of our activities.

It is planned to build on this approach for 2025 data and the materiality matrix will be reviewed to extend the number of activities that the EPA include under scope 3. In line with SEAI public sector reporting the mandatory inclusion of business travel by public transport was captured for 2024 data.

The extension of inclusions into Scope 3 will be on-going year on year until the EPA determines that all applicable and relevant activities are captured.

3.4 Base Period (2016-2018) Selected

When selecting a base year or period, the GHG Protocol recommends selecting a year which includes a complete dataset from which to glean comparisons from the earliest relevant point in time for which the EPA has reliable data for. There are two recommended methods of base year selection outlined the GHG Protocol: (a) selecting a single year of historical data (***base year***) or (b) selecting an average of multiple years (***base period***).

The selection of a ***base period*** allows us to balance the effort of data gathering with the potential impacts of early action. Using multi-year base periods has the added advantage of smoothing out any unrepresentative data within years (e.g., increased heating needs due to extremely cold winters).

The National Climate Action Plan sets out Public Sector Decarbonisation targets with the aim of reducing emissions by 51% by 2030. The base period of 2016-2018 for achieving this target is set out in the Climate Action Plan.

Aligning with the Climate Action Plan, we selected 2016-2018 as the most appropriate base period for reporting (See table 6). The timeframe is also more representative of the current situation with the EPA in terms of staffing numbers and provides an ambitious benchmark upon which to base future targets for reduction measures.

Table 6: Total and averaged Annual base period emissions

Year	2016	2017	2018	Base Period (Average 2016-2018)
Biogenic Emissions	194.33	185.95	154.70	178.33
Scope 1	319.15	322.89	348.69	330.24
Scope 2	576.91	592.46	534.14	567.84
Scope 3	724.45	736.07	790.79	750.43
Total	**1814.85**	**1837.36**	**1828.31**	**1826.84**

Section B

4 CARBON EMISSIONS 2024

4.1 Methodologies used to calculate emissions.

An emission factor is a calculated ratio relating emissions to a measurement of activity; for example, using emissions from electricity production relate to the combustion of fuel to create the electricity and total electricity consumed nationally. An emission factor for emissions per kWh of electricity consumed within that nation may be calculated (WBCSD and WRI, 2004).

Emissions were calculated as carbon dioxide equivalent (CO_2e). Emission factors that were as regionally reflective as possible, were chosen.

4.1.1 Use of Sustainability Software

To condense and streamline the conversion of multiple activity/energy streams, the EPA engaged an online sustainability software platform. All data related to Scope 1, 2 and 3 activities is populated into a bespoke excel template and uploaded onto the online platform. Data is then converted into tonnes of CO_2 equivalent from their respective units (litres, kWhrs, passenger km travelled, vehicle km, m^3 of water used, tonnes of waste etc.) using industry/internationally recognised GHG emission conversion factors. The platform uses nationally and internationally recognised emissions factors from the SEAI and the UKs Department for Energy Security and Net Zero and DEFRA. Emissions factors applied for 2024 are presented in full in **Appendix A** to this report.

4.2 Annual Emissions Summary

4.2.1 Emissions Correction

In the 2023 Carbon Report, an input error resulted in the paper and cardboard waste figure for Castlebar being recorded as 677.0 tonnes instead of the correct value of 0.677 tonnes. This error significantly inflated the reported waste-related emissions to 15.59 tonnes CO_2e. Upon correction and re-submission of the accurate waste data to the EPA's online sustainability software platform, the revised CO_2e emissions figure for waste 2023 is 1.20 tonnes CO_2e. This correction has been reflected in the current year's reporting to ensure data accuracy and transparency.

4.2.2 2024 Emissions Summary

Total emissions for 2024 are presented in the following tables (Table 7 and Table 8) and figures (Figure 8 & 9). The total annual emissions are presented in Tonnes of CO_2 equivalent.

Table 7: Total Annual Carbon Emissions 2016-2024 (Tonnes CO_2e)

Scope	2016	2017	2018	2019	2020	2021	2022	2023	2024
Biogenic emissions (Biomass & Bio-LPG)	194.33	185.95	154.70	185.25	133.54	162.46	169.79	181.43	164.93
Scope 1	319.15	322.89	348.69	334.78	224.77	243.11	262.70	217.96	244.86
Scope 2	576.91	592.46	534.14	530.27	385.41	330.96	320.98	335.32	254.57

Scope 3	724.45	736.07	790.79	765.96	236.35	226.40	388.42	492.90	529.47
Total Emissions	**1,814.85**	**1,837.36**	**1,828.31**	**1,816.26**	**980.07**	**962.92**	**1,142.89**	**1,227.61**	**1,193.82**

Our total carbon emissions generated in 2024 was 1,193.82 tCO_2e. The largest emissions were generated from Scope 3 activities accounting for 44% of total emissions with Scope 1 accounting for 20.51% or slightly less than a quarter.

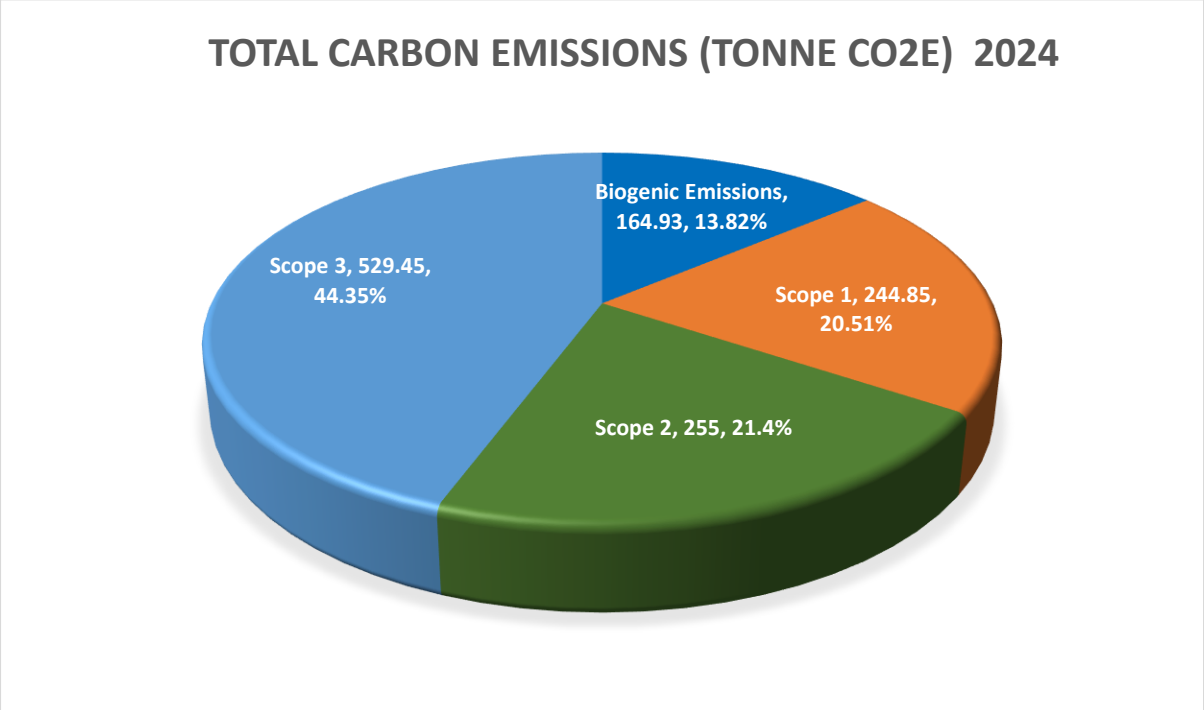


Figure 8: Total Carbon Emissions (tCO2e) 2024 by Scope

44% of total emissions were generated from Scope 3 activities mainly attributed to business travel and employee commuting activities. Our core operations in 2024 continued to be delivered with EPA staff working in a blended working arrangement with 2-3 days per week office presence. Business travel by air increased from 2022-2023 levels, and our core functions of site-based inspections and in person attendance at a range of meetings, appointments and events continued as normal.

Table 8: Activity data 2019-2024 vs base period

Activity	Base Period (2016-2018)	2019	2020	2021	2022	2023	2024
Heating	362.14	370.58	277.68	322.90	332.97	306.33	317
EPA Owned Fleet	146.42	149.45	85.96	82.66	99.52	93.05	92.79
Purchased Electricity	567.84	530.27	385.41	354.23	343.55	374.29	282.16

Business Travel Air	157.72	149.94	18.19	1.57	51.45	45.98	61.12
Business travel - Mileage	216.97	186.35	60.67	46.58	121.44	145.29	147.58
Employee Commuting	367.36	417.19	146.02	152.85	191.81	246.98	290
Water usage	0.72	0.99	0.70	0.14	0.46	2.07	1.64
Waste Generated	7.66	11.49	5.45	1.97	0.7	1.20	1.16
Total Carbon Emissions (tCO2e)	1,827	**1,816**	**980**	**963**	**1,142**	**1,213.2**	**1,193.8**

The increased presence in the offices from 2022 onwards did not have a significant effect on waste generated, water usage, or electricity usage following the resumption of office-based functions. Water related emissions increased slightly in 2023 and 2024 due to identified water leaks in both years, the building management system identified the leaks as intended and they were efficiently repaired but did result in an increase in water related emissions.

As personnel continued site attendance, meetings, and events however a marked increase in business travel and employee commuting was observed between 2022 and 2024.

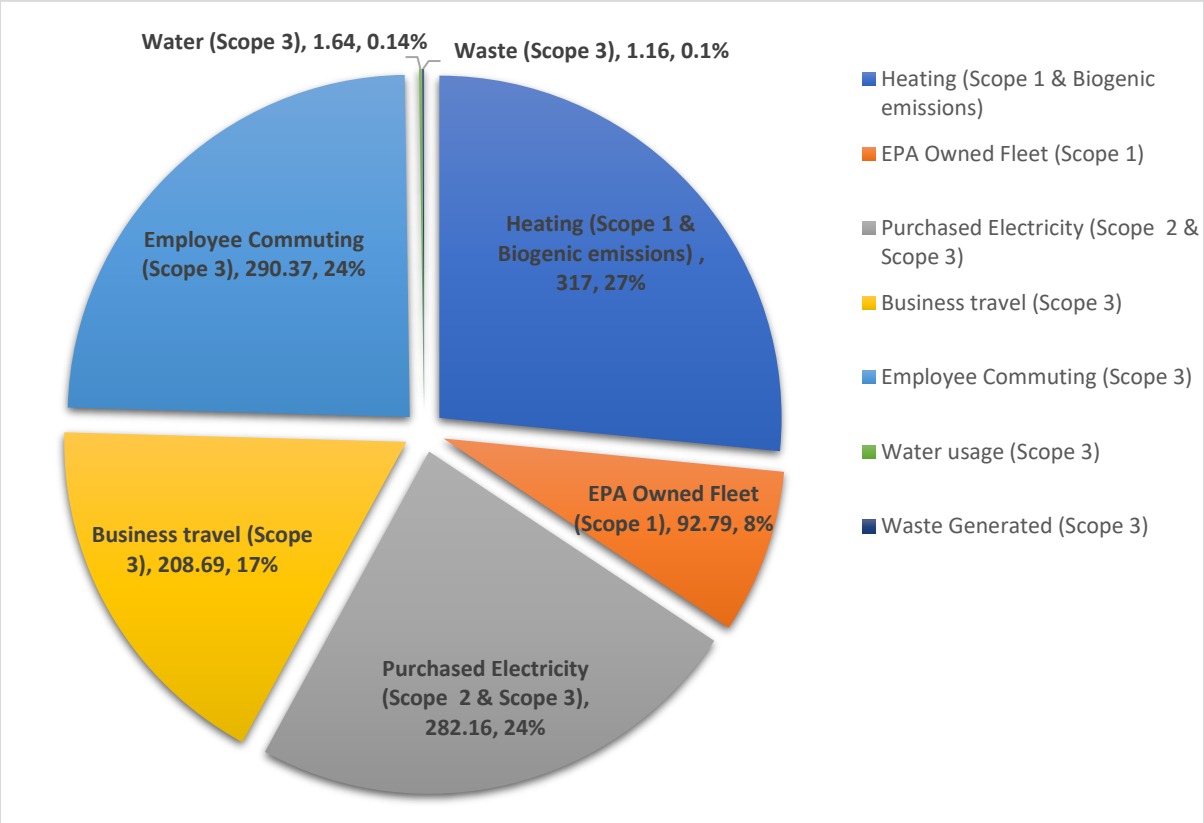


Figure 9: Total Carbon Emissions 2024 by Activity (tCO_2e)

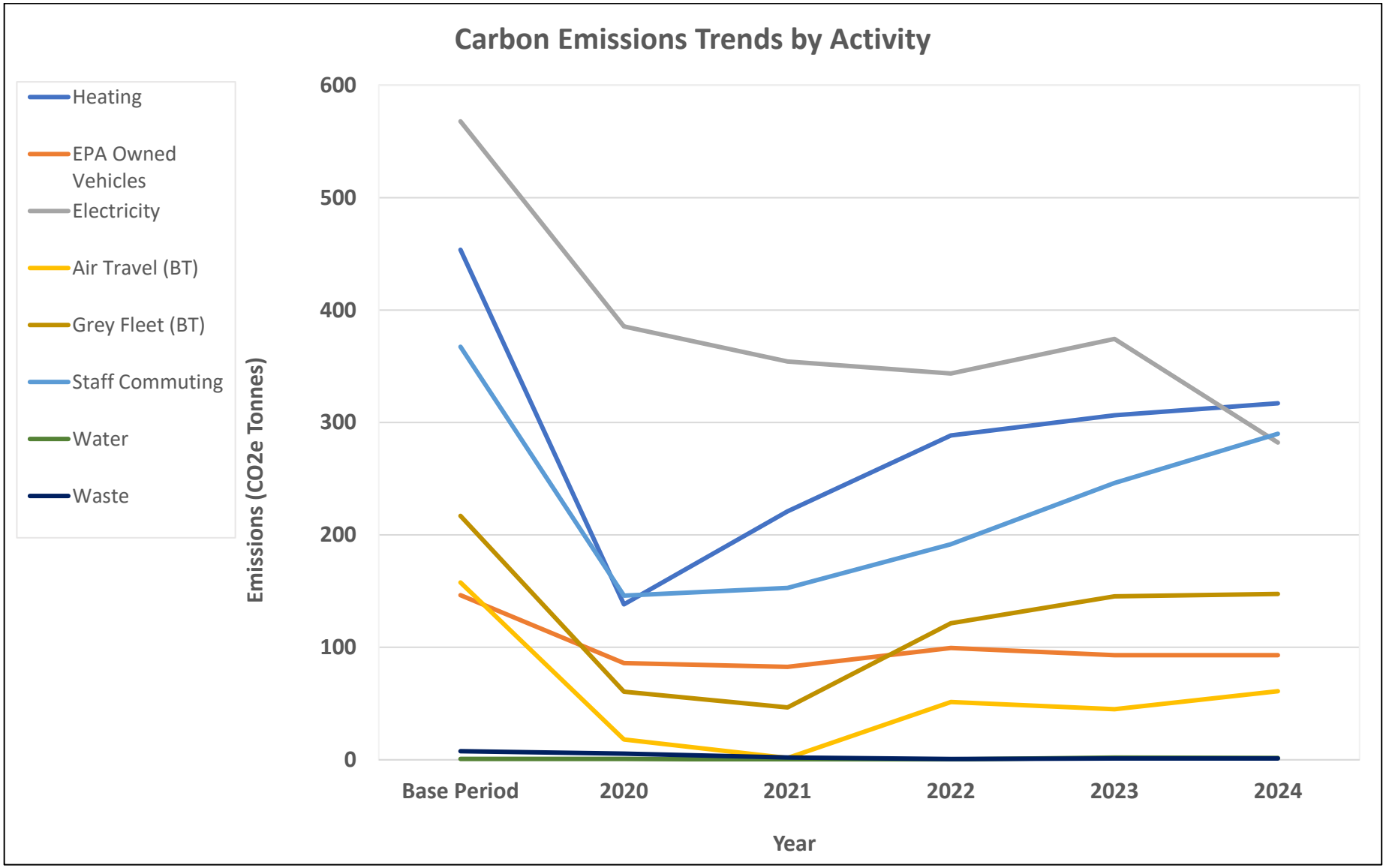


Figure 10: Carbon Emission Trends by Source Activity (tCO_2e)

4.3 Emissions Overview

4.3.1 Scope 1

Scope 1 emissions comprise direct emissions which were generated from stationary combustion of natural gas, wood chip, LPG, bio-LPG and kerosene at EPA Locations as well as the combustion of petrol and diesel in EPA fleet vehicles.

When compared against the Base Period (average 2016-2018), the results for 2024 indicate fluctuations in Scope 1 emissions with a 37% reduction in fuel usage from owned fleet, 46% decrease in kerosene emissions, an 11% reduction in natural gas emissions, and a decrease of 1% in wood chip emissions.

When compared to 2019 there was a 17% reduction in natural gas emissions and a 49% decrease in kerosene emissions in 2024. Diesel and petrol usage to operate the EPA owned fleet of vehicles in 2024 remained consistent with 2023.

There is a notable increase in natural gas emissions between 2023 and 2024. The rise in natural gas emissions in 2024 was primarily due to a colder winter, reduced efficiency from aging boilers, and a continuous boiler operation for hot water supply identified during the BMS commissioning. To address this, an electric heating element is planned for installation in the hot water tank to reduce boiler reliance.

Table 9: Scope 1 comparison with Base Period (Tonnes CO2e)

Source Category	Activity Name	Base Period	2019	2020	2021	2022	2023	2024
Mobile Combustion	Owned Fleet Fuel	146.42	149	85.96	82.67	99.52	93.06	92.79
Mobile Combustion - Owned Fleet Total		**146.42**	**149.45**	**85.96**	**82.67**	**99.52**	**93.06**	**92.79**
Stationary Combustion	Bio-LPG	0	0	0.04	0.03	0.03	0.02	4.67
	Kerosene	42.56	44.41	41.07	56.43	63.07	35.25	22.81
	LPG	21.38	9.64	0	0	0	0	21.47
	Natural Gas	115.24	123.09	93.10	98.06	95.69	84.60	102.60
	Wood Chip	5.22	6.973	4.054	5.929	4.39	5.02	5.18
	Wood Pellet	1.73	1.231	0.553	0	0	0	0
Stationary Combustion Total		**186.14**	**185.33**	**138.81**	**160.445**	**163.18**	**124.90**	**156.73**
Grand Total		**332.56**	**334.78**	**224.77**	**243.11**	**262.70**	**217.96**	**249.52**

We are transitioning our fuels towards more sustainable options by converting our heating systems to more sustainable forms of heating, e.g., conversion to electric heat pumps and installation of Solar PV in all locations. This transition will continue in line with the EPA's commitment under our own Strategy and National Climate Action Policies.

4.3.2 Scope 2 - Indirect Emissions

4.3.2.1 Electricity

Electricity data is captured by the Site Environmental Managers (SEM's) from onsite meters and logged onto the EPA's internal Environmental Database monthly. This data is recorded in Kilowatt hours and is verified by the SEM's monthly against electricity utility bills.

Electricity is used by the EPA to power and light all EPA offices (and more recently heat in both the Dublin & Monaghan offices) across the country. In addition, electricity is used to power the EPAs fleet of electric vehicles. At the time of writing, we had eleven fully electric vehicles in the fleet and five hybrid vehicles accounting for 42% of total fleet. We plan on expanding this number in 2025.

Emissions associated with electricity consumption (255 tCO2e) was significantly reduced (by 61%) in 2024 in comparison to the base period average (567.84 tCO2e). This reduction is due to the efficiency measures undertaken by the EPA over the past number of years in combination with lower published emission factors from grid decarbonisation. It is expected that this reduction in Scope 2 emissions will continue as further measures are implemented such as the installation of Solar PV at all EPA locations and the continued rollout of energy efficient lighting. The ongoing installation of Solar PV on all our buildings is estimated to reduce our emissions by 107tn CO2e and generate >28% of our electricity needs.

4.3.3 Scope 3 Emissions

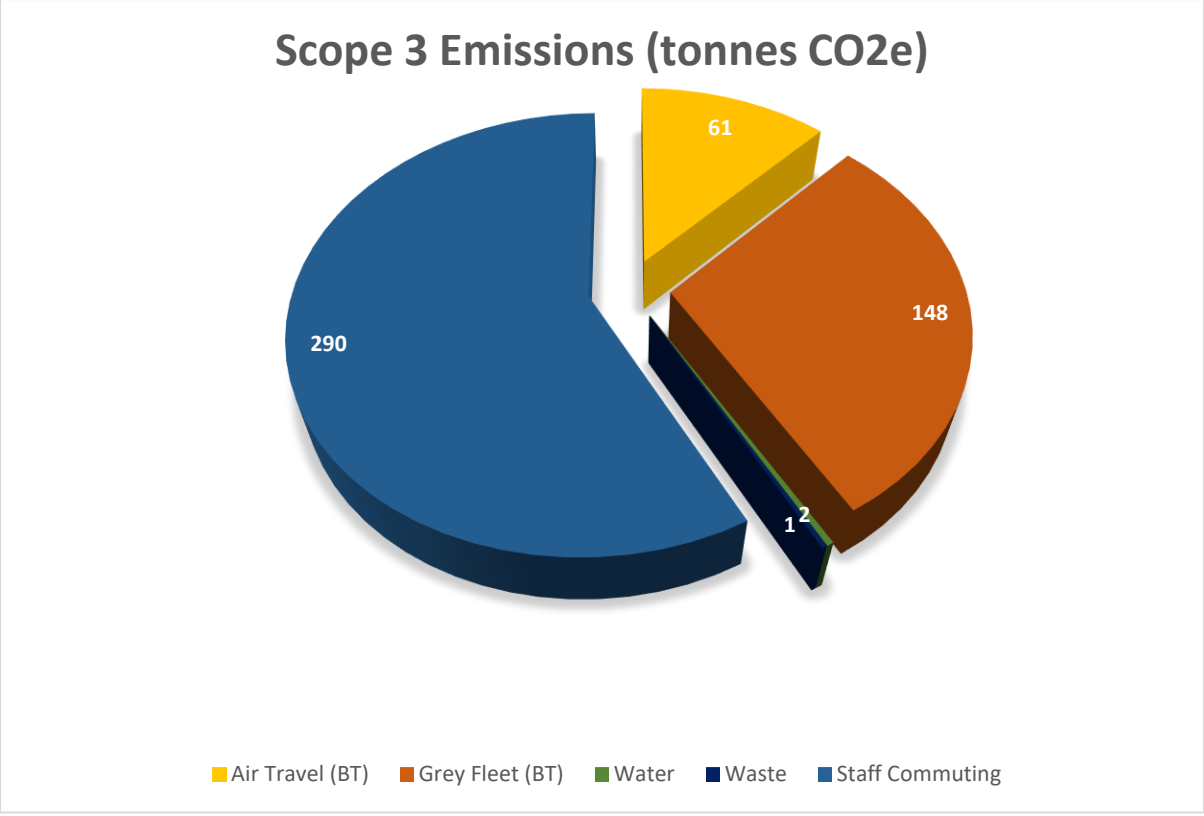


Figure 11: Scope 3 carbon emissions (Tonnes CO2e) breakdown 2024

Figure 11 above shows the percentage breakdown of Scope 3 emissions included in the 2024 Carbon Report. Most Scope 3 emissions are derived from emissions from mobile combustion during employee commuting (58%) and business travel by road, and public transport (29%).

Further analysis of the scope 3 emissions selected for inclusion in the Carbon Report is detailed below.

4.3.3.1 Business travel (Air travel, Road travel by public transport and private car (expensed mileage)

Business travel is an essential requirement for the fulfilment of many of our core functions. Business travel by car is captured through the travel and subsistence claims for mileage. This data is logged by employees into the EPA's expense claims system and includes information such as distance travelled, vehicle make and model, engine size and VRT tax band. The information is then used to consolidate total kilometres travelled by VRT band per EPA Location (where the staff member is normally based). This method of data capture has been in place at the EPA for many years and is well established.

When compared to the base period, travel by road has reduced by 32% (216.97 tCO_2e [Base Period] vs 147.58 tCO_2e [2024]). When compared to 2019 there has been a 21% reduction in travel by road. The reduction is due to an overall drop in kilometres travelled and the transition to electric vehicles.

In 2024, Air travel generated 61.12 tCO2e of emissions and is still well below the Base period average (157.72t CO2e) and 59% lower than 2019 emissions levels.

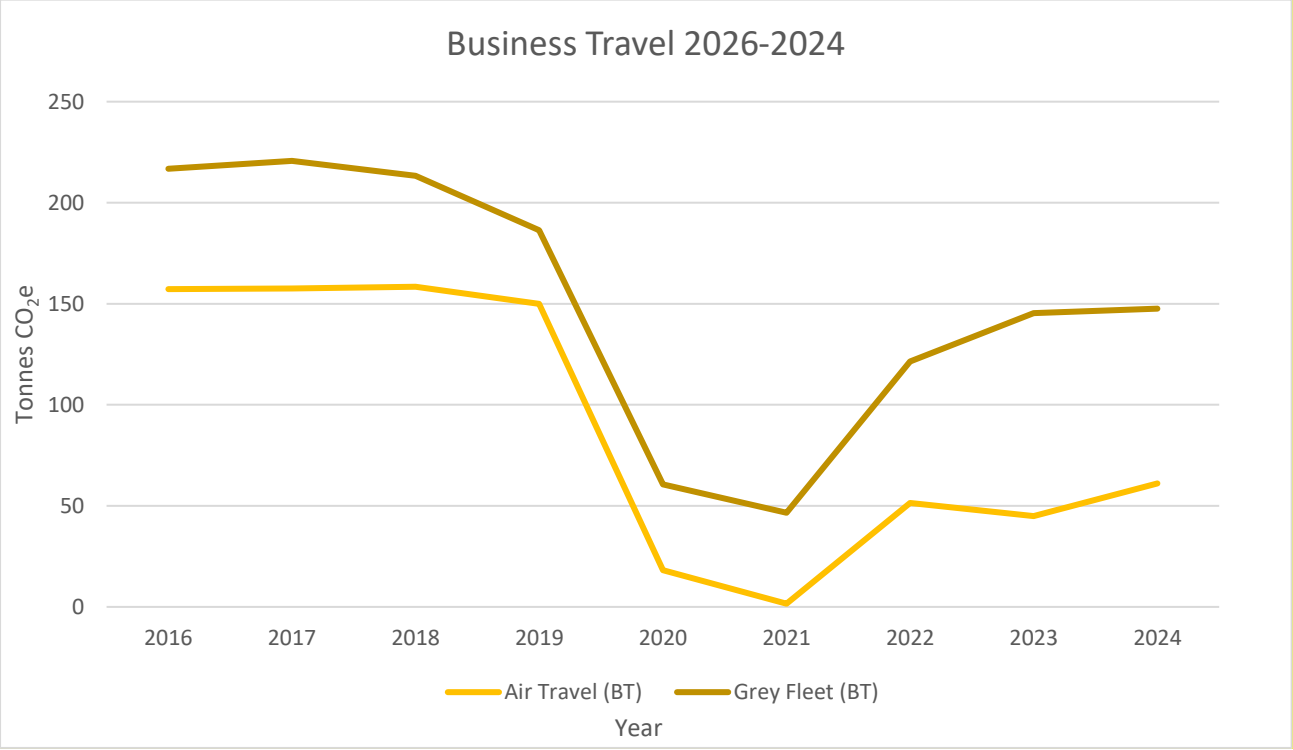


Figure 12: Business travel trends 2016-2024 (tCO_2e)

In 2022, the SEAI brought in mandatory reporting of business travel by public transport. This includes expensed travel by rail, tram, bus, and taxi.

4.3.3.2 Employee Commuting (car, rail, bus, motorcycle)

This category includes all commuting activities carried out by EPA staff in 2024 and covers travelling by all modes of transport from home to their normal place of work. Emissions arising from travel by private car, bus, train were included. Information on walking and cycling were collated also.

Data on commuting patterns was obtained via an online survey which was rolled out to all EPA staff in March 2025. The Survey asked the respondents about commuting patterns to and from work between January and December 2024. A summary of the survey questions is provided in Appendix B to this report. The survey request was open for responses until mid- April to facilitate increased participation.

The survey has been refined and simplified following feedback from staff in recent years and relies on the VRT tax band and generalised engine size/fuel type format.

Response rates for the 2024 survey and previously conducted surveys are presented below.

Table 10: EPA Employee commuting survey response rates

Year of Survey	2014	2019	2021	2022	2023	2024
Total Number of FTE Staff[3]	366	408	431	450	476	511
Total number of survey respondents	312	272	177	308	313	369
Response Rate	***85.25%***	***67%***	***41%***	***68%***	***66%***	***72%***

In line with GHG Protocol guidance, the responses from the survey were a sample of the total employee population and therefore the data was factored up to provide a figure representative of the whole EPA. Emissions were calculated for the responses received in the reporting year. This represented 72% (response rate) of the total EPA commuting emissions. The remaining 28% was factored by calculation and the use of an intermodal figure[4].

Intermodal employee commuting for the reporting year and the base period were based on the extrapolation rates presented in Table 11.

Table 11: Extrapolation rates

Year	2016	2017	2018	2019	2021	2022	2023	2024
Total Number of FTE Staff	384	392	400	408	431	450	476	510.65
Total number of survey respondents	312	312	272	272	177	308	313	369
Response Rate	*81%*	*80%*	*68%*	*67%*	*41%*	*68%*	*66%*	*72%*
Basis for Extrapolation Calculation	*19%*	*20%*	*32%*	*33%*	*59%*	*32%*	*34%*	*28%*

[3] An FTE is a standard unit used to measure the workforce in a way that accounts for differences in working hours. Rather than counting the number of employees, FTEs reflect the total number of hours worked, making it possible to compare staff levels more accurately, regardless of whether they work full-time or part-time (European Commission, 2025).

[4] The total carbon contribution of the represented response rate was used as the basis of the extrapolation calculation rather than the carbon contribution of individual modes of transport.

Annual employee commuting data has been recalculated as described above from the 2016-2018 baseline period to 2024 to provide a comparable like-for-like benchmark and is presented graphically below in Figure 13.

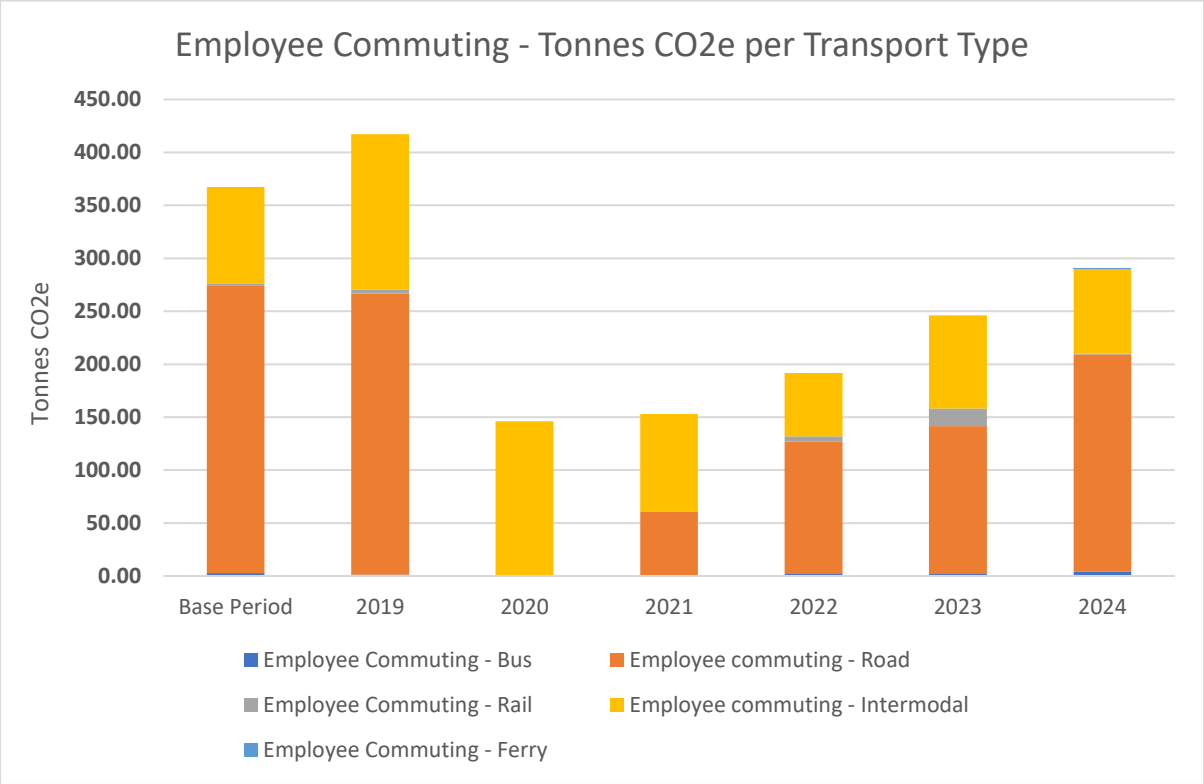


Figure 13: Employee commuting patterns 2016 - 2024

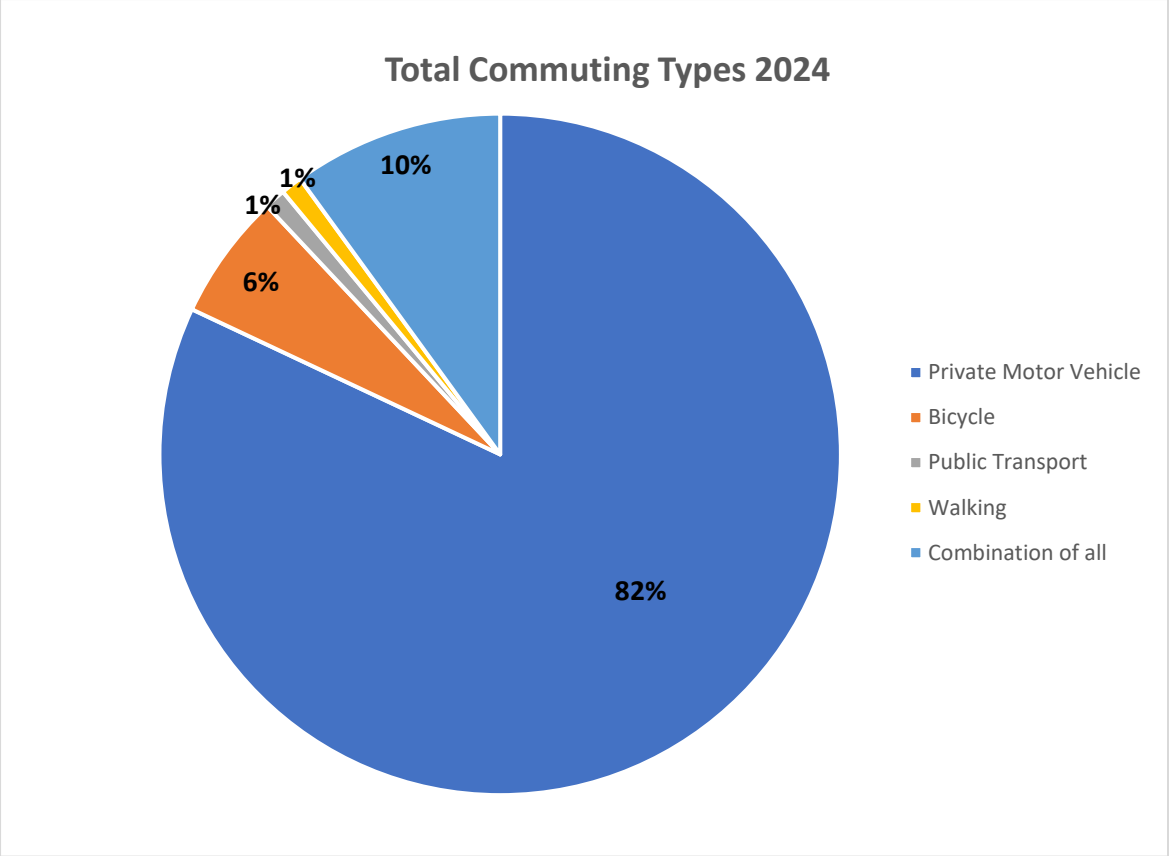


Figure 14: Commuter survey – total commuting types

Commuting patterns in 2024 indicated a heavy reliance on private vehicles to get to and from designated places of work. This is to be expected given the rural locations of many of the EPA offices. Despite this, in terms of emissions, the average reported distance travelled by employees in their daily commute ranged between 26km– 70km per day.

Overall carbon emissions generated by employee commuting has fallen by 76.99 tCO_2e in 2024 from the Base Period which reflects a 21% reduction in emissions as a result of the blended working approach. Increased use of public buses in 2024 reflects a positive shift towards more sustainable transport choices. This rise in bus usage has contributed to a 62% increase in associated emissions (4.57 tCO_2e) compared to the base period (2.82 tCO_2e).

4.3.3.3 Waste Generated in operations.

Waste treatment in facilities owned or operated by third party contactors is included in Scope 3. Treatment of waste generated is categorised in the GHG protocol as an upstream Scope 3 category as the services are purchased by the EPA under contract. Waste treatment includes disposal at landfill, recovery for recycling, energy recovery, and composting. The EPA's Scope 3 emissions from waste generated in operations is derived from the Scope 1 and Scope 2 emissions of the solid waste management companies who are contracted to accept and treat the waste collected from the EPA.

For the purposes of the Carbon Report only non-hazardous solid wastes are included in Scope 3. Waste types included mixed municipal waste from offices and laboratories, non-hazardous mixed dry recyclables, and food waste from canteens.

The EPA use a waste-type-specific method of emission calculation for the 2024 Carbon Report and have applied this to waste streams where standard recognised emission factors were readily available (refer to Appendix A to this report for emission factors).

The EPA generates some hazardous wastes from laboratories and general waste electrical materials at EPA locations; however, the quantities are not sufficient to justify the level of effort in calculating the total associated carbon emissions nor were there any appropriate emissions factors available for use.

Additionally, emissions associated from transportation of waste in waste collection vehicles operated by the waste contractor are not included in the emissions calculation for waste generated in 2024.

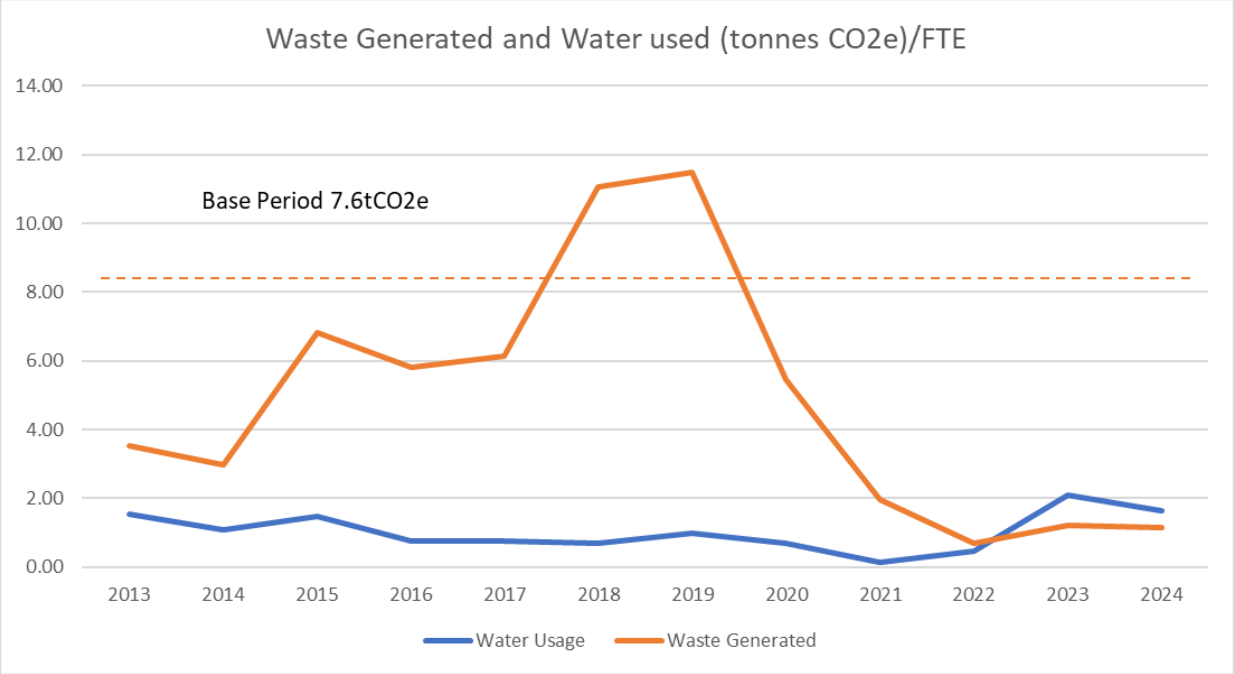


Figure 15: Waste and Water trends (tCO_2e)

4.3.3.4 Purchased Goods and Services - Water Usage

Water usage is the only EPA activity included from Purchased Goods and Services. Water consumption by the EPA is mainly for domestic and laboratory analytical purposes. Continuous monitoring of water usage is the most useful way to detect leaks or anomalies.

The emissions associated with water usage is insignificant in comparison to the other Scope 3 activities; however, water is a precious resource, and the EPA are committed to ensure that water conservation and consumption is tracked across all locations.

Significant progress on water management has been made in the EPA over the last ten years. Meter reading/OPW metered readings are in place at all EPA locations. Rainwater harvesting is used in Wexford for toilet flushing and topping up of the firefighting pond. Drinking water filtration systems have been installed on mains water for drinking, preventing the generation of plastic bottles for drinking water. Water conservation projects have been rolled out in Dublin, Wexford, and Kilkenny where reduced flush cisterns, tap restrictors and waterless urinals have been installed.

Emissions associated with water usage in 2024 (2.08 tCO2e) decreased by 21% in comparison to the 2023 emissions, although they still represent a considerable increase (127%) when compared to the Base Period emissions.

4.4 Base Period (2016-2018) Emissions Profile

The chosen base period is an average of total emissions from 2016, 2017 and 2018 inclusive. See Figure 16 which shows the total emissions for 2019 - 2024 in comparison to the base period average. These years were selected as a representative benchmark from which to compare our carbon emissions to. It should be noted total emissions in 2024, while lower than 2023, were 2.85% higher [36 tonne CO2e] than 2022 levels. However, the lower 2022 emissions are likely attributable to the impact of COVID-19, and an increase in 2023 was expected as normal operations resumed. The subsequent reduction in 2024, combined with emissions remaining 35% lower than the base period (1,194 tCO_2e vs. 1,826.84 tCO_2e), is a positive outcome, particularly in the context of growing staff numbers. We continue our efforts to reduce carbon emissions across all of our operations.

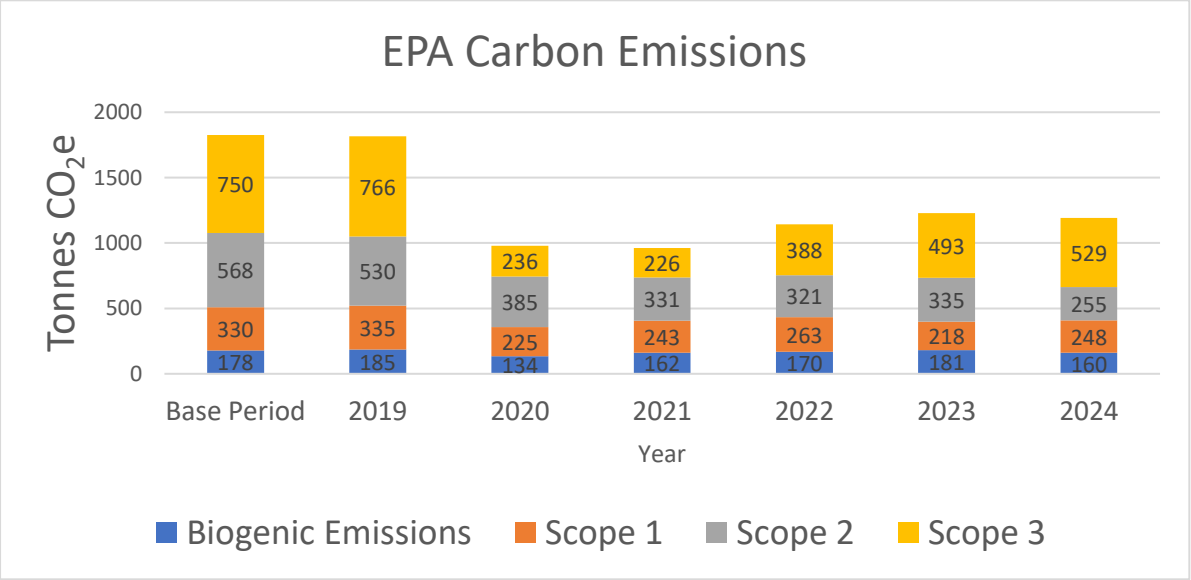


Figure 16: Total Emissions 2019-2024 by Scope (tCO_2e)

Figure 17 below provides an indicative trendline for carbon emissions since the 2016–2018 base period. It is anticipated that we will face continued challenges in maintaining emissions at or below the 35% reduction achieved to date, particularly as we continue to operate in the post-pandemic era. This challenge is further compounded by ongoing growth in staff numbers, which places additional demand on our operations. Nonetheless, the downward trend in emissions remains a positive indicator of our continued commitment to carbon reduction.

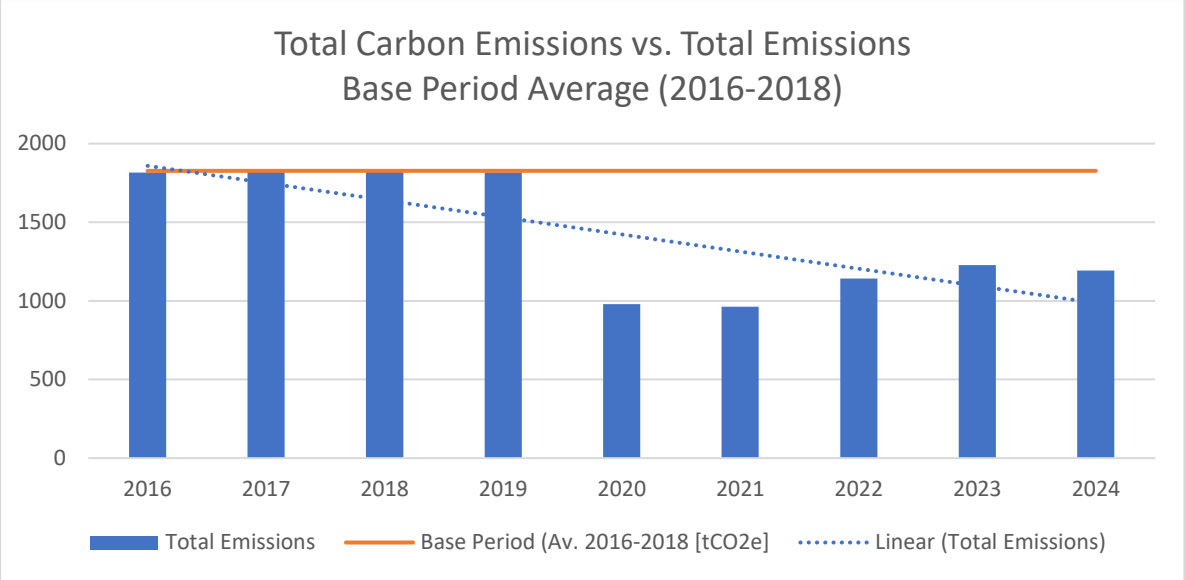


Figure 17: Total Carbon Emissions per year tracked against Base Period average (tCO_2e)

4.5 Exclusions

The Scope 3 activities detailed in Table 12 have been excluded from the EPA Carbon Report for 2024. The EPA's ambition is to add activities that have a material impact on emissions as soon as the data becomes readily available. Consequently, Scope 3 inclusions will need to be periodically reviewed using the materiality matrix tool.

Table 12: Scope 3 Exclusions Carbon Report 2024

Scope 3 (Indirect) emissions	EPA Activity
Purchased goods and services (downstream)	Offsite Storage of EPA Files, Outsourced contractor services – legal, consultancy, maintenance, IT, Security, monitoring, Events management, Courier Services, Landscaping,
Fuel and Energy related activities (not included in scope 1 or scope 2) (downstream)	Other fuels - sampling activities, pumps boats,
Use of sold products (downstream)	Use of product distributed during EPA Events
Upstream Fuel and Energy related activities (not included in scope 1 or scope 2)	Fuel and Energy used in upstream activities (e.g. fuel/energy used in power generation)
Purchased goods and services (Upstream)	Laboratory supplies, Stationary, Paper, Ink, IT Services, IT equipment Construction materials, Outsourced Contractor services - Construction Facilities fit out (maintenance, carpets, painting, lighting) Provision of Clean Water
Upstream capital goods including vehicles, plant, buildings, and equipment	Laboratory Equipment (machines), Vehicles and Plant, Furniture
Upstream transportation and distribution	Fuel used in the transport of Purchased Goods and Services

Scope 3 (Indirect) emissions	EPA Activity
Upstream waste generation	Waste generated in the manufacture/supply of Purchased Goods and Services

5 GHG Reduction Initiatives and Performance tracking

We have identified opportunities to demonstrate leadership as a public sector climate conscious organisation. Making public commitments and taking action to reduce carbon emissions is a priority for the EPA. We are also committed to staff engagement and participation in the climate conversation through facilitating a collective understanding of the EPA's own carbon emissions. This will enable better understanding for staff and wider stakeholders the issues involved and allow individual ownership of CO_2 emissions reduction efforts.

5.1 Reduction Initiatives Summary 2024

Ireland's Climate Action Plan up to 2030 includes ambitious reductions and changes in energy use by way of a decarbonisation pathway and as such we are well placed to continue energy and carbon reduction initiatives with further building improvements planned for decarbonising heating fuels in our buildings, lighting upgrades with energy efficient LED, expansion of Solar PV, moving towards decarbonising our vehicles and a continued focus on the reduction of carbon emissions.

In order to build on our successes to date, we carried out detailed energy audits of all EPA buildings in order to identify both 'quick wins' and strategic ways to reduce carbon emissions and increase our energy efficiency. We are investing in more renewable heating solutions, efficient building systems and have developed a three-year rolling plan to increase efficiency and reduce emissions through improvement of building fabric (insulation, glazing, air tightness), adding of additional solar PV, LED, and geothermal solutions.

Prioritisation and selection of solutions are based on availability of budget, life-cycle costing, predicted carbon savings, energy efficiency gains and business continuity. We are committed to improving the energy efficiency of our buildings beyond 50%, and bring buildings to a minimum Non-Domestic Building Energy Rating (NDBER) of B.

5.2 Public Sector Statutory Performance Tracking obligations

The Climate Action Plan, 2024, requires public bodies to reduce energy related GHG emissions by 51% in 2030, with an improvement in energy efficiency in the public sector by 50% by 2030. We have surpassed the energy efficiency target with a reduction in our energy demand of 58% at the end of 2024 (Note: baseline figure for energy efficiency is 2006-2008). Figure 18 and Figure 19 detail the updated EPA Energy Performance Indicator profile 2006-2024.

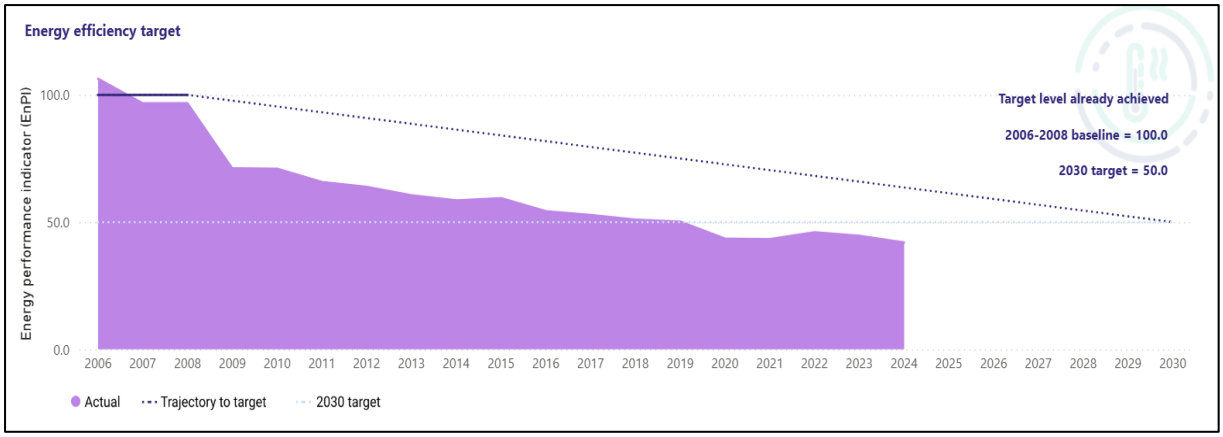


Figure 18: EPA Energy Performance Indicator Profile 2006-2024

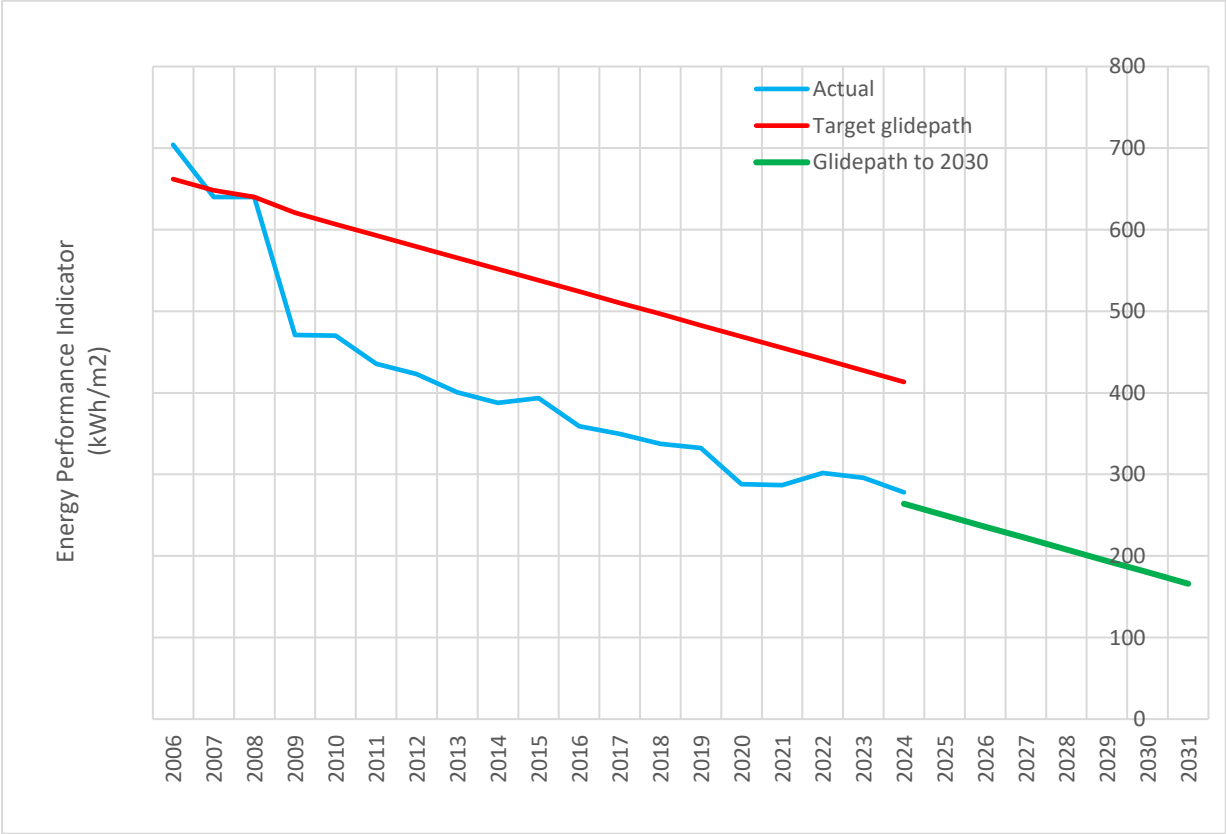


Figure 19: EPA Energy Performance Indicator 2006-2024 kWh/m2

6 NEXT STEPS

We have made significant progress in 2024 evaluating and calculating the Carbon footprint associated with our activities. The commitment to obtaining accurate and meaningful carbon data is evident in the quality of empirical data collected and used as the basis for this report. To improve the accuracy of carbon reporting in the future there are a number of points to consider which are set out below.

6.1 Improvement plans for Scope 3 data capture.

6.1.1 Category 1 – Purchase goods and services

As outlined in Section 3.2 the materiality matrix was developed in 2021 to assist with the screening process for future inclusions into Scope 3. Plans are in place to review this matrix to ensure that any potential activities from this category can be captured and included in future carbon emission reports.

6.1.2 Category 5 – Waste

The waste category does not include hazardous waste, nor does it include transport emissions from waste collection vehicles travelling from EPA locations to the various waste treatment destinations. All waste streams and activities associated with waste collection will be included in future reports once data is available.

6.1.3 Category 6 – Business travel

During 2022, the SEAI required all Public Sector bodies to report emissions data on business travel by public transport. This data capture is facilitated through expenses reports in the EPA's Core system and once available, the carbon emissions can be calculated via the Carbon accounting software platform.

A complete review of all employee vehicles used for mileage expense claims will be undertaken to facilitate the improved accuracy of the Carbon emissions generated for various VRT bands assigned.

6.1.4 Category 7 – Commuting

The response rate to the 2024 employee commuting survey was vastly improved in comparison to the 2021 survey results. The 2024 survey format was revised with more targeted questions to streamline the data collation and extrapolation process, providing more comprehensive and accurate data. The commuter survey will follow a similar format in 2026.

7 CONCLUSION

This Carbon Report presents the EPA's total calculated carbon emissions arising from Scope 1, Scope 2 and Scope 3 activities of the EPA in 2024. The methods used for creating the Base Period carbon data have also been detailed.

The average Base Period emissions for 2016-2018 are 1,827 tCO2e. Carbon emissions in 2024 were 34% below that figure at 1,194 tCO2e.

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Appendix A

Emission Factors

Scope	Activity Name	Activity Input	Emission Type	Publisher	Publication Title	Date Emission Factor Published	Published Emission Factor	CO_2e Units
Biogenic Emissions	**Stationary Combustion**	Bio-LPG	Biofuel CO_2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.232236**	kg CO2e/kWh
		Wood Chips	CO_2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.35**	kg CO_2e /kWh
Scope 1	**Stationary Combustion**	Bio LPG	CO_2e	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.000322**	kg CO2e/kWh kg CO2e/kWh
		LPG	CO_2	**SEAI**	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**08 Jul 2024**	**0.229284**	
		Kerosene	CO_2	**SEAI**	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**31 May 2024**	**0.257**	kg CO_2e /kWh
		Natural Gas	CO_2	**SEAI**	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**31 May 2024**	**183.97737**	g CO_2e /kWh
		WoodChip	CO_2e	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.01132**	kg CO2e/kWh
	Mobile Combustion - EPA Owned Fleet	Diesel	CO_2	**SEAI**	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**31 May 2024**	**2.683306**	kg CO_2e /L
		Petrol	CO_2	**SEAI**	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**31 May 2024**	**2.310723**	kg CO_2e /L
Scope 2	**Electricity**	Electricity	CO_2	**AIB**	European Residual Mixes. Results of the calculation of Residual Mixes for the calendar year 2023	**30 May 2024**	**445.495073**	g CO_2e /kWh

				SEAI	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**31 May 2024**	**229.852496**	g CO_2e /kWh
Scope 3	**Air Business Travel**	International, to/from non-UK - Economy class	CH_4	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00001**	kg CO_2e /pkm
			CO_2				**0.0repe7880**	kg CO_2e /pkm
			N_2O				**0.00067**	kg CO_2e /pkm
			RF CO_2				**0.13397**	kg CO_2e /pkm
		Short-haul, to/from UK - Economy class	CH_4	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00001**	kg CO_2e /pkm
			CO_2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.10703**	kg CO_2e /pkm
			N_2O	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00090**	kg CO_2e /pkm
			RF CO_2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.18196**	kg CO_2e /pkm
	Public Transport - Business Travel	Bus - Coach	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.02668**	kg/pkm
			CH4	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00001**	kg/pkm
		Regular taxi	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.14742**	kg/pkm
			CH4	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.000003**	kg/pkm
			N20	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00119**	kg/pkm
		Tram	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.040214**	kg/pkm
			CH4	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00017**	kg/pkm
			N20	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.000227**	kg/pkm
		Light Rail	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.02832**	kg/pkm

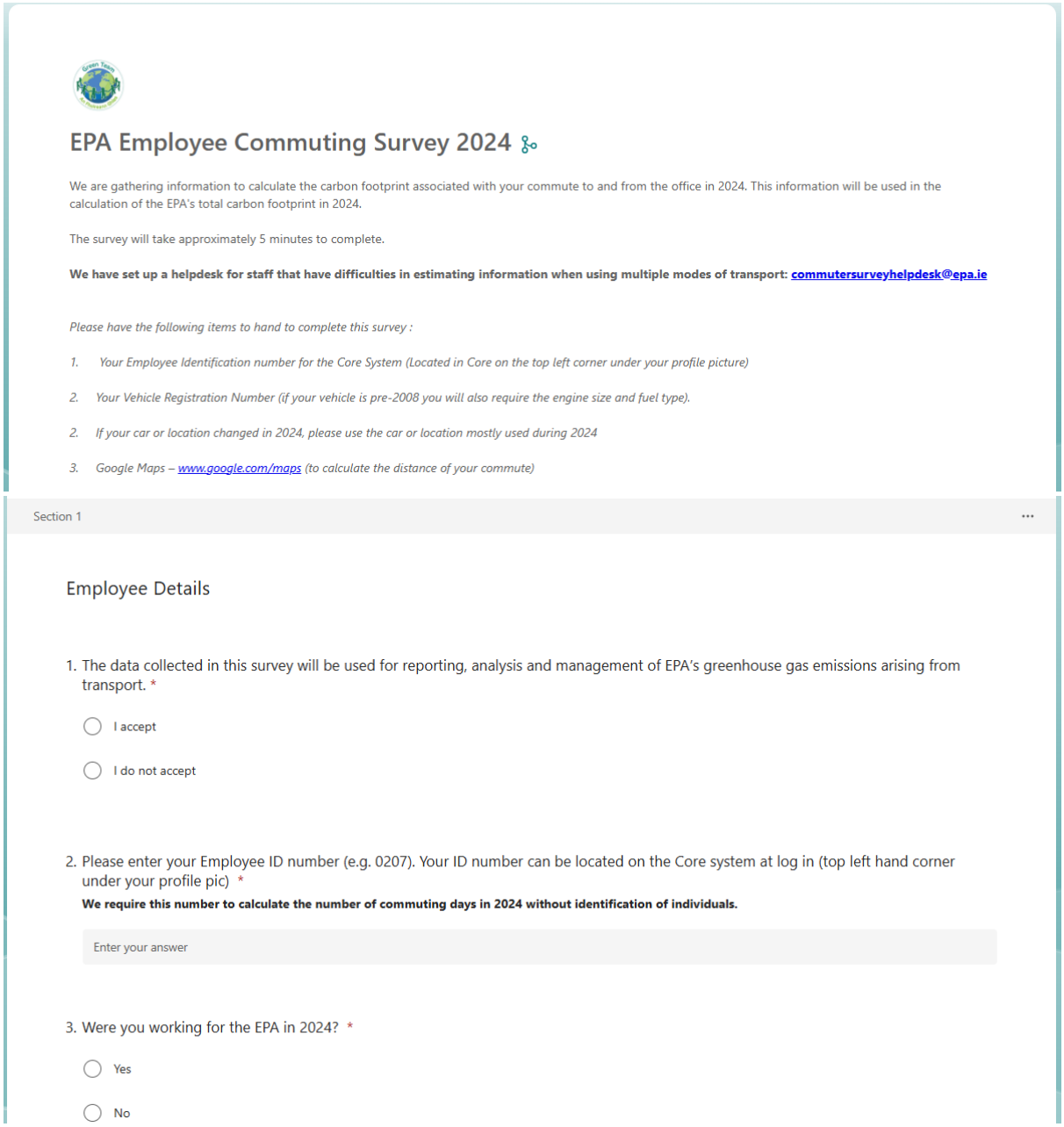
			CH4	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00012**	kg/pkm
			N20	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00016**	kg/pkm
		National Rail	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.0351**	kg/pkm
			CH4	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.000533**	kg/pkm
			N20	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.001865**	kg/pkm
	Business Travel - Employee Mileage	Petrol Car, 0.9-1.2 Litre engine	CO2	**SEAI**	Sustainable Energy Authority of Ireland	**13/06/2008**	**0.14**	kg/vkm
		Petrol Car, 1.21-1.5 Litre engine	CO2	**SEAI**	Sustainable Energy Authority of Ireland	**13/06/2008**	**0.155**	kg/vkm
		Petrol Car, 1.51-1.7 Litre engine	CO2	**SEAI**	Sustainable Energy Authority of Ireland	**13/06/2008**	**0.17**	kg/vkm
		Petrol Car, 1.71-1.9 Litre engine	CO2	**SEAI**	Sustainable Energy Authority of Ireland	**13/06/2008**	**0.19**	kg/vkm
		Petrol Car, >1.9 Litre engine	CO2	**SEAI**	Sustainable Energy Authority of Ireland	**13/06/2008**	**0.225**	kg/vkm
		Diesel Car, 1.2-1.5 litre engine	CO2	**SEAI**	Sustainable Energy Authority of Ireland	**13/06/2008**	**0.14**	kg/vkm
		Diesel Car, 1.71-1.9 litre engine	CO2	**SEAI**	Sustainable Energy Authority of Ireland	**13/06/2008**	**0.17**	kg/vkm
		Diesel Car, >1.9 litre engine	CO2	**SEAI**	Sustainable Energy Authority of Ireland	**13/06/2008**	**0.19**	kg/vkm
	Business Travel - Mileage	VRT Band A0 zero grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0**	kg CO_2e /vkm
		VRT Band A1 1-80 grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0.08**	kg CO_2e /vkm

		VRT Band A2 81-100 grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0.1**	kg CO_2e /vkm
		VRT Band A3 101-110 grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0.11**	kg CO_2e /vkm
		VRT Band A4 111-120 grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0.12**	kg CO_2e /vkm
		VRT Band B1 121-130 grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0.13**	kg CO_2e /vkm
		VRT Band B2 131-140 grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0.14**	kg CO_2e /vkm
		VRT Band C 141-155 grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0.155**	kg CO_2e /vkm
		VRT Band D 151-170 grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0.17**	kg CO_2e /vkm
		VRT Band E 171-190 grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0.19**	kg CO_2e /vkm
		VRT Band G more than 225 grams CO2/km	CO2	**SEAI**	Sustainable Energy Authority Ireland	**13/06/2008**	**0.26**	kg CO_2e /vkm
	Electricity	Electricity	T&D CO2	**SEAI**	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**31 May 2024**	**24.902083**	g CO_2e /kWh
	Employee Commuting - Bus	Bus - Coach	CH4	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.02668**	kg/pkm
			CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00001**	kg/pkm
			N2O	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00048**	kg/pkm

	Employee commuting - Inter-modal	CO2 equivalent	CO2e	**IPCC**	IPCC, 2013: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.	**30 Sep 2013**	**1**	mt CO_2e /mt
	Employee commuting - Road	Diesel	CO2	**SEAI**	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**31 May 2024**	**2.682652**	kg CO_2e /L
		E10 Ethanol/Gasoline	CO2	**SEAI**	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**31 May 2024**	**2.120054**	kg CO_2e /L
		Electricity	CO2	**SEAI**	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**31 May 2024**	**0.3246**	kg CO_2e /kWh
		Petrol	CO2	**SEAI**	Workbook of Energy conversion and emission factors for publication on SEAI website (v1.3).	**31 May 2024**	**2.355616**	kg CO_2e /L
	Employee Commuting - Train	National rail	CH4	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.0351**	g CO_2e /pkm
			CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00008**	g CO_2e /pkm
			N2O	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.00028**	g CO_2e /pkm
	Waste	Mixed municipal waste - Energy Recovery - Combustion	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**6.41061**	kg CO_2e /mt
		Mixed municipal waste - Recycling - Open Loop	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**6.41061**	kg CO_2e /mt
		Organic Waste: Food and Drink Waste – Composting	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**8.88386**	kg CO_2e /mt

		Paper and board: Board (Av. board: 78% corrugate, 22% cartonboard) - Recycling - Closed loop	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**6.41061**	kg CO_2e /mt
		Paper and board: Paper - Recycling - Closed loop	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**6.41061**	kg CO_2e /mt
	Water Usage	Water Supply	CO2	**DEFRA/DECC**	2024 UK Government GHG Conversion Factors for Company Reporting	**08 Jul 2024**	**0.15311**	kg CO_2e /cu. m

Appendix B
Commuter Survey 2024



EPA Employee Commuting Survey 2024

We are gathering information to calculate the carbon footprint associated with your commute to and from the office in 2024. This information will be used in the calculation of the EPA's total carbon footprint in 2024.

The survey will take approximately 5 minutes to complete.

We have set up a helpdesk for staff that have difficulties in estimating information when using multiple modes of transport: commutersurveyhelpdesk@epa.ie

Please have the following items to hand to complete this survey :

1. *Your Employee Identification number for the Core System (Located in Core on the top left corner under your profile picture)*
2. *Your Vehicle Registration Number (if your vehicle is pre-2008 you will also require the engine size and fuel type).*
2. *If your car or location changed in 2024, please use the car or location mostly used during 2024*
3. *Google Maps – www.google.com/maps (to calculate the distance of your commute)*

Section 1

Employee Details

1. The data collected in this survey will be used for reporting, analysis and management of EPA's greenhouse gas emissions arising from transport. *

- ◯ I accept
- ◯ I do not accept

2. Please enter your Employee ID number (e.g. 0207). Your ID number can be located on the Core system at log in (top left hand corner under your profile pic) *

We require this number to calculate the number of commuting days in 2024 without identification of individuals.

Enter your answer

3. Were you working for the EPA in 2024? *

- ◯ Yes
- ◯ No

4. Please select your designated EPA Location in 2024 *

- ◯ Castlebar (including Athlone)
- ◯ Clonskeagh Square, Dublin
- ◯ Cork
- ◯ Kilkenny
- ◯ Monaghan
- ◯ Richview, Dublin
- ◯ Johnstown Castle, Wexford

5. What office were you assigned to in 2024? *

- ◯ ODG
- ◯ OCCS
- ◯ OEA
- ◯ OEE
- ◯ OES
- ◯ ORM

Section 2

Total Daily Commute in 2024

6. What is your total **daily** commute in kilometres? This refers only to your commute from home to work to home - not site inspections or other business travel.
Note: Multiply your one-way daily commute by 2 to get total KM travelled **each day**.
*

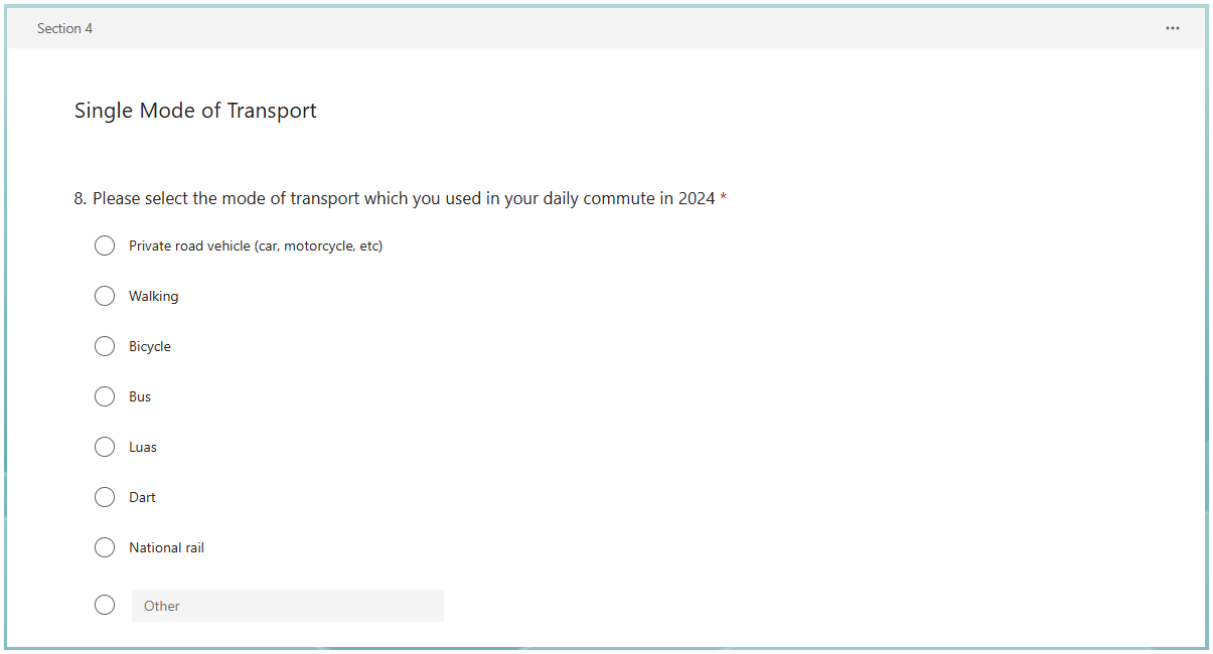
The value must be a number

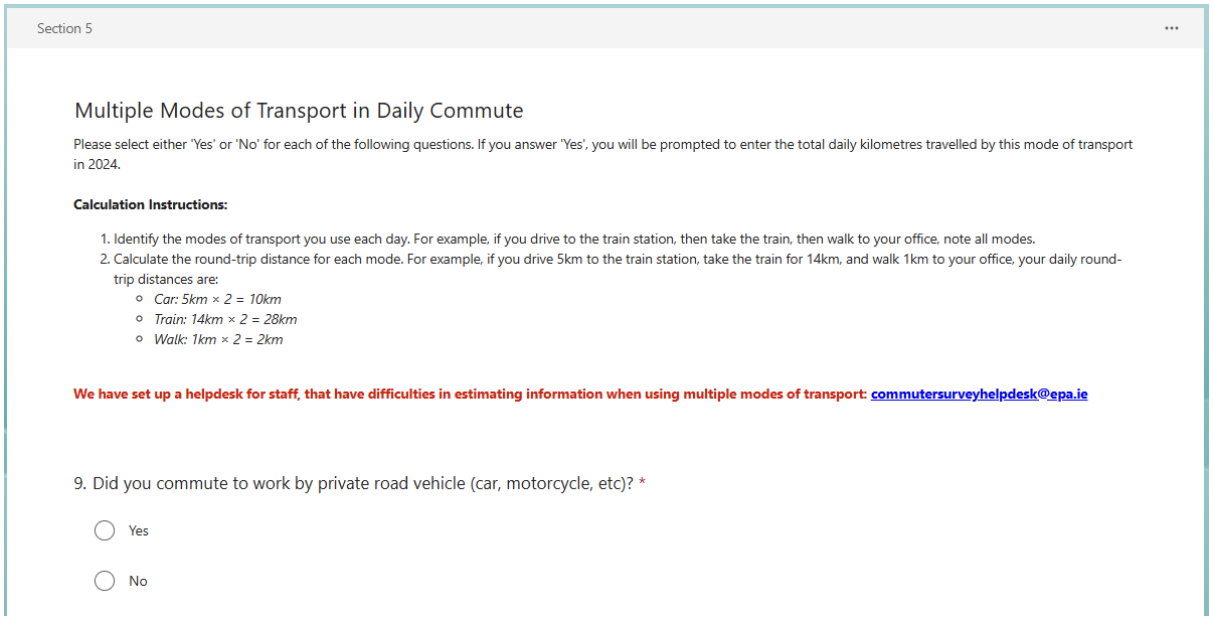
Section 3

How did you commute to work in 2024?

7. Please select the commuting pattern that applies to you: *

- ◯ I used a single mode of transport in my daily commute (i.e., car only)
- ◯ I used multiple modes of transport in my daily commute (i.e., car and train)
- ◯ I used alternate modes of transport to commute to work on different days (i.e., car 2 days; bicycle 3 days)


Section 4
Single Mode of Transport
8. Please select the mode of transport which you used in your daily commute in 2024 *
Private road vehicle (car, motorcycle, etc)
Walking
Bicycle
Bus
Luas
Dart
National rail
Other


Section 5
Multiple Modes of Transport in Daily Commute
Please select either 'Yes' or 'No' for each of the following questions. If you answer 'Yes', you will be prompted to enter the total daily kilometres travelled by this mode of transport in 2024.
Calculation Instructions:
1. Identify the modes of transport you use each day. For example, if you drive to the train station, then take the train, then walk to your office, note all modes.
2. Calculate the round-trip distance for each mode. For example, if you drive 5km to the train station, take the train for 14km, and walk 1km to your office, your daily round-trip distances are:
Car: 5km × 2 = 10km
Train: 14km × 2 = 28km
Walk: 1km × 2 = 2km
We have set up a helpdesk for staff, that have difficulties in estimating information when using multiple modes of transport: commutersurveyhelpdesk@epa.ie
9. Did you commute to work by private road vehicle (car, motorcycle, etc)? *
Yes
No

10. How many kilometres did you travel by private road vehicle in your daily commute? *

The value must be a number

11. Did you commute to work by walking? *

- Yes
- No

12. How many kilometres did you travel by walking in your daily commute? *

The value must be a number

13. Did you commute to work by bicycle? *

- Yes
- No

14. How many kilometres did you travel by bicycle in your daily commute? *

The value must be a number

15. Did you commute to work by bus? *

- Yes
- No

16. How many kilometres did you travel by bus in your daily commute? *

The value must be a number

17. Did you commute to work by Luas? *

- Yes
- No

18. How many kilometres did you travel by Luas in your daily commute? *

The value must be a number

19. Did you commute to work by Dart? *

- Yes
- No

20. How many kilometres did you travel by Dart in your daily commute? *

The value must be a number

21. Did you commute to work by national rail? *

- Yes
- No

22. How many kilometres did you travel by national rail in your daily commute? *

The value must be a number

23. Did you commute to work by other modes of transport not listed above? *

- Yes
- No

24. Please list the other modes of transport used *

Enter your answer

25. How many kilometres did you travel by other modes of transport in your daily commute? *

The value must be a number

Section 6

Alternate Modes of Transport

Please select either 'Yes' or 'No' for each of the following questions. If you answer 'Yes', you will be prompted to enter the percentage of total daily commutes travelled by this mode of transport in 2024. For example, if you commute by car on some days and by bike on other days, you will need to estimate the percentage of daily commutes travelled by each mode (i.e., 60% of all commutes were by bike, and 40% were by car).

We have set up a helpdesk for staff, that have difficulties in estimating information when using multiple modes of transport: commutersurveyhelpdesk@epa.ie

26. Did you commute to work by private road vehicle (i.e., car, motorcycle)? *

- Yes
- No

27. What percentage of total daily commutes were travelled by private road vehicle? *

The value must be a number

28. Did you travel to work by walking? *

- Yes
- No

29. What percentage of total daily commutes were travelled by walking? *

The value must be a number

30. Did you travel to work by bicycle? *

- Yes
- No

31. What percentage of total daily commutes were travelled by bicycle? *

The value must be a number

32. Did you travel to work by bus? *

- Yes
- No

33. What percentage of total daily commutes were travelled by bus? *

The value must be a number

34. Did you travel to work by Luas? *

- Yes
- No

35. What percentage of total daily commutes were travelled by Luas? *

The value must be a number

36. Did you travel to work by Dart? *

- Yes
- No

37. What percentage of total daily commutes were travelled by Dart? *

The value must be a number

38. Did you travel to work by national rail? *

- Yes
- No

39. What percentage of total daily commutes were travelled by national rail? *

The value must be a number

40. Did you commute to work by other modes of transport not listed above? *

- ◯ Yes
- ◯ No

41. Please list the other modes of transport used *

Enter your answer

42. What percentage of total daily commutes were travelled by 'other' modes of transport? *

The value must be a number

Section 7

VRT Bands

For cars sold since 2008, you can find your VRT band and associated CO2 emissions here (click on 'Motor Tax Rates' on the right side of the screen):
https://www.motortax.ie/OMT/motortaxreg.do
If you do not travel by car, please select 'I don't use a car to commute' from the dropdown list.

43. Please select your VRT band from the drop down list below:

Select your answer

44. If you don't have a VRT band, what is the engine size of your vehicle?

Select your answer

Section 8

You have reached the end of this survey

45. Thank you for your time. If you would like to provide us with feedback on the survey, please do so in the box below:

Enter your answer

Appendix C

Emissions Inventory Report

GHG Protocol Emissions Inventory Report	
Company:	**EPA**
Scope:	1, 2, 3, Biogenic Emissions, Outside of Scopes
Source Categories:	Purchased and Used Electricity, Stationary Combustion, Mobile Combustion - Owned Fleet, Employee Business Travel, Employee Commuting, Water, Waste, Electricity Generation
Activity Types:	Stationary Fuel Use, Purchased & Used Electricity, Road Transport, Rail Transport, Water Transport, Air Transport, Water, Waste, Electricity Generation, Intermodal Travel
Organisation Level:	Castlebar, Cork, Dublin, Kilkenny, Wexford (Headquarters), Monaghan
Period:	**01/01/2024 - 31/12/2024**
Report Create Date:	*30/07/2025 15:55:45*

GHG Emissions disaggregated by Scope			
Scope Name	**tonne**	**tonne Location Based**	**tonne Market Based**
Biogenic Emissions	164.93	0.00	0.00
Scope 1	244.86	0.00	0.00
Scope 2		254.58	493.41

Scope 3	529.46	0.00	0.00

GHG Emission Categories by Scope				
Scope	**Biomass**	**CO2**	**CH4**	**N2O**
Biogenic Emissions	164.931646000			
Scope 1		244.856408000		
Scope 2				
Location based		254.575372000		
Market based		493.412406000		
Scope 3		529.112205000	0.006985000	0.339811000

CO2 Emissions from Biogenic combustion (Biomass) in tonnes CO2

Carbon Offsets Purchased in tonnes CO2

Carbon Captured and Stored in tonnes CO2

GHG Emissions Summary		
	tonne CO2e Location based	tonne CO2e Market based
Gross Emissions (Scope 1, 2, 3)		
Scope 1	244.86	244.86
Scope 2	254.58	493.41

Scope 3	529.46	529.46
Climate Mitigation		
Net Emissions	1001.31	1240.15

Scope 1, 2, 3 Emissions disaggregated by Activity End Use		
Activity End Use	**tonne CO2e** **Location based**	**tonne CO2e** **Market based**
Business Travel	240.37	240.37
Employee Commuting	290.38	290.38
Facility Electricity Supply	282.16	493.41
Facility Heating	152.07	152.07
Facility Waste Disposal	1.16	1.16
Facility Water Supply	1.64	1.64
Not Specified	61.12	61.12

Scope 1 Emissions Breakdown

Scope 1 Emissions disaggregated by GHG Type	
GHG Type	**Scope 1 tonne CO2e**
Carbon Dioxide	239.67
CO2e	5.19

Scope 1 Emissions disaggregated by Source Category

Source Category	Scope 1 tonne CO2e
Mobile Combustion - Owned Fleet	92.79
Stationary Combustion	152.07

Scope 1 Emissions disaggregated by Country/Region	
Country/Region	**Scope 1 tonne CO2e**
Ireland	244.86

Scope 1 Emissions disaggregated by Facility	
Facility	**Scope 1 tonne CO2e**
EPA Regional Inspectorate Dublin	97.51
EPA Regional Inspectorate Kilkenny	30.72
EPA Regional Inspectorate Monaghan	10.48
EPA Headquarters,	26.65
EPA Regional Inspectorate Castlebar	49.74
EPA Regional Inspectorate Cork	29.76

Scope 2 Emissions Breakdown

Scope 2 Emissions disaggregated by GHG Type		
GHG Type	**Scope 2 tonne CO2e Location based**	**Scope 2 tonne CO2e Market based**
Carbon Dioxide	254.58	493.41

Scope 2 Emissions disaggregated by Source Category		
Source Category	**Scope 2 tonne CO2e Location based**	**Scope 2 tonne CO2e Market based**
Purchased and Used Electricity	254.58	493.41

Scope 2 Emissions disaggregated by Country/Region		
Country/Region	**Scope 2 tonne CO2e Location based**	**Scope 2 tonne CO2e Market based**
Ireland	254.58	493.41

Scope 2 Emissions disaggregated by Facility		
Facility	**Scope 2 tonne CO2e Location based**	**Scope 2 tonne CO2e Market based**
EPA Regional Inspectorate Dublin	48.29	93.59
EPA Regional Inspectorate Kilkenny	18.99	36.81

EPA Regional Inspectorate Monaghan	19.30	37.40
ClonskeaghSq	61.42	119.05
EPA Headquarters,	84.02	162.85
EPA Regional Inspectorate Castlebar	11.35	22.00
EPA Regional Inspectorate Cork	11.20	21.71

Scope 3 Emissions Breakdown

Scope 3 Emissions disaggregated by GHG Type	
GHG Type	**Scope 3 tonne CO2e**
Carbon Dioxide	395.94
CO2e	80.55
Methane	0.01
Nitrous Oxide	0.34
Radiative Forcing CO2	25.04

Scope 3 Emissions disaggregated by Source Category	
Source Category	**Scope 3 tonne CO2e**
Employee Business Travel	208.70
Employee Commuting	290.38
Purchased goods and services	1.64

Waste	1.16

Scope 3 Emissions disaggregated by Country/Region	
Country/Region	**Scope 3 tonne CO2e**
Ireland	501.88

Scope 3 Emissions disaggregated by Facility	
Facility	**Scope 3 tonne CO2e**
EPA Regional Inspectorate Dublin	81.51
EPA Regional Inspectorate Kilkenny	20.10
EPA Regional Inspectorate Monaghan	14.53
Castlebar	1.88
ClonskeaghSq	0.08
Cork	2.62
Dublin	33.88
EPA Headquarters,	202.97
EPA Regional Inspectorate Castlebar	40.56
EPA Regional Inspectorate Cork	81.02
Kilkenny	1.68
Monaghan	2.61
Wexford (Headquarters) Air Business Travel	18.45

Global Warming Potentials		
Gas	**Reference**	**Global Warming Potential**
CO2	IPCC Fifth Assessment Report (AR5 - 100 year)	1
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)	1
CO2	IPCC Second Assessment Report (SAR - 100 year)	1
CO2e	IPCC Fifth Assessment Report (AR5 - 100 year)	1
CO2e	IPCC Fourth Assessment Report (AR4 - 100 year)	1
CO2e	IPCC Second Assessment Report (SAR - 100 year)	1
CH4	IPCC Second Assessment Report (SAR - 100 year)	21
CH4	IPCC Fourth Assessment Report (AR4 - 100 year)	25
CH4	IPCC Fifth Assessment Report (AR5 - 100 year)	28
N2O	IPCC Fifth Assessment Report (AR5 - 100 year)	265
N2O	IPCC Fourth Assessment Report (AR4 - 100 year)	298
N2O	IPCC Second Assessment Report (SAR - 100 year)	310