Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Climate Action Roadmap 2024

Table of Contents

Executive Summary 1

Our Progress to date 1

Delivering Action 1

1. Our People 3

1.1. Leadership and Governance for Climate Action 3

1.1.1 Climate and Sustainability Champion 4

1.2 Engaging & Training Staff 5

1.3 Senior Management training 6

2. Our Targets 8

2.1 Analysis of significant emitters 9

2.2 Achieving carbon emissions reduction targets 10

2.2.1 Our achievements under National Energy Efficiency Action Plan (NEEAP) (up to 2023) 10

2.2.2 Energy efficiency baseline 12

2.2.3 Energy efficiency in the target year if no new projects are implemented 13

2.2.3 Energy Audits 13

2.2.4 Electricity 16

2.2.5 Transport 17

2.2.6 Thermal 18

2.3 Planned projects to reduce total energy related GHG emissions 18

2.3.1 Energy Efficient Lighting (LED) 18

2.3.2 Electricity – Self Generation “Solar PV” 19

2.3.3 Energy Efficient Heating 20

2.3.4 Retrofitting 20

3. Our way of working 23

3.1 Green Public Procurement 23

3.2 Resource Use 23

3.3 Our buildings and vehicles 25

3.3.1 Display Energy Certificate 25

3.3.2 Building Stock Plans 25

3.3.3 Sustainable Building Design 26

3.3.4 Sustainable Transport 26

3.4 Our Wider Climate Action Plans 27

3.4.2 Biodiversity 28

3.4.3 Water 29

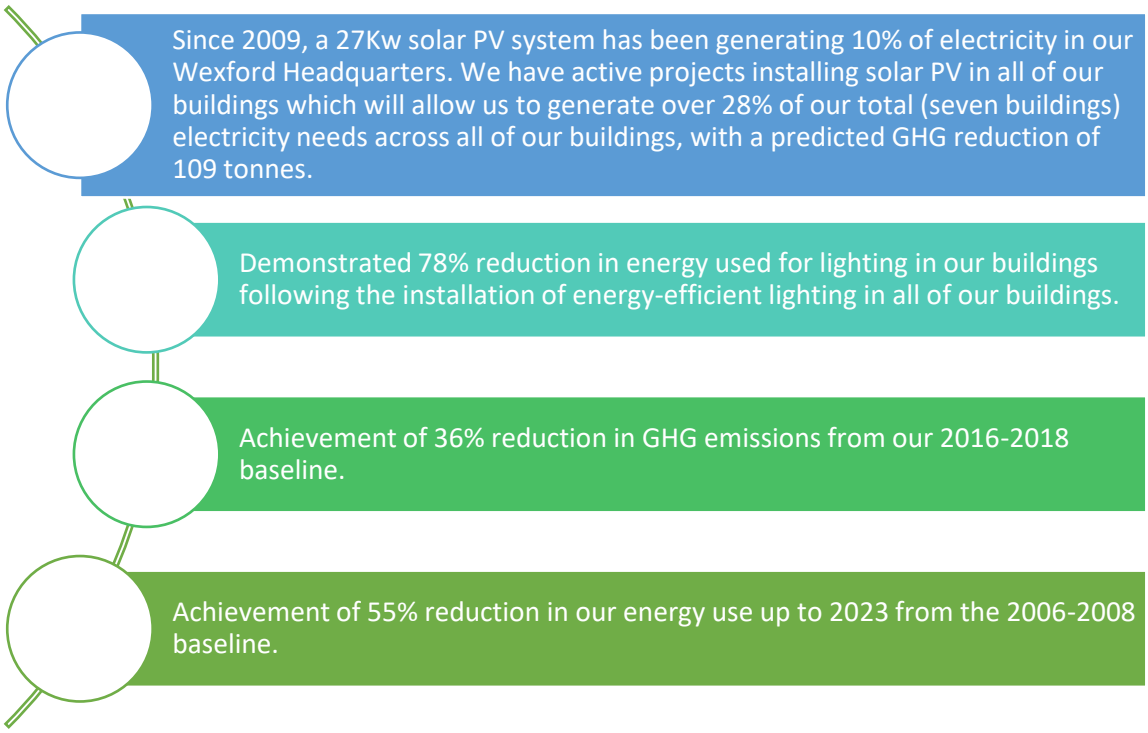
3.4.4 Waste Reduction 30
Appendix 1: EPA's Environmental Policy Statement 32
Appendix 2: Environment Management Programme, 2023 33
Appendix 3**:** Building Stock Plan 44

Executive Summary

This Climate Action Roadmap 2023 demonstrates our continued commitment and efforts undertaken to improve energy efficiency and reduce greenhouse gas (GHG) emissions across our core functions and activities. Our Roadmap outlines the further progress that we have made, and places focus on plans to meet our public sector energy efficiency and greenhouse gas (GHG) emission reduction targets in accordance with the Climate Action Plan requirements. This roadmap uses measured data up to and including 2023. Our significant emitters in 2023 were electricity (61%), thermal (heating/cooling of buildings) (23%) and transport fleet (16%).

Our Progress to date

We have made significant progress in all aspects of our environmental performance with a downward trend in consumption of energy and resources against a background of increased staff numbers, buildings, and activities. In 2023, we surpassed the 2020 national energy efficiency target of 33% with an overall energy consumption reduction of 55.3%. We have achieved and continue to maintain formal certification to ISO 14001:2015 since 2010. Using this standard, we strive to continually improve our environmental performance, and in doing so prevent pollution and encourage environmental awareness. Key achievements of note include:



Delivering Action

The Climate Action Mandate sets an energy-related GHG emission reduction target of 51% by 2030 for public bodies. Our own Strategic Plan 2022-2026 includes an interim GHG emission reduction target of at least 30% by 2026.

We have completed detailed energy audits for all our buildings and used this information to develop a three-year rolling plan for GHG reductions across all our locations. This plan builds on the steps that we have already taken toward decarbonisation. Our energy efficiency and decarbonisation projects completed to date include Energy Efficient LED lighting, Solar PV, building fabric, and low carbon heating (e.g. Biomass & Electric heat pumps). We have similar projects already underway including a significant expansion of our Solar PV across all EPA buildings. This rolling plan will make sure that we meet our longer-term ambitious goals.

Sixty-three projects have been identified for completion up to 2030, aimed at improving our energy performance and delivering a minimum 51% reduction in our GHG emissions. This represents a significant investment for the EPA and is strongly supported by our Senior Management and our Board. The projects that we have selected for the next three years, as part of our rolling plan, are those that will deliver the most significant impact on our GHG emissions.

This report provides further detail on our achievements to date and all aspects of our journey towards decarbonisation.

1. Our People

The purpose of the Environmental Protection Agency (EPA) is to protect, improve and restore our environment through regulation, scientific knowledge and working with others. Our vision is that we live sustainably in a healthy environment that is valued and protected by all.

We have a broad environmental remit and play a key role in environmental regulation, provision of knowledge and advocacy for the environment. Responsibilities include Regulation, Licensing and Enforcement, Monitoring and Reporting on the environment, Regulating and Reporting Ireland's Greenhouse Gas emissions, Research and Development, Strategic Environmental Assessment, Guidance, Education and Public Access of environmental information. 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. This is our third Climate Action Roadmap towards reducing total energy related emissions and fossil fuel related emissions from our operations in line with the targets in the Climate Action Plan 2024 (CAP24).

Our strong ethos for protecting the environment is brought through into our activities. In carrying out our role, 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 our organisation. Our long-term commitment to minimising our impact on the environment saw the establishment of our Green Team in 2004.

This report focuses on and utilises data from 2023 where, as of December 2023, we employed 476 full-time-equivalent staff (an increase of 35% since 2010 (306 FTE)) working from our Headquarters in Wexford and five Regional Inspectorates in Dublin, Cork, Kilkenny, Castlebar and Monaghan. Four of the Regional Inspectorates, Dublin, Kilkenny, Castlebar and Monaghan; also contain accredited laboratories.

1.1. Leadership and Governance for Climate Action

The EPA adopts a leadership role in the delivery of climate action and as such 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 prevent pollution, to measure and reduce our Greenhouse Gas (GHG) emissions, adapt to climate change, and encourage environmental awareness within the Agency.

We have implemented and continue to maintain an Environmental Management System (EMS) to integrate good environmental management and practices into our everyday activities. Our EMS is certified to the international standard ISO 14001 since 2010. In addition, we control and monitor hazardous waste in our laboratories using ISO 17025:2017. This systematic approach along with the dedicated work of our local and national Green Teams, in measuring and reviewing our environmental impacts has delivered solid progress, especially in reducing our energy and water usage.

1.1.1 Climate and Sustainability Champion

Our Green Team is chaired at the most senior level by the Deputy Director General (& Director of OCCS), who has been nominated also to take on the role of our Climate and Sustainability Champion. The Green Team includes an Environmental Management Representative (EMR) and Sustainability Officer, Energy Performance Officer (EPO) and Site Environmental Managers (SEMs) who are supported locally by Regional Managers and local Green Teams (with designated champion roles) in Wexford, Dublin, Cork, Monaghan, Castlebar and Kilkenny. To improve and extend our greening network within the EPA, in 2020 we revised the terms of reference of our Green Team. Our Facilities Management & Sustainability business unit is tasked with leading our projects to Green the EPA. This team, in their position as lead, provides better support, better use of resources and control of capital budgets to drive change and continuous improvement in a meaningful and structured way throughout the EPA.

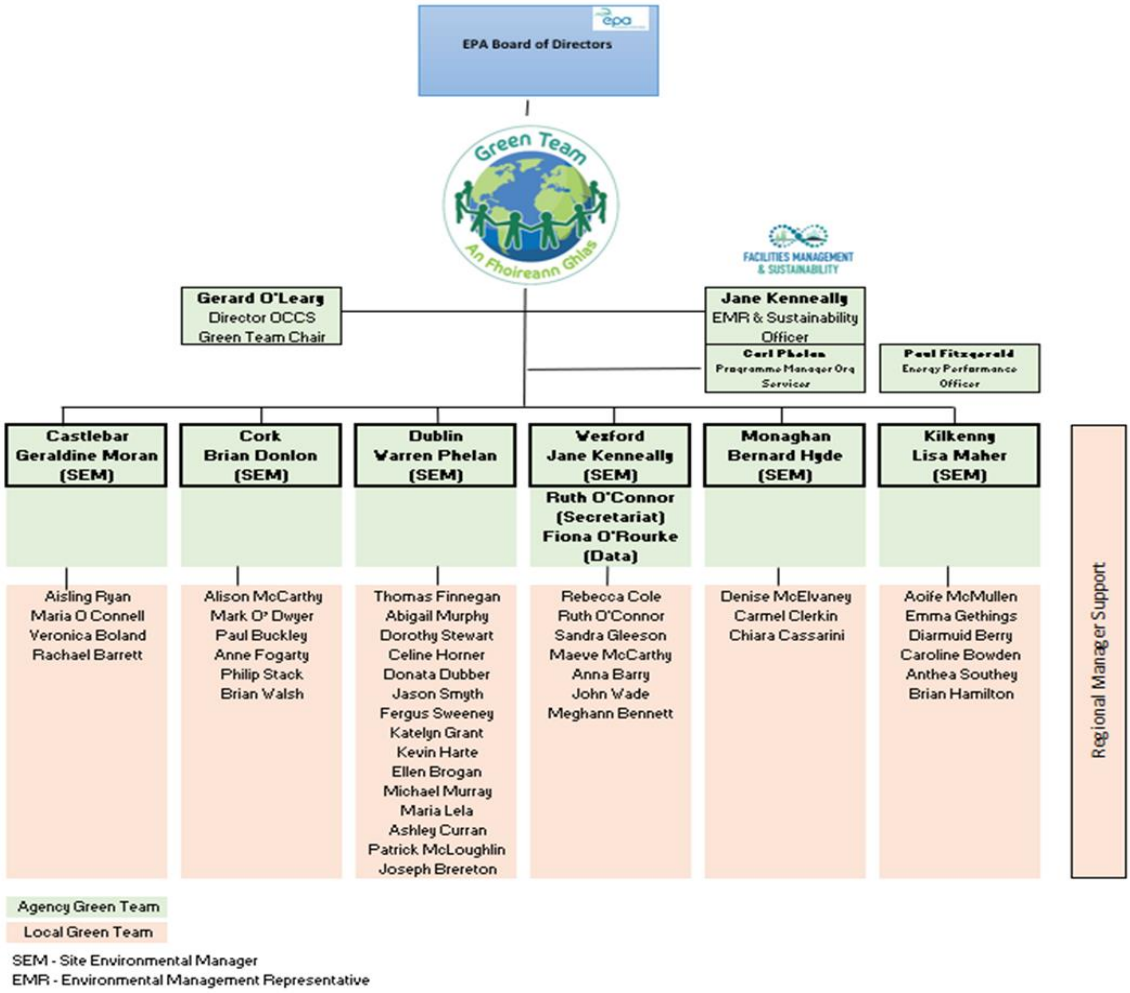


Figure 1. EPA Green Team structure

As part of our Environmental Management System, we have identified direct, and indirect environmental aspects associated with our activities. Using a risk and priority scoring (including life cycle cost, customer/staff needs) mechanism, some aspects are considered 'significant' and given priority for action or other controls put in place to mitigate impacts within the annual Environmental Management Programme (EMP). We recognise that leadership, commitment, and active support from top management are critical to the success of our environmental

management programme and for the achievement of our intended outcomes. Our current Strategic Plan, 2022-2026, recognises the need to lead by example to reduce our energy usage and carbon emissions with a commitment to reduce our carbon emissions by 30 per cent by 2026. Other activities also highlighted for action in the annual EMP include green procurement of goods and services; environmental education and awareness for staff; transport and continuous improvement and assurance which is supported by robust and accurate data.

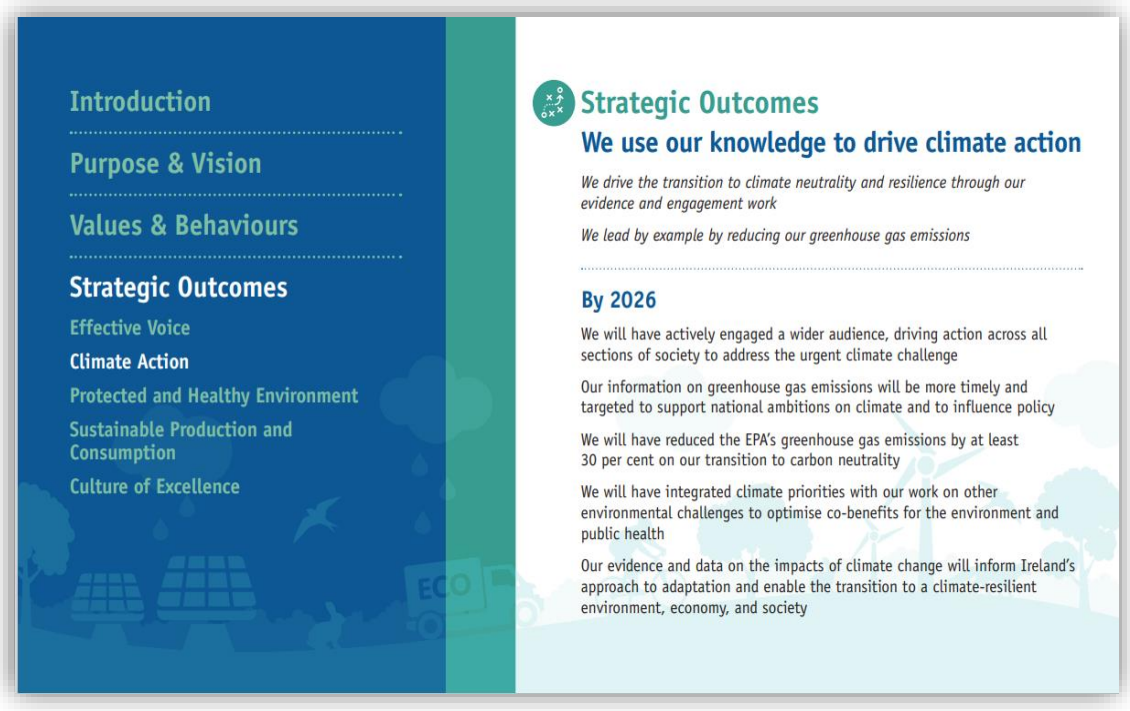


Figure 2. EPA Strategy: Climate action (excerpt)

1.2 Engaging & Training Staff

We continuously engage with our staff by promoting our Environmental Policy, our Environmental Management Programme, and our Environmental Performance. We recognise the contribution that our staff make towards maintaining and improving our environmental performance. Our annual Environmental Management Programme (EMP) is developed in consultation with staff via our Green Team and provided to our Board of Directors for approval at our ISO14001 annual management review meeting.

We recognise the importance of aligning staff goals and performance with that of the Agency; therefore, we provide training to increase engagement and encourage staff learning and development. The following training is available to staff:

- As part of ISO14001, all new staff and contractors receive environmental management induction training.
- Green Team training is available via the 'Green Team Nationals Programme' and peer learning.
- Staff energy workshops via 'Power at Work' Campaign.
- 'Reduce Your Use' campaign delivered using posters, screen displays & emails.

- Eco-driving training.
- Energy Management Accreditation Programme (EMAP) training is provided via the SEAI for key staff.
- Basic carbon and energy training is provided for key staff; and
- Green Public Procurement (GPP) training is provided to all staff.
- Green Laboratory programme Labs

Members of the EPA's Facilities Management and Sustainability team have completed the SEAI Carbon Basics and EMAP training and led by the EPO, fully engage in the SEAI's Public sector partnership programme. We incorporate climate action training into ongoing staff learning and development (e.g. GPP and induction training).

1.3 Senior Management training

The EPA is a highly technical organisation with responsibility for protecting the environment. Much of our work is at the coalface of climate adaptation and mitigation. The EPA's role in addressing climate change challenges includes collating national greenhouse gas emissions and projections; regulating emissions from industrial sectors; supporting climate science research; supporting behavioural change, driving the national circular economy agenda and facilitating the national dialogue on Climate Action. All EPA work programmes have embedded Climate Action measures included.

Our work programmes (as directed by senior managers) demonstrate leadership in driving Climate Action. The EPA's Corporate Strategy includes the action "*We use our knowledge to drive climate action"*. As part of the Strategy implementation the EPA's Senior Management Network (SMN- including Programme Managers and Directors) meet periodically to discuss and report progression on various climate actions within their respective work programmes. We will continue to develop the training requirements for Senior Management to maintain a strong focus on our emission reduction targets.

Communication with staff

Environmental performance reports are published periodically, summarising our activities and achievements under our Greening the EPA programme. Environmental performance reports are made available to staff via our intranet, work vivo platform, electronic information screens in canteens and reception areas and published to the EPA's website also.

Figure 3 Green Team Network conference

Communication on our Green Team activities is a key part of keeping our staff engaged and informed. Communication channels include intranet, staff electronic notice boards, Workvivo platform, emails, articles in the internal newsletter, posters, information, and awareness talks and events, and briefings at regional meetings. We will continue to use these channels to report progress, encourage action and listen for feedback on Greening the EPA.

As part of our certification requirements under ISO 14001:2015, an annual management review meeting is held with our Board to discuss the continuing adequacy of the environmental management system and to make sure that it continues to work for us in support of our goals. This is an opportunity to review and update our environmental policy and to guarantee compliance with the ISO 14001 Standard.

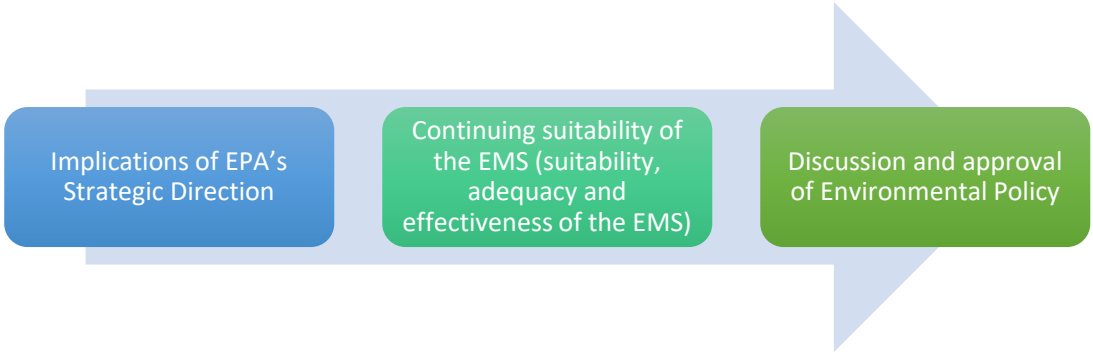


Figure 4. ISO 14001 requirements for Management Review

We are committed to continued employee engagement and participation in the climate and nature conversations. Annual staff engagement workshops are held including lunchtime talks, rapid report sessions and presentations at events focussing on energy-related emissions, broader climate issues, reducing our organisational carbon footprint and positive nature impacts. This commitment forms part of our organisation's EMP and aims to facilitate a collective understanding of our energy use, GHG emissions and biodiversity awareness; allowing our staff to better understand the issues involved, participate in GHG emissions reduction efforts, and promote greater biodiversity at our sites.

2. Our Targets

Throughout 2023, we have continued to make significant progress in improving our environmental performance, with a further downward trend in consumption of energy and resources, even though there have been positive increases in our staff numbers (35% increase from 2010 to 2023), buildings, and activities.

In addition to the targets set by the Climate Action Plan, our strategic plan has committed to achieving a minimum of 30% reduction in our GHG emissions by 2026.

Good reliable data is essential in understanding and monitoring our progress. We are focused on strengthening and streamlining the existing data collection process for all our environmental aspects with a particular focus on energy. The environmental database which was developed and rolled out to all EPA locations in 2021 has been well embedded into habitual use across all locations through our Site Environmental Managers. This database is the central repository for recording of energy, electricity, waste, water data for all our locations. Our energy data is compared to a base period average of 2006-2008. This fixed base period allows us to track progress against the National Climate Action Targets.

Our main sources of energy consumption are illustrated in Figure 5 below:

- fuel used in road, rail and air travel (42%); And
- fuel used to heat (37%) and power buildings (21%).

In 2023, 42% of our total energy consumption (kWh) was transport related comprising of fuel used in our own fleet of vehicles, as well as business travel related transport by road, rail and air.

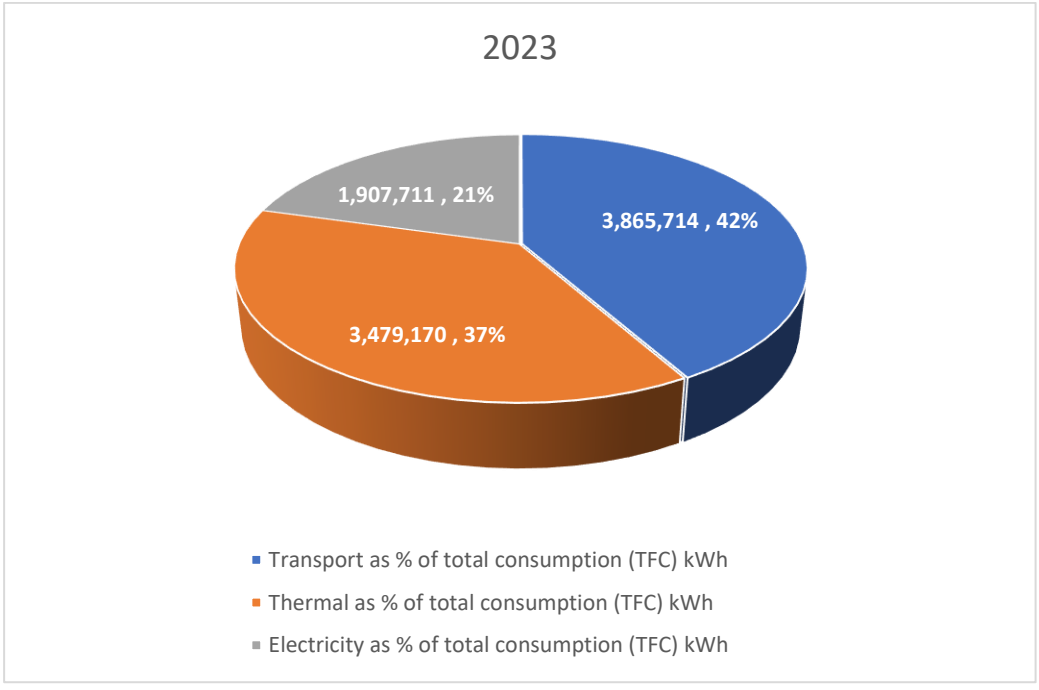


Figure 5: Percentage of Total Final Energy Consumption kWh (TFC) in 2023

We are committed to being an exemplar in all areas of environmental performance and we have a very strong focus on energy and carbon reduction in line with the requirements of the Climate Action Plan. We have been working closely with our external energy partners to develop an understanding of how we use energy in our buildings through detailed energy audits and have used this understanding to develop a rolling three-year plan aimed at delivering energy and carbon performance improvements across all our buildings. We have already taken action to implement our identified initiatives and have imposed timelines up to the year 2030 for the completion of all energy efficiency projects.

Monitoring and recording energy consumption across all sites has been critical in achieving our success to date. We have appointed a Site Environmental Manager (SEM) at each of our locations. Our SEMs actively manage and control energy usage through a Building Management System (BMS). Furthermore, the OPW's Energy Management System is utilised in each location to provide energy usage data. We have plans to carry out upgrades of our building management systems to guarantee their continued effectiveness and to maximise the benefits that we get from these systems. Significant effort and capital investment have been made in recent years to reduce energy consumption and to use renewable energy sources where possible.

2.1 Analysis of significant emitters

Our energy-related carbon emissions include all electricity, thermal, and transport fleet emissions associated with our operations, vehicles, and our buildings. Figure 6 below provides a breakdown of our energy related GHG emissions in 2023 in tonnes of CO_2e.

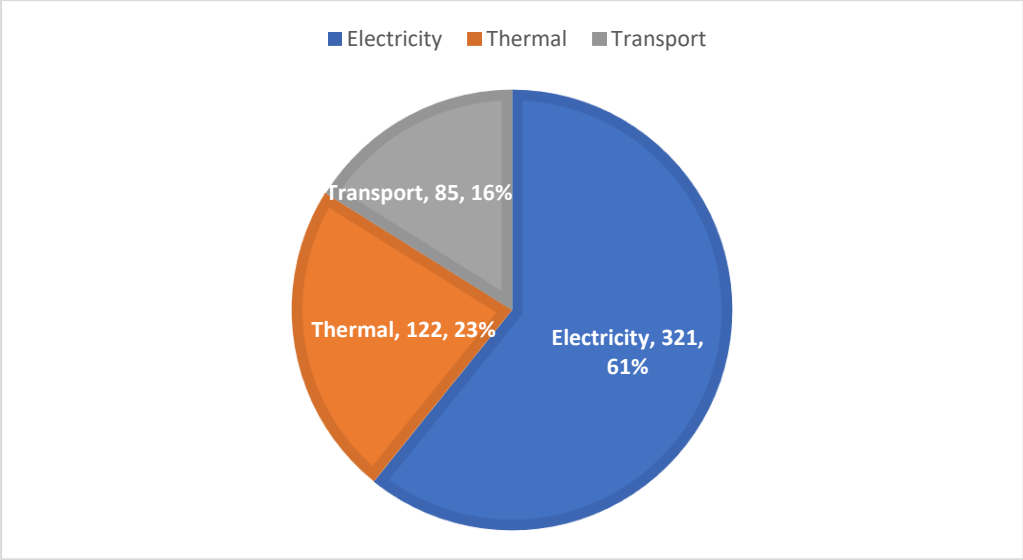


Figure 6. Emissions Breakdown for 2022 in tonnes of CO_2e (Source: SEAI: EPA Scorecard 2023)

We use a variety of energy sources to power and heat our buildings. Sources include biomass (wood chip and pellet), natural gas, thermal solar, photovoltaic (PV), bio-petroleum gas (bio-LPG), kerosene and electricity (air-to-water heat pumps). Electricity is purchased from 100% renewable sources via OGP Frameworks.

2.2 Achieving carbon emissions reduction targets

2.2.1 Our achievements under National Energy Efficiency Action Plan (NEEAP) (up to 2023)

Reflecting on our recent achievements, we surpassed our target of a 33% energy reduction in energy under NEEAP, by achieving a 55.3% reduction in our energy use up to 2023 (from our baseline 2006-2008). Significant effort and capital investments have been made over the years to reduce carbon and energy consumption and to use renewable energy sources where possible. Between 2010 and 2020, we reduced our energy consumption through a range of methods including, improving our overall energy management practices, the energy performance of lighting systems (switch to LED lighting) and the performance of our vehicle fleet by incorporating plugin hybrid and fully electric vehicles.

In 2022, we emerged from the restricted working arrangements that Covid-19 sanctions imposed across Ireland. The move to a blended working system allowed our staff some flexibility with a requirement to work in the office on a 2-3-day week basis. Our core functions nevertheless require us to travel within Ireland and further afield to carry out vital environmental monitoring, guarantee compliance with various EPA licences, carry out enforcement inspections and also to represent the EPA at key National and International events and meetings. These essential activities are reflected in our emissions though it should be acknowledged that we have continued to maintain a reduction in total carbon emissions (tonnes CO_2e) when compared against the base period average of 2016 – 2018.

In 2023, we noted a reduction in energy consumption and consequently in carbon emissions with a 38% reduction in total carbon dioxide equivalent (CO_2e) emissions in comparison to the base period average (2016-2018) emissions. In 2023, 61% of the total carbon dioxide equivalent (CO_2e) emissions were due to electricity usage. Electricity related CO_2e emissions were 40% lower than the baseline average in 2023 however, reflecting the extent of the efficiencies achieved through our various energy efficiency related programmes.

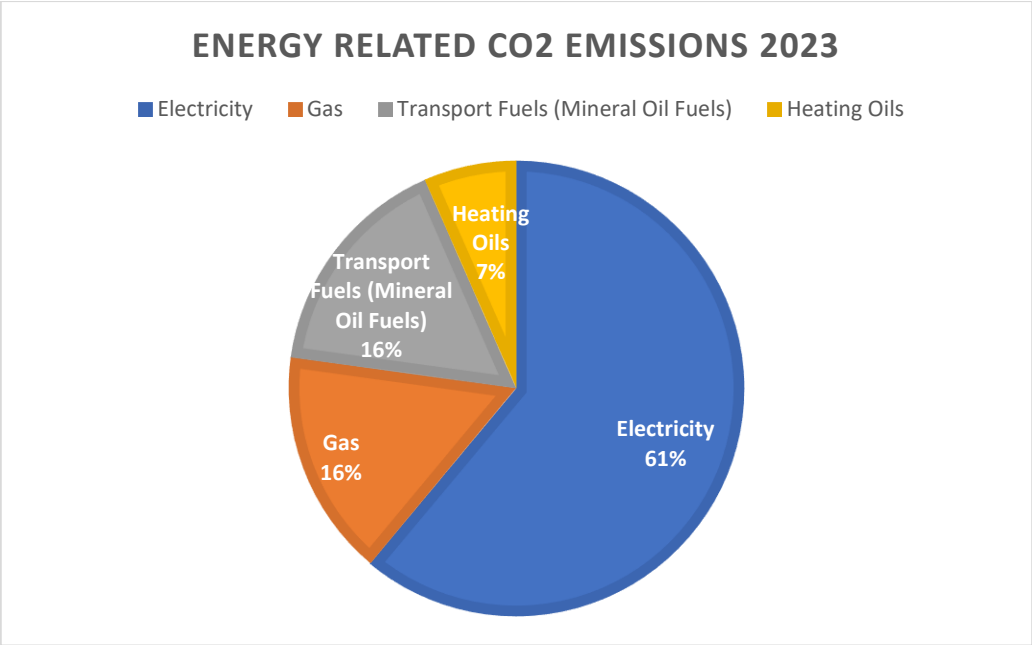


Figure 7: 2023 Energy related Carbon Emissions in tCO_2e (Source: SEAI: EPA Scorecard 2023)

Figure 8 presents energy related carbon emission trends for the period 2016-2023. A 38% reduction in CO_2 emissions from transport-related activities (including fuel used in EPA vehicles, and via business travel by air and road) for 2023 was achieved despite having 17% more staff working in the EPA in 2023 in comparison to the base period.

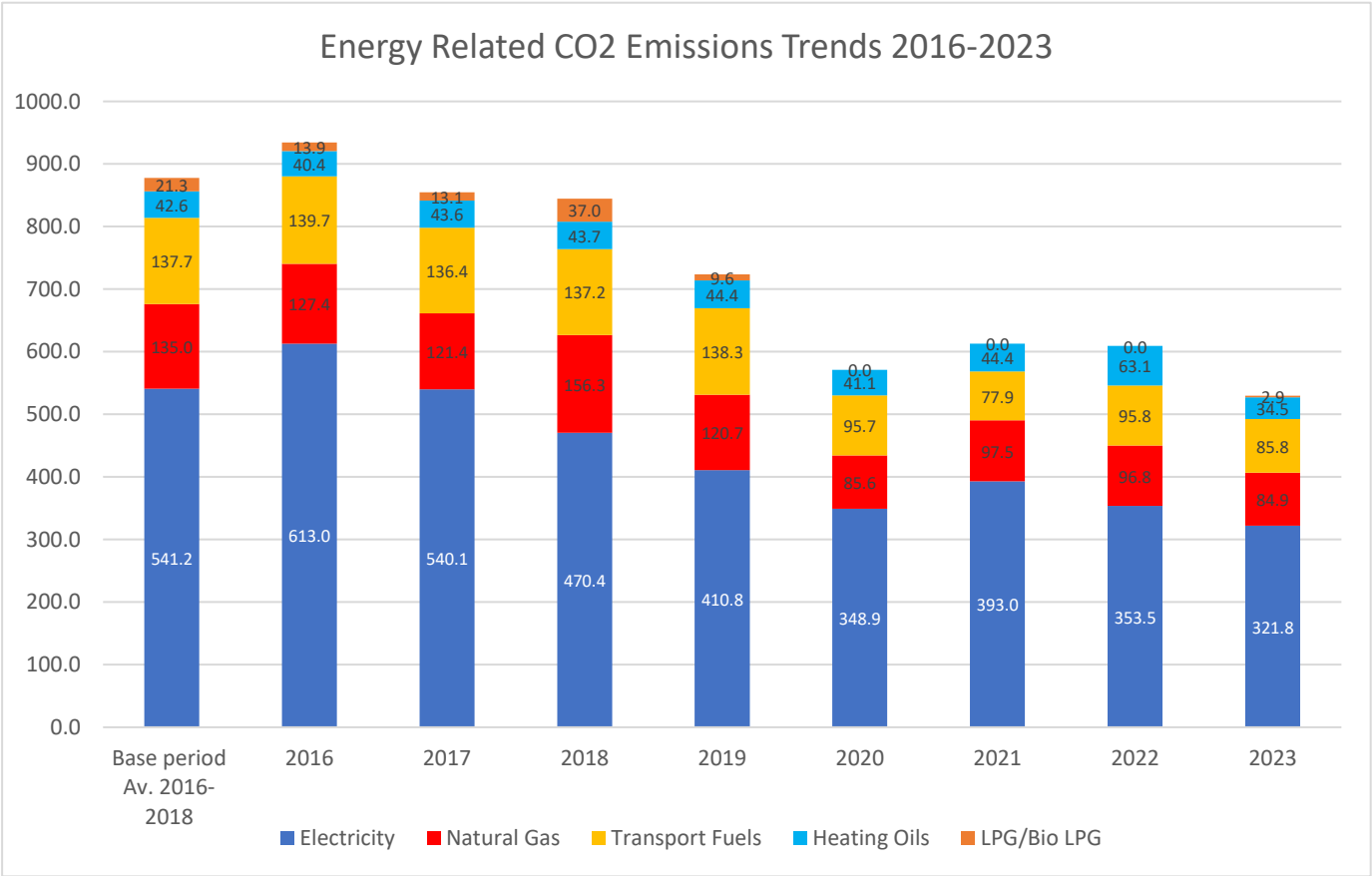


Figure 8 EPA Emission trends 2016-2023 in tCO_2e.

2.2.2 Energy efficiency baseline

Focusing on our energy performance, while the carbon reduction baseline has changed, the energy efficiency baseline of 2006-2008 remains the same. Using this baseline, we exceeded our target by achieving a 55.3% reduction in our energy use up to 2023 from the baseline years.

The SEAI developed an organisation-level Energy Performance Indicator (EnPI) to assist public sector organisations track energy performance. The indicator accounts for the organisation's energy performance as well as energy consumption. The EPA's EnPI is calculated by dividing the total energy consumption (electricity, heating, and fuel for EPA's fleet vehicles) by an activity metric (building floor area). Our initial baseline for energy efficiency was an average of 2006-2008 and was used to calculate progress towards the national energy reduction target of 33% set out under the National Energy Efficiency Action Plan (NEEAP).

We have, by the end of 2023, already exceeded our new target of 50% improvement in Energy Efficiency by 2030 from the baseline years of 2006 – 2008. This is demonstrated by the glidepath displayed in Figure 9. This achievement had been somewhat accelerated by the restrictions imposed during the Covid-19 pandemic. However, due to the nature of our duties and functions, all of our buildings remained operational during the pandemic. Energy efficiency projects which had been in the pipeline for completion resumed in 2021. The green glidepath to 2030 below illustrates the trajectory of continuous improvement in energy efficiency and demonstrates the possibility that a further 50% improvement on 2020 levels could be achieved, based on works planned and achievements to date.

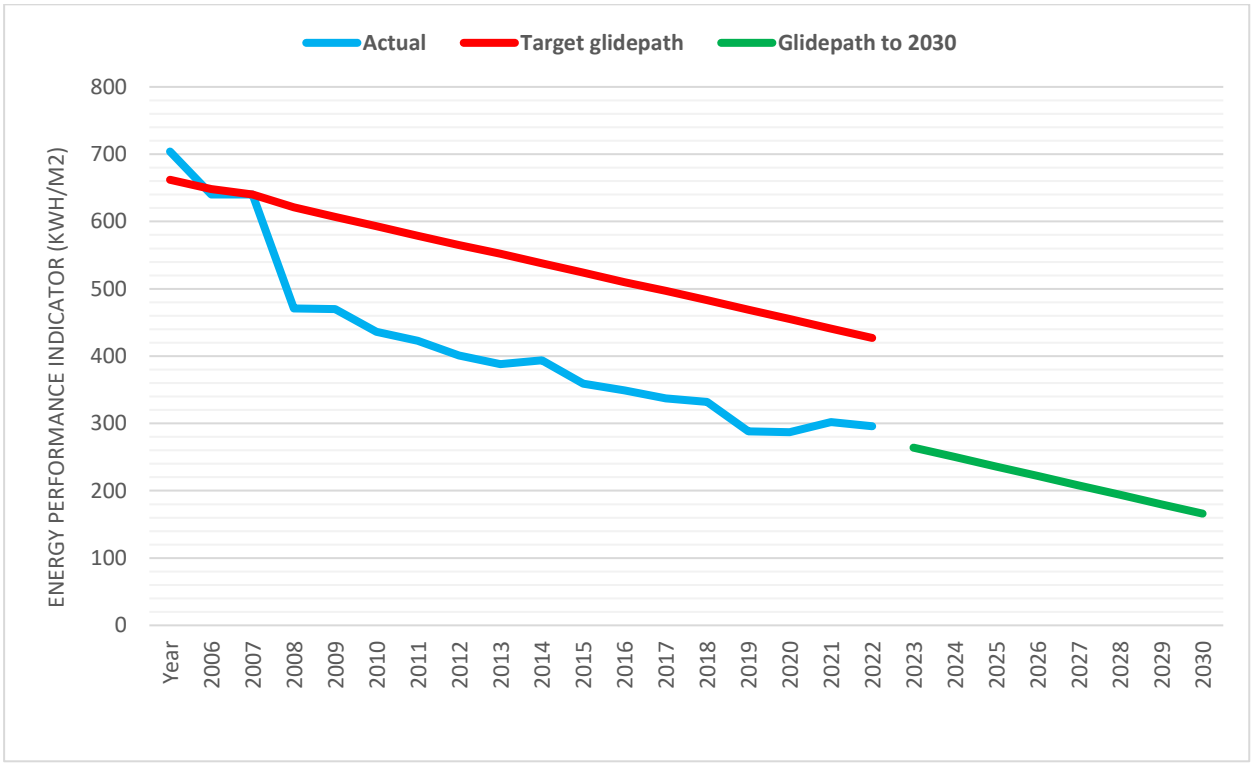


Figure 9 *Energy Performance Indicator (EnPI) kWh/m²)*

2.2.3 Energy efficiency in the target year if no new projects are implemented

Our achievement of energy savings to date is the result of significant organisational effort and financial investment in our energy efficiency projects. Samples of projects completed to date are outlined in Table 1.

Table 1. Energy Efficiency Projects Completed by the EPA to 2023

Location	Project
EPA HQ Wexford	Construction of BER A-Rated extension
	Full Lighting Upgrade to Energy Efficient LED and Smart Control
	430kW Biomass boiler system
	27kW Solar PV Array
	Rainwater harvesting and DWH Heat Recovery
Dublin, Clonskeagh Square	Hybrid Air Source Heat Pump & Cascade Gas Boiler System (Heat Pump Lead)
Castlebar	SMART LED Lighting Upgrade
Monaghan	Full Building LED lighting Upgrade
	13 KW Roof Mounted SolarPV
	Full heating upgrade with Air Source Heap Pumps as Primary Heating Source.
	Building Fabric & Air Tightness improvements
	BER of A3 achieved
Cork	240kW Biomass Boiler System (Wood pellet)
	50% Internal LED Lighting Upgrade
	Replaced air handling with more energy efficient solution
Dublin, McCumiskey House	Full Lighting Upgrade to Energy Efficient LED and Smart Control

We will continue to plan and implement new projects in line with the carbon reduction targets and these projects by their nature will have further positive impacts on our energy performance. These improvements will be tracked and reported as part of the SEAI M&R programme. Without implementing any new projects (business as usual scenario), we have already met our 2030 energy reduction targets and total energy efficiency savings would reach 58% by 2030. However, we are actively pursuing and investing in projects to deliver energy reductions well beyond this target.

2.2.3 Energy Audits

Our buildings range in age from 14-40 years old and were built according to the appropriate building standards of the time. Most of the buildings were designed to operate using fossil fuel

heat sources and fuel conservation may not have been considered a priority at time of construction.

In 2021, we partnered with external energy efficiency experts and commissioned S.I.426 energy audits under the requirements of European Union (Energy Efficiency) Regulations 2014 (S.I. No. 426 of 2014) for all EPA locations. These audits, which focused on our buildings and our activities in our buildings, were completed during 2021/2022. The outputs from these audits have been used to inform plans for meeting our 2030 decarbonisation targets.

The audits looked at the existing building fabric, current energy use and carbon emissions for each building as well as identifying the significant energy users in each building.

Key projects were identified for each building under two headings:

a) **Capital Projects** – Led by our Facilities Management & Sustainability Team, and
b) **Local Projects** (quick wins) – Lead locally by our SEMs (with assistance from Facility Managements).

The energy savings and carbon reductions that these projects would deliver were estimated and a 3-year rolling energy plan was developed based on prioritising the projects that would deliver the largest energy savings first as well as the projects that would deliver quick wins. This 3-year rolling plan will keep us moving in the right direction towards our 2030 targets.

The audits highlighted the importance of using a *fabric first approach* when improving the energy performance of buildings. This includes air tightness, improved thermal properties (insulation, glazing), and an improved ventilation strategy. Getting this right would assist with other improvements such as heating system upgrades could be correctly sized and perform as designed.

Improved preventative maintenance programmes for buildings are also being used to make certain that air tightness controls continue to work (e.g. checking window seals). This approach will result in an improvement in total building thermal performance, reduce air infiltration and provide suitability for 'low temperature' heat pump heating solutions. We adopt a ***trial-learn-rollout*** approach to all our building projects, whereby projects are trialled in smaller locations and the learnings applied to larger scale projects to achieve the maximum energy efficiency benefits overall.

Upgrading lighting to energy-efficient LED, now completed in most of our buildings, featured and presented an opportunity to reduce energy for lighting by up to 78%.

The installation of Solar PV on all our buildings was recommended and estimated to reduce our emissions by 107tn CO_2e and generate >28% of our electricity needs.

2.2.4 *Energy-related GHG emissions baseline average (2016-2018 emissions) and 2022 GHG emissions*

We have been monitoring and reporting our GHG emissions through the SEAI Monitoring and Reporting (M&R) system since 2006. All Scope 1 and 2 emissions as well as some Scope 3 emissions (Business travel by road (including public transport) and air) for 2023 are submitted to the Sustainable Energy Authority of Ireland (SEAI) under annual reporting obligations.

In recent years, the EPA has increased the scope and boundary of our GHG calculations to also include scope 3 emission categories. We have employed the use of dedicated sustainability software to calculate this broader carbon footprint. 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).

Since the establishment of our GHG emissions baseline period (2016-2018 average), we have recorded reductions in GHG emissions across the Agency. In 2023, our non-electricity emissions (thermal and transport (fleet)) and total energy-related emissions reduced by 36% and 34%, respectively, since the baseline period.

Using the Standards and Guidance within the GHG Protocol Accounting and Reporting Standard (*GHG Protocol Corporate Standard, revised Edition 2015*), the total Carbon emissions arising from our own activities in 2023 were calculated as 1227.61 tCO2e. This is 33% lower than the average baseline period emissions for 2016-2018 (1,827 tCO2e).

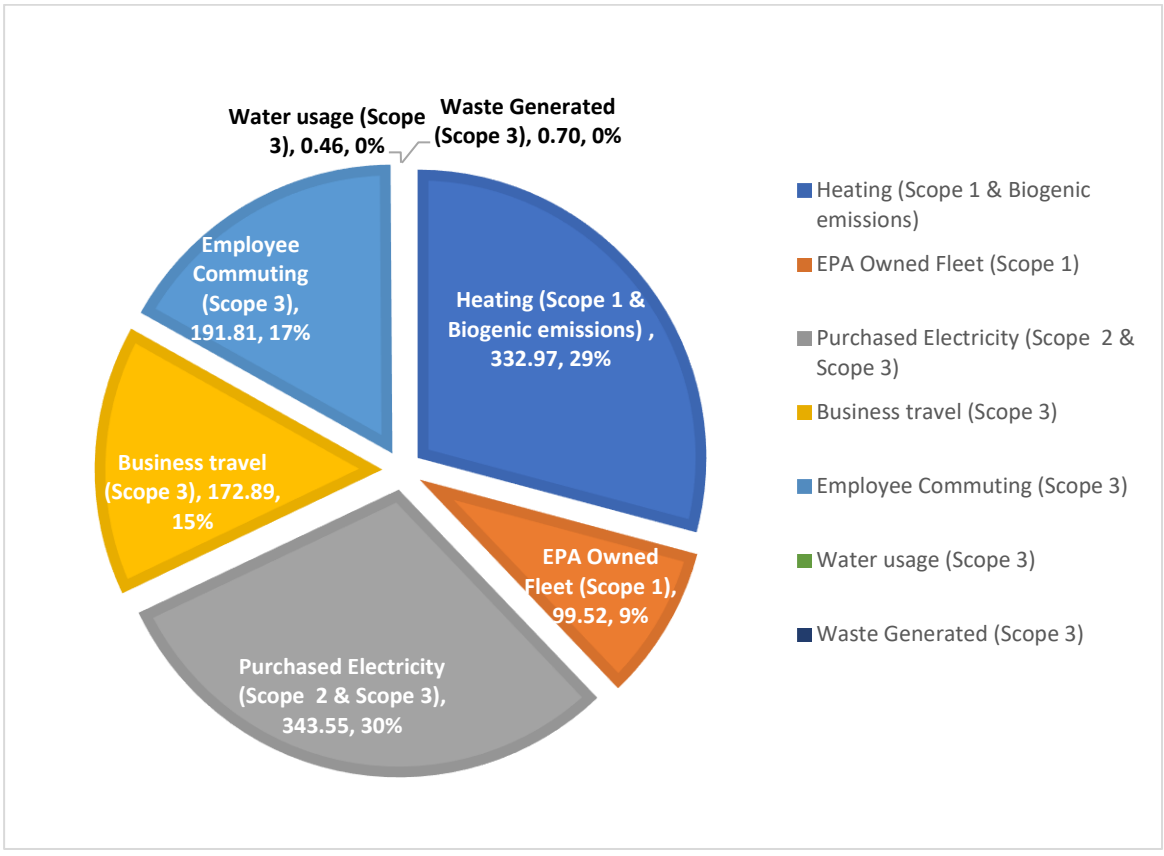


Figure 10. EPA Activities Ratio of Carbon Contribution tCO2e, 2023

Table 2 depicts the percentage change in emissions associated with our activities between the base period average and 2023.

Table 2: Percentage change in Carbon Emissions associated with EPA Activities

Year	Purchased Electricity (Scope 2 & Scope 3)	Heating (Scope 1 & Biogenic Emissions)	Mobile Combustion -EPA Fleet (Scope 1	Business Travel (Road and Air) (Scope 3)	Employee Commuting (Scope 3)	Water usage (Scope 3)	Waste Generated (Scope 3)
	Tonnes CO2 equivalent						
2016-2018 Average	567.84	362.14	146.42	374.69	367.36	0.72	7.66
2023	374.29	306.33	93.05	190	246	2.07	15.5
% Change	↓ - 34%	↓ -15%	↓ -36%	↓ -49%	↓ -33%	↑ +65%	↑ +50%

The overall reduction in our GHG emissions from the baseline to 2023 can be attributed to:

- Decreases in energy consumption from energy-efficient LED lighting upgrades.
- Energy efficiency gains from building retrofit and the transition to electrically powered heating (Air source heat pumps).
- Reduction from supply-side decarbonisation (i.e., Greening of the national grid by the replacement of existing fossil-fuel energy sources with renewable, carbon-neutral sources).
- Reduction in Business Travel – despite increasing the total number of Full Time Equivalent personnel by 17% since the base period (2016-2018)
- Blended working arrangements in 2022 which reduced employee commuting;
- Staff engagement in energy management;
- Decarbonisation initiatives.
- Water emissions increased slightly due to water leaks which were quickly identified and repaired through our utility monitoring system.
- Waste emissions also increased with a moving to hot desking, blended working and digitisation of documentation

Further to the ongoing and planned projects outlined above, we are on track to achieve our internal reduction target of a minimum 30% reduction in GHG emissions by 2026 and we are well placed to achieve a 51% reduction by 2030, in line with the Climate Action Plan requirements.

2.2.4 Electricity

While we purchase our electricity from 100% renewable sources to promote the development of these sources, the electricity we use on site, like most organisations, comes from the national electricity grid and is therefore produced from a range of carbon and non-carbon friendly sources. The fuel mix of this electricity changes from year to year and is based on the national average. The only way to guarantee that the electricity used on site is from 100% renewable sources is to self-generate through technology such as wind and solar. Reducing the amount of electricity used is however our primary strategy when considering emission reductions. We have been actively reducing our overall electricity demand for over a decade. Since 2009, a 27KW solar PV system has been generating 10% of electricity in our Wexford Headquarters. We have active programmes

in place for the delivery of sustained improvement in energy efficiency across the EPA which include energy efficient LED lighting and heating system upgrades across all our buildings.

We have commenced a project to self-generate over 28% of our own electricity, across all EPA locations through an expansion of Solar PV. We are committed to maintaining ongoing energy awareness and staff programmes and will also continue to identify opportunities to deliver energy performance improvements in all major/minor construction projects.

2.2.5 Transport

Most of our site locations are situated outside of urban areas, excluding our Dublin Campus. Due to limited public transport options in these areas, there is a high dependency on personal vehicular transport for our day-to-day business. Our activities require staff to conduct nationwide site visits, inspections, and environmental monitoring, which requires regular travel for staff. Travel on company business is an essential requirement for the fulfilment of many of our core functions.

Our vehicle fleet consists of a total of 32 vehicles, 31% of which are low emission vehicles which includes five electric vehicles (EV's) and five plug-in hybrids. A significant portion of the fleet is made up of four-wheel drives and light cargo vans, which are used for accessing challenging terrain for environmental monitoring, site visits, inspections, and the transportation of equipment. In the case of a fleet vehicle being unavailable for inspections or meetings, personal vehicles are used by staff for business travel (grey fleet).

We have carried out several projects to trial the use of alternative fuels, such as pure plant oil, gas, and synthetic diesel in their fleet, but due to technical difficulties and lack of reliability in the procurement of long-term supplies, the viability of these alternatives was not pursued. However, we are committed to continual improvement in this area and there is a strong commitment to replace diesel vehicles with suitable low emission vehicles as suitable replacements become available on the market. We have a strong policy in place to drive the move towards non-carbon fuelled vehicles and have been moving in this direction as suitable vehicles become available on the market. We will purchase an additional four fully electric vehicles in 2024. All EPA locations have installed EV charge points which are available for both staff and visitors – to encourage an increased uptake in personally owned EVs.

Plans for EV charging

EV Charging infrastructure has been in place at most of our locations since 2018. At the end of 2023, we awarded a framework and completed a project to fully upgrade our EV Charging infrastructure to a standardised solution across all our buildings. This new system also delivered

comprehensive back office and reporting functionality allowing more robust reporting on our electricity used for charging. It also provided a solution to allow staff charge their private EV's. We currently have 22 charge points across our buildings and the usage of these is actively monitored. Our EV framework provides for the growth of this network over the next four years and additional chargers will be added.

The availability of suitable vehicles has been a challenge, particularly when considering our requirement for long range commercial vehicles and off-road access supporting our monitoring and inspection programmes. We are now starting to see a maturity in the EV market with increased availability of vehicles to meet our requirements. Thirty one percent of the vehicles in our fleet are currently lower emission vehicles. We will be replacing a further three of our existing diesel vehicles with fully electric variants in 2024 and then 4 vehicles each year going forward. This will allow us to fully transition our fleet to electric vehicles by 2030. We have also introduced two fully electric pool vehicles as a pilot for staff use supporting the reduction of emissions from our grey fleet.

2.2.6 Thermal

Thermal emission sources arise from the combustion of natural gas, woodchip and pellet, and bio-LPG for space heating. Kerosene is used for back-up power and generators in some locations.

We have made significant progress in the transition to renewable heating systems over the last 10-years, with the use of, woodchip, Bio-LPG and wood pellets at our Wexford Headquarters and Cork Office, and the installation of air-to-water heat pumps in Dublin and Monaghan. We have prioritised moving away from fossil fuels and installing renewable heating systems, with specific focus placed on the electrification of heating systems using heat pump technology. Our 2022 project, upgrading our Monaghan building to electric heat pumps including fabric improvements and Solar PV installation allowed us to achieve a BER rating of A3 on a building constructed in 1996. It is anticipated that this long-term electrification of heating systems will provide a larger decrease in decarbonisation targets when compared to natural gas.

2.3 Planned projects to reduce total energy related GHG emissions

2.3.1 Energy Efficient Lighting (LED)

We commenced lighting upgrades in 2019 and are now well advanced in the replacement of existing lighting with energy efficient LED across all our buildings. To date, we have recorded a significant reduction in energy usage with reduced emissions, and an improved quality of lighting for our staff. Our office in Monaghan was the first to receive the upgrade and has measured a 78% reduction in electricity used for lighting. Our Castlebar office and Wexford Headquarters have since completed an upgrade to LED with similar energy reductions. In 2022 we completed a full building lighting upgrade in one of our Dublin buildings (McCumiskey House) with an estimated 9tn CO_2e reduction in emissions and plans are in place to continue this upgrade to all remaining buildings by the end of 2025. The lighting upgrades completed to date are estimated to deliver an annual reduction in emissions of 57tn CO_2e. LED lighting will also deliver reduced costs for maintenance (e.g. bulb changes) and reduced electrical and hazardous waste from fluorescent tubes.

2.3.2 Electricity – Self Generation "Solar PV"

Planning for the installation of Solar PV on all EPA buildings is well advanced and our intention is to have this substantially complete by the end of 2024. There is currently a 27Kw array on the roof of our Wexford headquarters, generating 10% of this building's electricity since 2009. We have an active project to install Solar PV systems on all of our buildings and have awarded the contract for this work in late 2023. This project is expected to be completed in 2024.

It is estimated that we will self-generate approximately 28% of our electricity needs through Solar PV but it is anticipated that much more than this will be generated. While excess electricity generated will be fed into the national grid, we are exploring ways of utilising more of this electricity on-site in the future.

A battery storage solution will be delivered for both our Cork office and Dublin Laboratories, as we have sufficient nighttime load in these buildings to utilise the excess daytime generation.

It is expected that the introduction of Solar PV systems to all our buildings will result in emissions savings of up to 109 tonnes of CO_2e per year.

Table 3. Self-Generation Solar PV

Site	Max available array size (Kw)	Energy feed to grid (%)	Electricity demand met by solar (%)	tCO_2 savings/annum
Castlebar	38.5	20.1	25.4	7.95
Monaghan	20.7	28.9	20.5	3.08
Cork	48.1	16.0	26.8	8.96
Kilkenny	43.7	42.1	40.4	8.04
Dublin (Block 1)	14.8	35.3	33.8	2.63
Dublin (Block 3)	105.6	26.8	34.0	19.6
Dublin McCumiskey	51.2	1.9	21.9	14.86
Wexford	137.0	13.2	24.2	43.63
Total	**459Kw**	**23%**	**28.4%**	**109 tCO_2/annum**

2.3.3 Energy Efficient Heating

We have made notable progress in transitioning to energy-efficient heating systems for our buildings. In 2019, we upgraded our Clonskeagh Square office in Dublin to run on electric heat pumps. For this project, the actual achieved carbon savings for the first year recorded post installation was 18.22 tCO_2e. We have also installed a biomass to heat system in our Wexford headquarters, with Bio-LPG as the back-up heat source, and a wood pellet heating system in our Cork Office. Our most recent achievement was in our Monaghan office where we have completed a full building heating system upgrade with electric heat pumps as the primary heating source. The Monaghan upgrade also included building fabric improvements and we ultimately achieved a BER rating of A3. Heating upgrades to our Castlebar and Dublin (McCumiskey House) Offices, with the installation of electric heat pumps, are planned over the next three years. In combination, it is projected that these planned upgrades in Castlebar and Dublin will result in annual savings of 53 tonnes of CO_2e.

2.3.4 Retrofitting

Our 'fabric first' approach places focus on improving existing building fabric and improving the air tightness of our buildings, when carrying out retrofit projects. This prevents unnecessary heat loss from our buildings. It will also make sure that our technical upgrades such as heating systems are correctly sized, not over engineered and can provide the required level of comfort. This is especially important as we move to low temperature heating solutions (electric heat pump) as such solutions are challenging to operate in older buildings.

All refurbishment works carried out in our laboratories and offices are designed to include building performance improvements including technology and fabric upgrades. Our refurbishment projects include a strong focus on reuse of materials, addition of further insulation, replacement of glazing and improved performance of building plant (e.g. HVAC, lighting). A recent project for heating upgrade at our Monaghan office resulted in the development of designs for air tightness improvements including the replacement of external doors and other building fabric improvements including air tightness to reduce the heating loads. Several additional retrofitting projects are included in our three-year rolling energy plan. These projects are outlined below:

Table 4. Retrofitting Projects (3-year rolling plan)

Location	Project
Monaghan	External door upgrades
	Air tightness works
Wexford	Roof upgrade
	Glazing upgrade
	Fabric upgrade including wall insulation
	Revised ventilation strategy with heat recovery
Castlebar	Internal wall insulation
	Insulation pumped bead
	Triple glazing of external windows
	Roof upgrade with high insulation
Dublin McCumiskey	Internal wall insulation
	External windows upgrade

Table 5 lists the major projects and their associated CO_2 emissions savings, which are planned for implementation between 2023 and 2030:

Table 5. *Estimated annual CO_2 savings from planned projects up to 2030*

Estimated annual carbon savings for additional projects to be implemented between 2023 and 2030			
Location	**Projects 2023-2030**	**CO_2 (tonnes)**	**% Reductions per year***
Wexford HQ	• Replace biomass boiler with new biomass cascade • LED lighting upgrade • Heat recover ventilation install • Install 137Kw solar PV array and batteries • External wall insulation • Upgrade external windows (main building) • Roof upgrade with improved thermal performance • Energy management system install	95	16%
Dublin, Clonskeagh Square	• LED lighting upgrade • External wall insulation • External window to triple glazing • Attic insulation • AHU Upgrade • Install 105Kw solar PV array • Heat recovery ventilation install • Energy management system install	72	12%
Dublin McCumiskey	• LED lighting upgrade • Internal wall insulation and pumped bead cavity insulation • External windows upgrade • Radiators to be replaced with fan coil units • Radiators (Labs only) to be replaced with fan coils • AHU - replace fans and coils • Install 43Kw Solar PV array • Heat recovery ventilation install • Air source heat pump install • Energy management system install	92	15%

Estimated annual carbon savings for additional projects to be implemented between 2023 and 2030			
Location	**Projects 2023-2030**	**CO_2 (tonnes)**	**% Reductions per year***
Cork	• LED lighting upgrade • Install 30Kw Solar PV array • External wall insulation • Upgrade external windows (Main Building) • Roof insulation • Biomass boiler replace with cascading biomass boilers • Air source heat pump install • Heating distribution pipework • Heat recovery ventilation install • Energy management system install	84	14%
Kilkenny	• Led lighting upgrade • Air source heat pump install • Heating distribution pipework • Pumps upgrade • Heat recovery ventilation install • Install 40Kw solar PV array • Energy management system install	37	6%
Castlebar	• Internal wall insulation • Insulation pumped bead • External windows to triple glazing • Roof replacement with high insulation roof • Heating install-2 port valves • Install 39KW Solar PV • Heat recovery ventilation install • Air source heat pump install • Heating distribution pipework • Energy management system install	59	9%
Monaghan	• LED Lighting Upgrade (External Lighting only) • External wall insulation • External windows to triple glazing • Heating distribution pipework • Install 20.7Kw solar PV • AHU upgrade • Heat recovery ventilation install • Ground source heat pump install • Air source heat pump install • Energy management system install	70	11%

***Percentage reductions from <u>total buildings emissions</u> measured in 2021 (612,734 kg CO_2e).**

3. Our way of working

We are committed to leading by example and incorporating good environmental management and practice into our everyday activities. We operate and maintain an Environmental Management System (EMS), certified to the international standard ISO 14001:2015. Using this Standard, we strive for continual environmental improvement, to prevent pollution, to measure and reduce our Greenhouse Gas (GHG) emissions, adapt to climate change, and encourage environmental awareness within our organisation.

Our EMS provides a framework for environmental management throughout the Agency. It is designed to identify and control the most significant environmental aspects associated with our activities, which we can directly control and manage, and those we can indirectly influence. Our Green Team implements the requirements of the EMS, and every year the Environmental Management Programme (EMP) is updated to reflect our environmental objectives in line with the environmental aspects and impacts identified. Information on our Environmental Performance is published regularly both internally and externally.

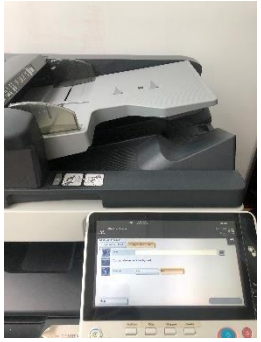
3.1 Green Public Procurement

Our Strategic Plan 2022-2026 includes our commitment to support the transition to sustainable production and consumption at a national level, and includes an outcome that by 2026 '*Practices with a reduced environmental impact will be key considerations in all public sector procurement through Green Public Procurement'*. This further endorses the use of Green Public Procurement guidelines on all EPA purchases. Ireland has committed to implementing GPP in all tenders using public funds by 2023.

We have incorporated green public procurement requirements into all of our procurement procedures and templates and are currently preparing our own internal Green Procurement Strategy and Policy for publication in 2023.

Training in the application of GPP is available to our staff via our suite of internal training courses. Measurement of the application of core/comprehensive GPP criteria in 2023 will be captured through our Contracts Register.

3.2 Resource Use



We have placed a strong focus on reducing paper use over the past decade. Supported by our Green Team and our ICT Services, we have delivered several projects which have achieved significant reductions in our use of paper. This included the digitisation of paper intensive processes including Licensing, Enforcement, and Finance. In 2013, a notable success was the launch of our online enforcement platform (EDEN) which moved all licensee communications, engagement, and correspondence to online communications. EPA licensees are no longer required to submit documentation in paper format. This significantly reduced the incoming

paper volumes in the EPA and improved the service delivered to our customers who now have access to information electronically.

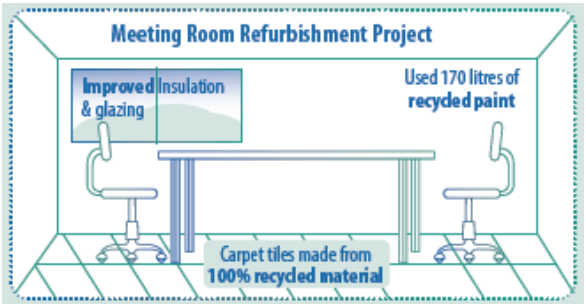
Other measures to reduce paper-based processes include:

- Digitised Health and Safety measures (inductions, contractors, risk assessments) with an electronic system and mobile application; and
- Improved technology (new photocopier solution) to reduce unnecessary printing.

These measures led to a 50% reduction in the purchase of print paper since 2012. We will continue to eliminate paper-based processes as far as is practicable. Where paper must be procured, we make sure that recycled paper is the default.

Resource reuse is a priority of the EPA. Our Facilities Management & Sustainability teams have an active focus on reuse and everything from stationery to fixtures and fittings are reused before any procurement process. We also look for re-use or the use of recycled material in products we purchase including carpets, outdoor furniture and our internal paint is even blended from paint collected from recycling centres.

Examples of where green criteria are used include:



- recycled stationery.
- construction projects.
- IT equipment.
- replacement of water coolers with mains water coolers.
- the replacement of disposable water cooler cups with drinking water glasses.
- Minimisation and elimination of hazardous chemicals used for cleaning offices.
- The purchase of replacement fleet vehicles.

Prioritisation of reuse in small construction projects through engagement with local Green Teams to develop alternative mechanisms for re-use of fixtures & fittings where not suitable for re-use within a specific project. We are an active member of Waste Action Reuse Portal (WARP-IT) for product and furniture reuse and re-distribution also.

3.3 Our buildings and vehicles

3.3.1 Display Energy Certificate

Display Energy Certificates (DEC) outlining the energy performance of our buildings are presented at each of our locations and updated annually using actual energy consumption recorded over the previous 12 months. DECs are displayed on a scale from A to G, with an A rating being the most efficient and a G rating being the least efficient.

We display an up-to-date Display Energy Certificate (DEC) in every building to clearly show energy use. Our DEC's are designed for public display and incorporates an operational Building Energy Rating (BER) and other relevant performance information.

3.3.2 Building Stock Plans

Building stock plans have been developed for all of our buildings based on the SEAI's Stage 1 Building Stock Plan under the following five principles:.

1. Identification & Classification of buildings
2. Building Register
3. Quantify Energy & Emissions
4. Identify buildings earmarked for exit
5. Preliminary assessment of accommodation needs

Our building stock plans provide us with information on the energy performance and GHG emissions from each of our buildings. It supports our future planning, focusing on our occupancy requirements to confirm which of our buildings are required in the future and if any can be earmarked for exit. It also supports our emission reduction project planning by allowing us to prioritise our buildings that have the highest emissions first.

In 2023, the EPA occupied eleven buildings. Following an assessment of our accommodation requirements, we were able to exit two of our smaller buildings (Dublin (& Limerick) during 2023 allowing us to re-locate staff to our other buildings.

Our staff numbers are continuing to grow and we are actively improving the occupancy levels of our buildings through constant monitoring and adapting to changes. In 2023, we introduced Hot Officing/Desking across our buildings allowing us to accommodate more people in the same footprint. We are actively expanding the scale of this initiative through 2024/25 through an expansion of hot desking in our open-plan office areas. Refer to Appendix for Building Stock Plan.

3.3.3 Sustainable Building Design

We plan to continue our investment in renewable heating solutions, efficient building systems, as part of our three-year rolling plan to improve our Building Energy Ratings (BER), increase efficiency and reduce emissions through the continued improvement of building fabric (insulation, glazing, air tightness), adding of additional solar PV, LED and geothermal solutions. Where refurbishment projects are carried out, sustainability and resource circularity are placed at the forefront of planning and design within the EPA.

Our most recent construction project was the upgrade of offices and a meeting room in a wing of our Wexford Headquarters. While looking at the functionality of the space and design to meet our modern way of working, a strong focus was placed on improving the buildings' energy efficiency by incorporating our fabric-first approach.

Some of the key sustainable design features included the following:

- Improved external wall insulation
- Upgrade of windows to energy efficient glazing
- The use of recycled and re-blended paint from paint recycling centres
- The use of carpet tiles made from 100% recycled materials and
- Lighting upgrade to energy efficient LED lighting.

All future construction projects undertaken will adhere to low Carbon construction methods as part of our Green Public Procurement commitments in the first instance.

3.3.4 Sustainable Transport

We have a strong programme in place to migrate our fleet to fully electric, see section 2.2.5 above. In addition, we are exploring other measures to support sustainable transport. The EPA participates in the Commuter Cycling Incentive Scheme to encourage our staff to engage in active commuting to work.

Bicycle parking and shower facilities are available at all EPA locations to accommodate cyclists and the EPA is committed to continual improvement in this area. In recent times, a new cycling shelter has been established at the EPA HQ in Wexford which has improved the sheltering facilities for bicycles; this has provided secure, accessible shelter for cyclists which is simple to recognise and easy to use. A bicycle repair station has also been added. All other EPA locations have similar arrangements.

Figure 11. Bicycle Shelter and Repair Station at EPA HQ

3.4 Our Wider Climate Action Plans

3.4.1 Carbon Reporting – Public Disclosure

We have been calculating our carbon emissions since 2013 and up until 2021 our summary carbon emissions were reported as part of our own Environmental Performance Reports. In 2022, we commenced formal reporting of our emissions in accordance with the Standards and Guidance within the *GHG Protocol Accounting and Reporting Standard* (GHG Protocol Corporate Standard, revised Edition 2015).

The purpose of the GHG emissions report is to provide a comprehensive breakdown of our GHG emissions in 2021 arising from internal operations across 6 locations; EPA Headquarters, Johnstown Castle, Co. Wexford, and EPA Regional Inspectorates located in Dublin, Castlebar, Kilkenny, Monaghan, and Cork.

The report includes emissions data based on our activities and compares them to a base period (average of 2016-2018). We will shortly publish our second GHG Emissions Report which presents our total calculated carbon emissions arising from Scope 1 (direct emissions from fixed and mobile combustion), Scope 2 (indirect emissions - electricity) and Scope 3 (indirect emissions – business travel, commuting, water and waste disposal) activities in 2023.

We made further significant progress in 2023, evaluating and calculating the carbon footprint associated with our activities. Total carbon emissions generated by us in 2023 was 1227.61 tonnes of CO_2 equivalent. The largest Carbon emissions were generated from Scope 3 activities accounting for 34% of total carbon emissions with Scope 2 accounting for 27% of our emissions.

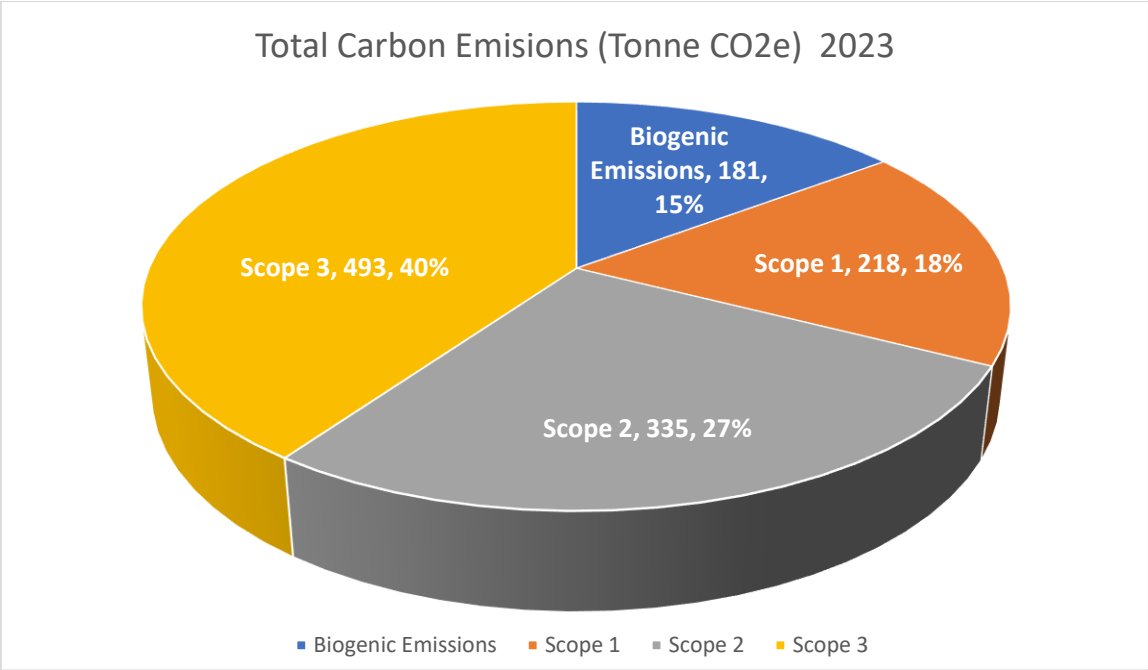


Figure 12. Ratio of total carbon emissions in 2022 by scope (tonnes CO2e)

Total Carbon emissions arising from our activities in 2023 was **1,227.61 tCO_2e**. This is 33% lower than the average Base Period emissions for 2016-2018 (1,827 tCO_2e). Improvements in energy efficiency, lighting, and energy management, EPA fleet upgrades to EV all had a significant impact on our 2023 emissions. Additionally commuting patterns and reduced business travel has impacted our transport emissions. A formal report on our Carbon emissions for 2023 is currently being finalised for publication.

3.4.2 Biodiversity

There are recognised synergies between protecting biodiversity and actions to prevent and adapt to climate change. We are committed to enhancing biodiversity at our offices with the aim of ensuring that our footprint on biodiversity is not negative and ideally presents a net gain. The high-level plan is to make sure that we manage 50% of our available green spaces for biodiversity, which is applicable across all EPA locations.

The role of biodiversity in staff well-being initiatives is also being enhanced through the plan. This includes the establishment of outdoor meeting areas for staff, woodland walk areas, biodiversity walks and talks. Butterfly and bee monitoring, wildlife planting and increased native planting have also been carried out at EPA locations to enhance, preserve, and protect biodiversity at the EPA. Our local Green Teams are leading the implementation of the biodiversity activities.

Figure 13 'No Mowing' Demonstration plots at HQ

3.4.3 Water

We have been recording water usage at all locations since 2010 and have achieved a 67% reduction in water usage from 2010 to 2020. Water is used mainly for domestic and laboratory analytical purposes. Continuous monitoring of water usage has been the most useful way of early detection of leaks and anomalies. Meter reading is in place at all our locations. Rainwater harvesting is used in Wexford for toilet flushing. Drinking water filtration systems are installed on mains water for drinking, removing the use 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.

We continue to monitor water consumption in all our locations and include water usage as part of our Greenhouse gas emissions calculations. Water performance targets will be reviewed with a view to assigning individual water benchmark performance indicators based on a location's specific activities (e.g. office/laboratory).

3.4.4 Waste Reduction

Controls for segregation and management of waste arising has been critical in supporting the effective management and monitoring of waste within the EPA. Since establishing the environmental management programme, our principal aim has been to promote non-hazardous waste reduction, in line with circular economy ambitions and to segregate unavoidable waste so that recycling is efficient and effective. This includes an established infrastructure of waste segregation bins at appropriate locations within the EPA and an embedded practice among staff of segregating waste at point of disposal. Given the confidential nature of some documentation, paper waste is shredded on site and then recycled.

A system for food waste prevention is embedded in the EPA catering management system which includes portion control and reuse of leftover vegetables into the following day's menus (e.g. soups). All food waste is segregated into brown bins for collection and composting by an approved authorised collector. Our catering contractor has achieved Origin Green and ISO 14001 certification and signed up to the national Food Waste Charter in 2023.

All our locations operate a 3-bin system, as a minimum, for main waste types (mixed waste, recyclables, and food waste), however there are provisions for segregation of other waste types, where required, such as glass, shredded paper, WEEE, plastic and newspapers. In our Wexford headquarters, we ran a staff engagement piece called 'Operation Segregation' in 2021, with the removal of over 200 desk bins and replacing with eight segregation stations across the office, resulting in reduced waste and improved waste segregation.

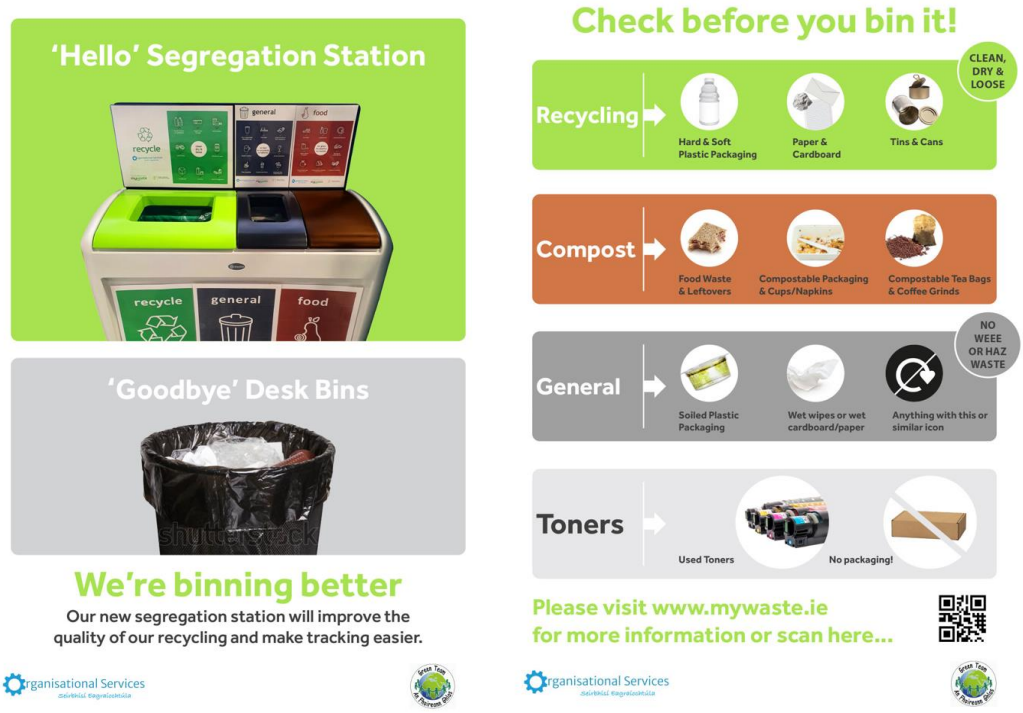


Figure 14 Promotional material for Operation Segregation

Appendix 1: EPA's Environmental Policy Statement

Environmental Protection Agency
Internal Environmental Policy Statement

The purpose of the Environmental Protection Agency (EPA) is to protect, improve and restore our environment through regulation, scientific knowledge and working with others. Our vision is that we live sustainably in a healthy environment that is valued and protected by all.

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 in itself. To achieve this, our natural environment must first be valued and then protected by all and this will require action on the part of Government and every household, business, sector and community. To lead by example, we incorporate 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 our organisation.

The EPA is committed to comply with applicable environmental legal and other requirements that apply to our activities.

We have introduced controls to reduce environmental impact across our activities including; waste management

- energy use
- water use
- green public procurement
- transport and travel
- environmental education and awareness among our staff

We communicate our Environmental Policy, plans and performance to staff and we recognise the contribution our staff make towards improving the environmental performance of the EPA.

The Board of the EPA has ultimate responsibility for the environmental performance of the organisation. It ensures that the necessary environmental policies and resources are put in place to minimise the environmental impacts of the organisation.

Laura Burke
Director General

Date: 06th April 2023

Environmental Management Programme - EMP

2023

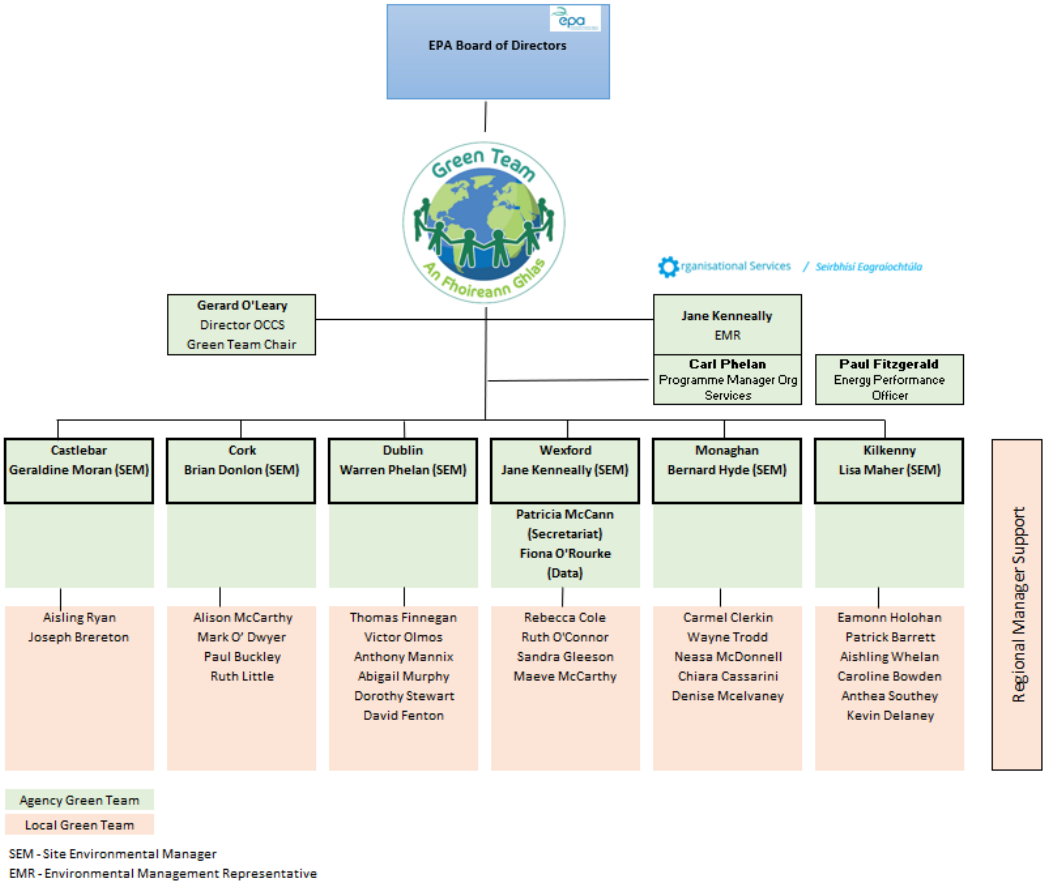
Introduction

This document sets out the EPA's Environmental Management Programme (EMP) for 2023 in two parts, the context, and key considerations from pages 1 to 4 and the 2023 Environmental objectives in the table starting on page 5.

EPA Context "Action through Leadership"

The EPA want to adopt a leadership role in the delivery of climate actions and as such is committed to incorporating exemplary environmental management practices into our everyday activities. We aim to minimise the environmental impact of our own activities, to prevent pollution, to measure and reduce our Greenhouse Gas (GHG) emissions, adapt to climate change, and encourage environmental awareness within the Agency. We implement an *Environmental Management System* (EMS) to integrate good environmental management and practices into our everyday activities. We have achieved certification to the international standard ISO 14001 since 2010 . In addition, we control and monitor hazardous waste in our laboratories using ISO 17025:2017. This systematic approach along with the dedicated work of the EPA's Green Teams, in measuring and reviewing our environmental impacts has delivered solid progress, especially in reducing our energy and water usage.

The EPA Green Team is chaired by a Director of the EPA Board and consists of the Environmental Management Representative (EMR), Site Environmental Managers (SEMs) and is supported locally by Regional Managers and local Green Teams in Wexford, Dublin, Cork, Monaghan, Castlebar and Kilkenny. This approach strengthens the role and better supports their responsibilities in respect of their locations.



Environmental Management Programme 2023

This is the EPA's Environmental Management Programme (EMP) for 2023. The programme allows the EPA to focus our resources on the highest priorities and actively minimise our own impacts on the environment, by setting measurable environmental objectives.

Focus of EMP 2023

The context for deciding our priorities for 2023 include inputs from previous Management Reviews, EPA Strategy 2022-2026, and specific considerations from the ISO14001 management system. These considerations include our context (as set out above) and the following;

Compliance obligations and Stakeholder expectations

Compliance obligations require the Agency to assess all relevant statutory requirements relating to our environmental aspects (e.g. carbon, energy, transport, waste & biodiversity) in the planning and development of the EMP. As noted in the recent 2022-year end annual report on compliance with Corporate Legislation, the changes to legislation in 2022 did not require any changes to EPA's environmental management system. Also, as part of the EMS, we identify relevant stakeholders and their expectations and integrate them into our planning and controls.

Strategic direction and our 2023 Work Programme

Influences on the strategic direction for greening the EPA include the 2022-2026 EPA Strategy, Ireland's Climate Action Plan, (including Ireland's 2030 Energy Efficiency & Carbon Reduction Targets for Public Buildings), the Senior Management Network (SMN), the EPA Green Team and the local Green Teams. EPA's 2022-2026 Strategy includes a strategic outcome to reduce the EPA's greenhouse gas emissions by at least 30 per cent by 2026 on our transition to carbon neutrality.

The long-term objective is to achieve permanent reductions in total energy usage and Greenhouse Gas (GHG) emissions across the Agency. We are committed to leading by example, embedding climate action as a central value within our organisation relentlessly focusing on continuous improvements that deliver real improvement. This commitment will be achieved using the framework of the ISO 14001 Standard (see Figure 1) and a three-year rolling energy reduction plan.

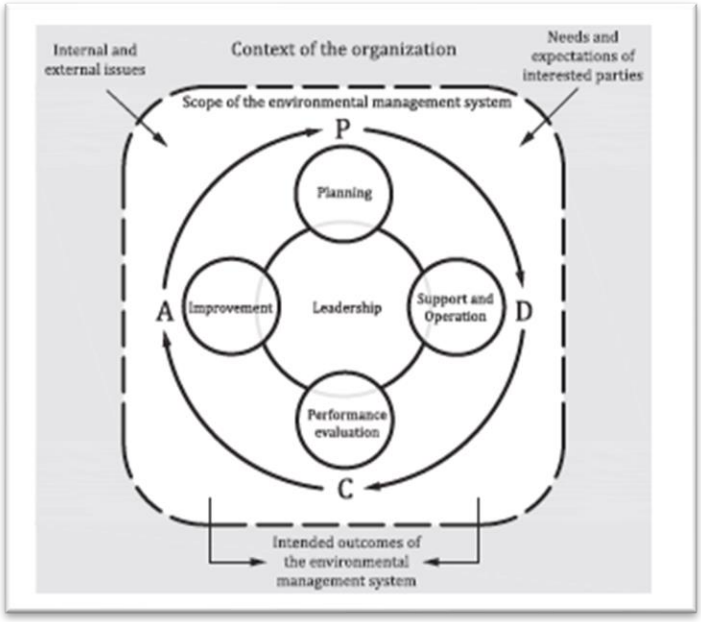


Figure 1. Plan do Check Act (PDCA) model for integration of continuous improvement in EMS, NSAI Standard.

The three-year rolling plan was developed based on recommendations from the baseline energy audits carried out in 2021. We will continue to work with our external energy partners to implement and update the plan. This dynamic plan assists the EPA to meet longer term ambitious goals which can be turned into a realistic and measurable annual energy and carbon reduction actions.

The Corporate Strategy, OCCS 2023 work programme and Environmental Management Plan (EMP) are aligned to guarantee consistency. A key outcome for 2023 is to continue to reduce EPA's carbon footprint, to formally report on EPA's carbon emissions and to develop our Climate Action mandate.

Our most significant environmental aspects

As part of our EMS, we have a formal mechanism to evaluate and prioritise the most significant impacts of EPA activities on the environment. These are known as environmental aspects and are set out in EPA's environmental policy and register of aspects. Activities for 2023 under these aspects are consistent with the policy and are set out below.

Risks and opportunities

EPA's approach to Greening the EPA has been supported by the ISO 14001 external auditors in 2022. Feedback from the external auditors included reference to "*Direction and support for the EMS and the new Strategic EMP from top management was evident throughout the audit process. Thorough knowledge of the EMS evidenced at all audit locations with strong Green Team support. Clear continuous review and improvement of the EMS shown".* Environmental management controls include this environmental management plan, the Green team, the annual management meeting, and ISO14001.

As active members of OPW's Optimising Power at Work programme and the SEAI Public Sector Partnership Programme, the EPA is always seeking opportunities to improve.
The opportunities identified for 2023 are set out below and include lighting and heating upgrades, taking a 'building fabric first' approach and Solar PV.

2023 Environmental objectives

The 2023 objectives are listed in the following table with a list of tasks/actions required, the roles with overall responsibility for achieving each objective, how it will be measured and the target dates for completion.

Progress towards these objectives will be monitored by the Agency Green Team, the Activity Owners and the SEMs (Site Environmental Managers) at each of our office locations, reviewed by the Director of OCCS at the quarterly Green Team meetings, and formally reviewed by Directors at our Management Review meeting.

Activity	Activity description	Target completion date	Activity support	Activity Owner(s)	Location	Activity Outcome
1. Carbon Reporting	**Long-term Objective: Reduction of the EPA's greenhouse gas emissions by at least 30 % on our transition to carbon neutrality**					
	1.1 Publish and submit the EPA's Climate Action Roadmap in line with updated Public Sector Climate Action Mandate.	Q1 2023	Jane Kenneally, External contractor	Paul Fitzgerald	All	Comply with Public Sector Climate Action Mandate requirements
	1.2 Submit 2021 Carbon report to the Board and publish report	Q2 2023	Paul Fitzgerald, Project team	Jane Kenneally	All	Robust reliable information on EPA's GHG Emissions published.
	1.3 Conduct a further GAP analysis on comparable carbon reporting in selected public and private organisations	Q4 2023	Paul Fitzgerald, Project team	Jane Kenneally	All	
	1.4 Report of Carbon Data figure (for 2022 (back cast to baseline)	Q4 2023	Paul Fitzgerald, Project team	Jane Kenneally	All	
2. Energy Use	**Long-term Objective: Reducing our total energy usage across the Agency.**					
	2.1 Annual update of 3 year rolling plan for Carbon & Energy reduction in EPA buildings and progress 2023 actions	Q1 2023	Jane Kenneally, SEM's Regional/Facility Manager.	Paul Fitzgerald	HQ	Improved building energy performance and reduction in carbon use.
	2.2 Continue with implementation measures for Reduce Your Use Campaign	Q1-Q4	Thomas Finnegan, Jane Kenneally, SEM's Regional/Facility Manager.	Paul Fitzgerald	All	
	2.3 Renewal of Display Energy Certificates (DEC's)	Q2 2023	Thomas Finnegan, Jane Kenneally, SEM's Regional/Facility Manager.	Paul Fitzgerald	All	
	2.4 Complete full building upgrade of energy efficient LED lighting in McCumiskey House Dublin.	Q2 2023	Paul Fitzgerald, Facility Manager.	Thomas Finnegan	Dublin	

Activity	Activity description	Target completion date	Activity support	Activity Owner(s)	Location	Activity Outcome
	2.5 Complete installation and commissioning of Monaghan Heating upgrade.	Q2 2023	Paul Fitzgerald / Monaghan SEM, Regional/Facility Manager	Thomas Finnegan	MN	
	2.6 Deliver more energy efficient solution for summer hot water heating in HQ.	Q3 2023	Jane Kenneally, Facility Manager (Wx)	Paul Fitzgerald	HQ	Improved building energy performance and reduction in carbon use.
	2.7 Complete updated energy ratings (BER) for EPA buildings.	Q3 2023	Facility managers	Paul Fitzgerald	All	
	2.8 Engage energy champions in each location to support energy reduction initiatives.	Q3 2023	Regional Managers, SEM's	Paul Fitzgerald	All	
	2.9 Commence installation of Solar PV for all locations as outlined in the energy rolling plan.	Q4 2023	Jane Kenneally, Thomas Finnegan, Facility Managers.	Paul Fitzgerald	All	
	2.10 Develop case studies for greening projects completed in 2023	Q4 2023	Thomas Finnegan	Paul Fitzgerald	All	
	2.11 Progress upgrade of lighting in Cork to energy efficient LED	Q4 2023	John Harrington Cork Energy Champion	Paul Fitzgerald	Cork	
	2.12 Progress design of roof upgrade in HQ and explore opportunities for building efficiency improvements including fabric upgrades.	Q4 2023	Jane Kenneally, Danielle Byrne	Paul Fitzgerald	HQ	
	2.13 Delivery Building Management System (BMS) upgrades to EPA buildings.	Q4 2023	Paul Fitzgerald	Thomas Finnegan	All	
	2.14 Progress planning for Castlebar projects time lined to 2024.	Q4 2023	Thomas Finnegan	Paul Fitzgerald	Castlebar	

3. Transport & Travel	**Long-term Objective: Reduced carbon footprint of transport in the EPA.**					
	3.1 Repeat the annual staff commuter survey.	Q3 2023	Paul Fitzgerald, Environmental Consultants	Jane Kenneally	All	GHG data on commuting maintained.
	3.2 Replace diesel vehicles with fully electric vehicles in line with our transport policy.	Q4 2023	Organisational Services	Carl Phelan & Relevant Programme Manager(s)	All	Support the work of the Zero Emission Vehicles Ireland Work Programme and Electrification Strategy
4. Waste Management (Non-hazardous waste)	**Long-term Objective: Effective & efficient management of non- hazardous waste**					
	4.1 Develop case-study on HQ waste segregation solution	Q3 2023	Sandra Gleeson, Patricia McCann	Jane Kenneally	HQ	Improved understanding of our waste streams supporting future reductions.
	4.2 Carry out a waste characterisation profile on food waste arising at EPA HQ and examine the options for reduction and/or recycling of elements of waste (e.g., coffee grinds).	Q3 2023	Canteen Provider, Waste contractor, Cleaners & Green Team	Jane Kenneally	HQ	Improved understanding of our waste streams supporting future reductions.
5. Waste Management (Hazardous Waste)	**Long-term Objective: Effective & efficient management of hazardous waste.**					
	4.3 Develop in house knowledge on correct chemical segregation and storage practices through external training.	Q2 2023	Hazardous Waste working group, SEM's, L&D Laboratory Managers	Laboratories	Geraldine Moran	Timely collection of waste and continued compliance across all laboratories.

6. Environmental Education & Awareness	**Long-term Objective: Improved awareness of our environmental performance.**					
	6.1 Publish Carbon reports and climate action mandate roadmap	Q1- Q4 2023	Carl Phelan, Paul Fitzgerald.	Jane Kenneally	All	Formal record of "Greening the EPA" activity.
	6.2 Complete statutory reporting on energy (SEAI).	Q1 2023	Jane Kenneally, Facility Managers	Paul Fitzgerald	All	Staff communication and continued compliance.
	6.3 Complete statutory reporting on waste (CSO).	Q1 2023	Organisational Services Wexford	Jane Kenneally	All	
	6.4 Develop best practice case studies in energy and waste.	Q4 2023	Thomas Finnegan & Organisational Services Team.	Paul Fitzgerald	All	Promote and share learnings as case studies with staff and external parties.
7. Continuous Improvement and Assurance.	**Long-term Objective: Continuous improvement of the EPA's Environmental management practices and outcomes.**					
	7.1 Conduct annual Management Review meeting with Directors.	Q1 2023	Carl Phelan, Paul Fitzgerald.	Jane Kenneally	HQ.	Continued review of suitability, adequacy and effectiveness of EMS.
	7.2 Conduct **internal** audits: • Dublin • Kilkenny • Monaghan • Castlebar • Wexford	Q2 2023	Jane Kenneally	Warren Phelan Lisa Maher Bernard Hyde Geraldine Moran	Dublin Kilkenny Monaghan Castlebar Wexford	Continuous surveillance and improvement.
	7.3 Carry out **recertification** audits: • Dublin • Kilkenny • Monaghan	Q2 2023	Jane Kenneally	Warren Phelan Lisa Maher Bernard Hyde Geraldine Moran	Dublin Kilkenny Monaghan Castlebar Wexford	Assessment of EPA's compliance with ISO14001.

	• Castlebar • Wexford					
	7.4 Explore benefits and resourcing requirements for EPA's Green Laboratory Certification	A4	Organisational Services, Facility Managers, Laboratory Managers, Regional Managers	Geraldine Moran	All	Continuous improvement of the EPA's Environmental management practices and outcomes.
8. Green Data	**Long-term Objective: Reliable and timely data supporting positive Green Actions**					
	11.1 Complete dashboard for presentation of our Green Data.	Q4 2023	Paul Fitzgerald, Jane Kenneally, Thomas Finnegan, SEM's.	Fiona O Rourke	All	Presentation of data to EPA staff
9. Green Team	**Long-term Objective: Fostering ongoing engagement and collaboration.**					
	9.1 Participate in national and local Green Team meetings.	Q4 2023	SEM's, Green Teams.	Organisational Services.	All	Strong engagement in "Greening the EPA" from all locations.
	9.2 Organize Green Team network event	Q4 2023	Organisational Services Team, Environmental Consultants	Jane Kenneally	All	
	9.3 Green Team engagement in local green projects.	Q4 2023	SEM's, Local Green Team(s).	Organisational Services	All.	Improved Green outcomes with projects.
10. Continuous Improvement and Assurance.	**Long-term Objective: Continuous improvement of the EPA's Environmental management practices and outcomes.**					
	10.1 Conduct annual Management Review meeting with Directors.	Q1 2023	Carl Phelan, Paul Fitzgerald.	Jane Kenneally	HQ.	Continued review of suitability, adequacy and effectiveness of EMS.
	10.2 Conduct **internal** audits: • Dublin	Q2 2023	Jane Kenneally	Warren Phelan Lisa Maher Bernard Hyde	Dublin Kilkenny Monaghan	Continuous surveillance and improvement.

	• Kilkenny • Monaghan • Castlebar • Wexford			Geraldine Moran	Castlebar Wexford	
	10.3 Carry out **recertification** audits: • Dublin • Kilkenny • Monaghan • Castlebar • Wexford	Q2 2023	Jane Kenneally	Warren Phelan Lisa Maher Bernard Hyde Geraldine Moran	Dublin Kilkenny Monaghan Castlebar Wexford	Assessment of EPA's compliance with ISO14001.
	10.4 Explore benefits and resourcing requirements for EPA's Green Laboratory Certification	A4	Organisational Services, Facility Managers, Laboratory Managers, Regional Managers	Geraldine Moran	All	Continuous improvement of the EPA's Environmental management practices and outcomes.
11. Green Data	**Long-term Objective: Reliable and timely data supporting positive Green Actions**					
	11.1 Complete dashboard for presentation of our Green Data.	Q4 2023	Paul Fitzgerald, Jane Kenneally, Thomas Finnegan, SEM's.	Fiona O Rourke	All	Presentation of data to EPA staff
12. Green Team	**Long-term Objective: Fostering ongoing engagement and collaboration.**					
	12.1 Participate in national and local Green Team meetings.	Q4 2023	SEM's, Green Teams.	Organisational Services.	All	Strong engagement in "Greening the EPA" from all locations.
	12.2 Organize Green Team network event	Q4 2023	Organisational Services Team, Environmental Consultants	Jane Kenneally	All	
	12.3 Green Team engagement in local green projects.	Q4 2023	SEM's, Local Green Team(s).	Organisational Services	All.	Improved Green outcomes with projects.

Appendix 3: Building Stock Plan

Public Sector

Stage 1 Building Stock Plan

This is a simple checklist for public bodies to refer to when completing their stage 1 BSP. Public bodies should complete the fields and submit to SEAI at publicsector@seai.ie. Completing this checksheet is sufficient to demonstrate compliance with the CAP requirement for public bodies to develop a Building Stock Plan in 2023. NOTE: there is also more detailed template for public bodies to undertake a more detailed and comprehensive stage 1 plan. We encourage PBs to use the more detailed template if they have more than 50 buildings, or use their own format if comprehensive plans have already been developed. Please submit either template, the simple or detailed version, or the organisations own format, to SEAI to demonstrate completion.

M&R PB ID	PSO-00159	ORGANISATI(	**Environmental Protection Agency**	
STEP 1 Identify and classify your buildings	Total number ((Ctrl) ntified and classified		TOTAL	10
	Total number of sites/campuses identified		TOTAL	6
	Total floor area (m2)		TOTAL	13,771
	Percentage in state ownership		Percentage	50%
	Percentage rented or leased		Percentage	50%
	Classification 1	Laboratory	TOTAL	5
	Classification 2	Office	TOTAL	5
STEP 2 Complete the building register	The SEAI Building Register has been completed for all buildings for **Environmental Protection Agency**		Status	Fully complete
STEP 3 Use M&R and other data to quantify energy use and identify buildings that are biggest	The largest energy using buildings have been identified and linked to the M&R and energy use data Note the largest energy using buildings are those accounting for over 80% of the organisational **heat** use.			
	No of largest energy use buildings		TOTAL	N/A
	Heat usage of largest energy use buildings/ organisational heat usage		%	N/A
	No of largest energy use buildings that are leased		TOTAL	N/A
STEP 4 Identify buildings that have been earmarked for	Number of buildings planned for exit - if known		TOTAL	1
	Total floor area of buildings planned for exit - if known		TOTAL	100
	Commentary (the degree to which the increase or decrease will impact your fossil fuel use)			
STEP 5 Undertake a preliminary assessment of your accomadation needs to 2030 & beyond	Preliminary future assessment of accommodation needs			
	Accommodation floor area requirements to 2030		INCREASE STATIC DECREASE	0% Yes %
	Commentary (the degree to which the increase or decrease will impact your fossil fuel use)			
	In 2023, we introduced Hot Officing/Desking across our buildings allowing us to accommodate more people in the same footprint. We are actively expanding the scale of this initiative through 2024/25 through an expansion of hot desking in our open-plan office areas.			
Building Stock Plan STAGE 1 Completed by				
Completed by	Paul Fitzgerald, EPO		Email	p.fitzgerald@epa.ie

* Please use the classification categories used in the Building Register