Moray Council Climate Change Strategy 2020-2030

# Climate Change Plan and Routemap to Net Zero 2024 update

moray council

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# Executive Summary

Climate change and its impact on nature are already being felt across Moray communities. From coastal erosion to severe storms and flooding, these impacts affect the way that Moray Council delivers vital public services.

The Council's declaration of a climate and nature emergency places urgency on its work to both reduce carbon emissions and prepare public services and communities for the impacts of tomorrow.

This Climate Change Plan and Routemap to Net Zero is an annual report on the progress of the Moray Council Climate Change Strategy 2020-2030. It provides a strategic outlook to ensure the greatest impact from our resources whilst addressing the climate and nature emergencies.

Whilst this year's report highlights progress and best practices, carbon emissions have increased due to business-as-usual practices. This reinforces the need to use resources to their best advantage in a challenging financial climate and underlines that achieving the Council's aspirations and statutory duties requires revisiting the following fundamental principles:

- Strong leadership
- Sufficient resources
- Well-defined roles and responsibilities
- An empowering change culture
- Clear and transparent communication
- Knowledge and expertise
- Robust targets, measurement and evaluation

A decision point report will be produced in 2025 for members to reassess the Council's decarbonisation targets, considering changes in the policy and funding landscape, which will for the basis for a review of the Climate Change Strategy 2020-30.

Achieving the Council's target of net zero by 2030 will require further action in key areas. This includes building decarbonisation, continuing progress in waste reduction and developing a delivery model for natural capital enhancements. Groundwork in these areas has been completed or is currently underway, including on the Council's Local Heat and Energy Efficiency Strategy, natural capital opportunities study, rooftop solar feasibility studies for buildings and costing actions to inform the Climate Change Strategy update in 2025.

Significant opportunities lie ahead to make progress in these areas, including through the Scottish Government's £500m North East Just Transition Fund. Success will require a combination of strong leadership, collaboration across services, knowledge building and adequate resourcing to realise these opportunities.

# 1. Why we are taking climate action

## 1.1 Introduction

Moray Council is committed to acting on the causes and impacts of climate change.

Since declaring a climate emergency in June 2019, the Council has introduced a Climate Change Strategy with a target of reducing direct emissions from council activities to net zero by 2030. This Climate Change Plan and Routemap to Net Zero supports the strategy, providing an annual update on progress, actions and will inform the strategy update in 2025.

The Council also declared a nature emergency in February 2023. This recognises the value of nature and its role in achieving climate targets, maintaining a strong economy and protecting the health and wellbeing of future generations. The importance of using nature-based solutions to climate change are well recognised, with positive outcomes for both mitigation and adaptation[1].

## 1.2 Think global, act local

The climate is changing faster than ever previously experienced. Scientists agree that greenhouse gas emissions from human activities are the main reason for global temperature increases over the past 150 years[2] (Figure 1).

Urgent cutting of carbon emissions is needed to limit global warming to 1.5°C. To achieve this, some argue that countries with the highest emissions should take greater responsibility. However, as Figure 2 illustrates, there is a responsibility on all nations to contribute. The UK contributed the majority of global emissions until the 1900s.

Increased carbon dioxide in the atmosphere also has a profound impact on the health and wellbeing of the population. There is approximately 1 excess death per 4,500 $tCO_2e$ emitted[3] and the impacts of climate change will be felt disproportionately by people on low incomes who have contributed least to the increase in greenhouse gas emissions[4].

**Annual Moray carbon emissions of approximately 500,000 $tCO_2e$ = estimated 111 excess deaths per year[3]**

[1] Seddon et al. (2020) 'Global recognition of the importance of nature-based solutions to the impacts of climate change'.
[2] IPCC (2021) Climate Change 2021: The Physical Science Basis.
[3] Bressler (2021) 'The mortality cost of carbon'.
[4] UK Government (2019) The Impacts of Climate Change.

Moray's climate is no longer what it used to be. Weather patterns are becoming increasingly erratic and sea levels are rising, with the impacts already being felt. Extreme weather events such as heatwaves, droughts and sudden heavy rainfall are increasing in frequency. These changes are projected to continue and intensify in the future.

Climate impacts experienced elsewhere on Earth will also affect life in Moray. For example, disruption to supply chains or higher costs following drought in major food producing countries, or where conflict arises over access to natural resources.

Pressure on local services will increase due to climate change. Impacts will include:

- Damage to infrastructure such as buildings, roads, railways and power supplies;
- Damage to ecosystems, water supplies and agricultural production;
- Disrupted food supply chains and increased costs; and
- Disproportionate health and economic effects on vulnerable people.

Coastal flooding and erosion is a high risk in Moray due to rising sea levels and storm surges leading to property damage, infrastructure disruption and loss of habitable land. Storms and wildfires already have a significant impact on Moray's woodland resources.

Climate change and biodiversity loss are inextricably linked. The rapid loss of nature is both a result and driver of climate change. Biodiversity loss will negatively impact our ability to adapt to a changing climate, with implications for the Moray food and drink sector, tourism sector, and overall health and wellbeing.

The severity of future climate change depends on how fast we reduce greenhouse gas emissions. Early and significant emissions cuts can lessen the degree and impact of climate change. But past and present global emissions have already set some effects in motion, regardless of future reductions.

The Council should prepare for a global temperature increase of 2°C, but also plan for a potential rise of up to 4°C by 2100. This is because global carbon emission trajectories at present fall far short of restricting average temperature rises to within safe limits, and historical emissions will continue to have an impact long after we have reached net zero.

If targets continue to be missed, the quality of life that we know in Moray today will no longer be recognisable to our descendants by the end of this century. This will be due to the extreme circumstances that they will be forced to live in. To reduce the severity of these impacts, deep and urgent cuts to the carbon emissions (mitigation) are necessary, alongside preparation for the unavoidable impacts (adaptation). It is not possible to achieve this within the confines of the Council's budget alone. Funding opportunities are currently and in future are likely to become available to make progress in these areas.

## 1.3 Co-benefits of climate action

Moray Council and its community planning partners play a vital leadership role in driving the ambition and local collaboration necessary to integrate climate action and a just transition into planning and investment decisions[5].

Recognising that every council service has an impact on the climate is necessary to deliver a sustainable future for Moray. Ensuring that the Council's budget of over £278 million is strategically invested, and opportunities for external funding maximised, presents co-benefits which support multiple demands from communities and businesses.

The wider benefits of climate action can include the creation of green jobs, reduction of fuel poverty and energy costs, improved public health from active travel and cleaner air, and enhanced biodiversity due to the expansion and enhancement of green spaces.

Climate action supports the delivery of the Council's corporate priorities and vision, presenting opportunities to improve multiple outcomes at once. Embedding climate action within services offers a strategic and cost-effective way to overcome the challenges identified in the corporate plan.

Early investment in climate change adaptation delivers strong value for money. It has been found that most measures deliver £2 to £10 of net wider economic benefits locally for every £1 spent[6]. In addition, around £9 in property damages and wider impacts can be avoided.

### *1.3.1 Tackling poverty and inequality*

The most vulnerable people in our communities are also most at risk from climate impacts. Those with existing health conditions, the elderly, the very young, and those on a low income or in rented accommodation are all disproportionately affected by climate change.

Actions such as improving poor housing energy efficiency and greenspaces can:

- ✓ Protect the most vulnerable from climate impacts;
- ✓ Reduce fuel poverty by lowering bills and living costs;
- ✓ Improve health and wellbeing;
- ✓ Lead to healthier diets
- ✓ Reduce health and social care costs; and
- ✓ Increase productivity by reduction in missed school and workdays.


[5] Improvement Service (2023) Community Planning Improvement Board: Climate change and sustainability key messages.
[6] UK National Audit Office (2022) 'Climate change adaptation: the government's role and progress'.

### *1.3.2 Building a stronger, greener, vibrant economy*

Promoting green skills to people from an early age, investing in low carbon technologies and nature-based solutions in projects and taking opportunities to develop local skills and industry in these areas can:

- ✓ Increase demand and opportunities for green jobs and skills;
- ✓ Retain young people in Moray;
- ✓ Reverse biodiversity loss;
- ✓ Strengthen the Moray economy and build community wealth;
- ✓ Improve standards of living;
- ✓ Build resilience to climate change impacts such as flooding or droughts;
- ✓ Reduce energy and maintenance bills;
- ✓ Reduce costs from severe weather damage; and
- ✓ Create new opportunities for Council revenue generation.

### *1.3.3 Building thriving, resilient, empowered communities*

Being able to respond to climate impacts and benefit from the opportunities through a just transition will require communities to work together.

Actions such as improving public transport, active travel, and access to greenspace, facilitating resilience planning and green grants can support:

- ✓ Strong, well-connected communities with enhanced job prospects;
- ✓ Increased community wealth – keeping money in Moray;
- ✓ Reduced health costs;
- ✓ Improved physical and mental health;
- ✓ Community-led improvements;
- ✓ Public involvement in planning;
- ✓ Community income generation; and
- ✓ Less waste.

## 1.4 Statutory obligations

Moray Council has a statutory responsibility to undertake climate change action.

Scotland aims to reduce greenhouse gas emissions to reach net zero by 2045. The **Climate Change (Scotland) Act 2009** places a duty on all public bodies to act to deliver on the national climate change targets.

Under this legislation, Moray Council has three main duties:

- **Mitigation:** To contribute to reducing greenhouse gas emissions
- **Adaptation:** To help Moray adapt to the changing climate
- **Sustainability:** To act in a sustainable manner.

The Council must report on compliance with these duties annually in accordance with the **Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015** and **subsequent amendments.**

The Council is required to provide the following information in annual climate change reports:

- its target date for achieving zero direct emissions;
- its targets for reducing indirect emissions;
- how its targets will align spending plans and use of resources to contribute to reducing emissions;
- how it will publish progress to achieving emissions reduction targets; and
- what contribution it has made to helping deliver **Scotland's Climate Change Adaptation Programme.**

**National Planning Framework 4 (NPF4)** considers carbon, climate change and biodiversity by incorporating the national climate change targets into the local planning system to promote sustainable development.

**The Heat Networks (Scotland) Act 2021** aims to regulate and support the development of heat networks. Heat networks distribute heat from a central source to multiple buildings, reducing the need for individual heating systems and promoting energy efficiency. The council is required to undertake assessments of the potential for heat networks in Moray and develop plans to promote their use.

**The Local Heat and Energy Efficiency Strategies (Scotland) Order 2022** requires the council to develop plans to improve energy efficiency and reduce carbon emissions in buildings across Moray, to support the transition to net zero.

**The Nature Conservation (Scotland) Act 2004** aims to protect and conserve biodiversity and natural habitats. It places a duty on the council to consider biodiversity in its decision-making processes and to promote the conservation of local habitats and species.

**The Transport (Scotland) Act 2019** aims to promote sustainable transport and reduce greenhouse gas emissions from the transport sector. It has provided the council with greater powers to implement Low Emission Zones and improve active travel infrastructure.

Figure 1. Global atmospheric carbon dioxide (CO2) concentration from 803,720 BCE to present day. Data from National Oceanic and Atmospheric Administration (2023).

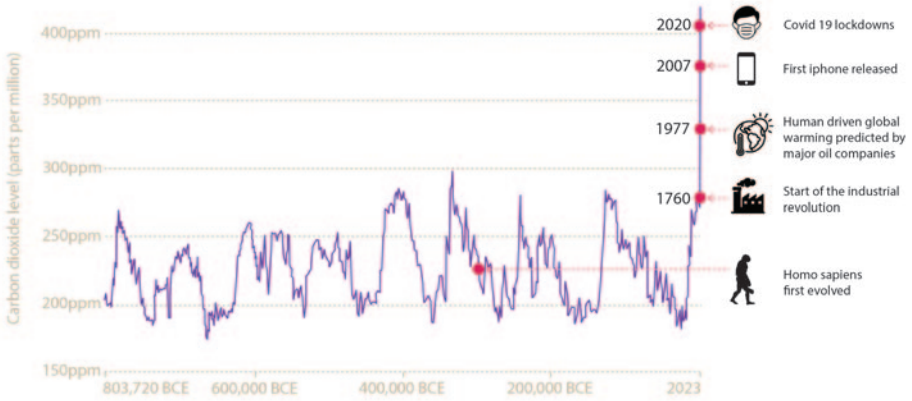
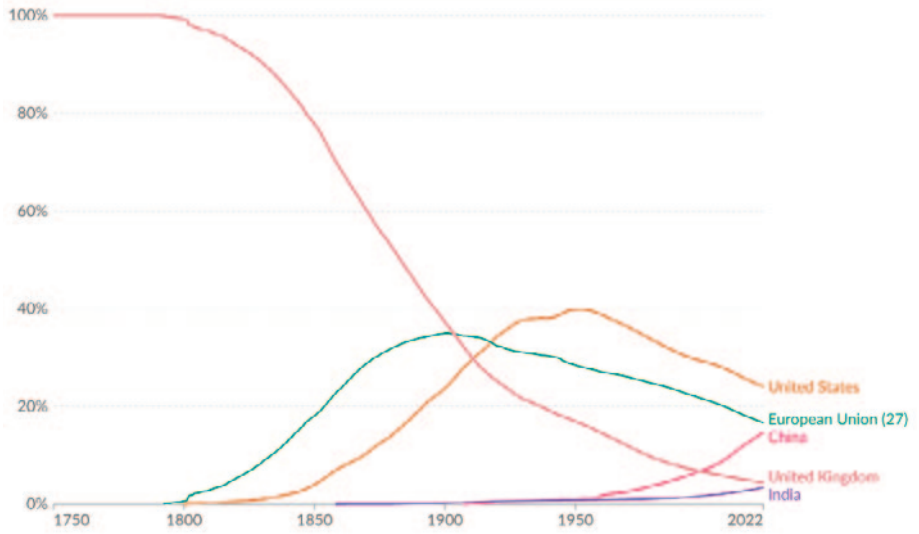



Figure 2. Share of global cumulative carbon emissions since 1750. Data from Our World In Data/Global Carbon Budget (2023).



# 2. How we approach climate action

The Council recognises that a considered approach is necessary for successful climate action. To ensure the greatest impact from our resources, climate action measures should be designed into all services and budgets rather than considered in isolation.

A dedicated team of climate change officers are responsible for preparing, monitoring and implementing the Climate Change Strategy. The scope of this team continues to grow as more statutory duties are placed on the authority. The team also act as a consultee and provide guidance on planning applications and provide advice to support funding bids and delivery of Council and Community Planning Partnership projects including Moray Growth Deal, Elgin Town Board and the Levelling Up Fund.

The Council's declaration of a climate and nature emergency places urgency on the pace and scope of all actions. The Climate Change Strategy therefore sets out how the Council will respond to the climate and nature emergencies, and its statutory duties. To achieve this requires:

1. **Strong leadership**
   It is recommended that climate action is supported by elected members and all of the Council's managers. They lead by example and are visibly involved in climate action initiatives, and routinely engage in updates on the Council's progress to net zero. This outlines the importance of these actions to employees and encourages them to get involved.

   Climate change is reflected as priority in corporate and service plans of the Council.

   It is recommended that all tier 1-3 managers and elected members have completed climate and nature emergency training, to improve understanding and encourage wider participation.

2. **Sufficient resources**
   Implementation of projects is supported by sufficient resources and staffing. Embedding actions within ongoing transformation of services is essential to ensure that the Council reduces costs and its impacts on the climate and nature.

3. **Well-defined roles and responsibilities**
   It is regularly promoted that everyone at the Council has a responsibility to act sustainably in the interests of the organisation and the environment.

   A governance structure for climate action is included within the Climate Change Strategy. The Climate Change Board meets quarterly to review actions and progress is reported annually to the Council via the Climate Change Plan and Routemap to Net Zero.

Two climate champions promote climate action within their respective remits and ensure effective communication. The Corporate Climate Change Champion is the Chief Executive, and the Elected Climate Change Champion is chosen by members. These individuals are briefed regularly by the Council's climate change officers and are invited to attend the Climate Change Board.

4. **An empowering change culture**
   The Council fosters a culture that encourages and supports innovative ideas for reducing emissions and wider impact on the environment.

   It does so by regularly consulting with colleagues and stakeholders and responding to their ideas. The Council celebrates success and milestones achieved through annual staff awards and the employee magazine, Connect. It is recommended that climate change is an integral part of the annual staff conference, where officers update staff on progress and seek their feedback.

5. **Clear and transparent communication**
   Communications around climate and nature should be clear and explain why action is being taken, to ensure understanding and promote behaviour change.

   Elected members, staff and stakeholders are kept informed about the Council's progress on climate action, including any challenges, through the annual Climate Change Plan and Routemap to Net Zero update.

6. **Knowledge and expertise**
   In addition to its climate change officers, the Council recognises the importance of upskilling to achieve its targets. Training and development opportunities are created and provided for employees and elected members on the climate and nature emergency.

   The Council works closely with academic institutions such as UHI and industry bodies to leverage their expertise and knowledge.

7. **Robust targets, measurement and evaluation**
   The Council's targets are measurable and recording mechanisms transparent and improved over time. Where there is uncertainty, assumptions backed by expertise will be made and stated clearly to avoid understating the Council's climate and nature impacts.

   Reports should be candid in their evaluation of activities to provide opportunities for continuous improvement and learning by the Council and the wider community.

## 2.1 How we define net zero

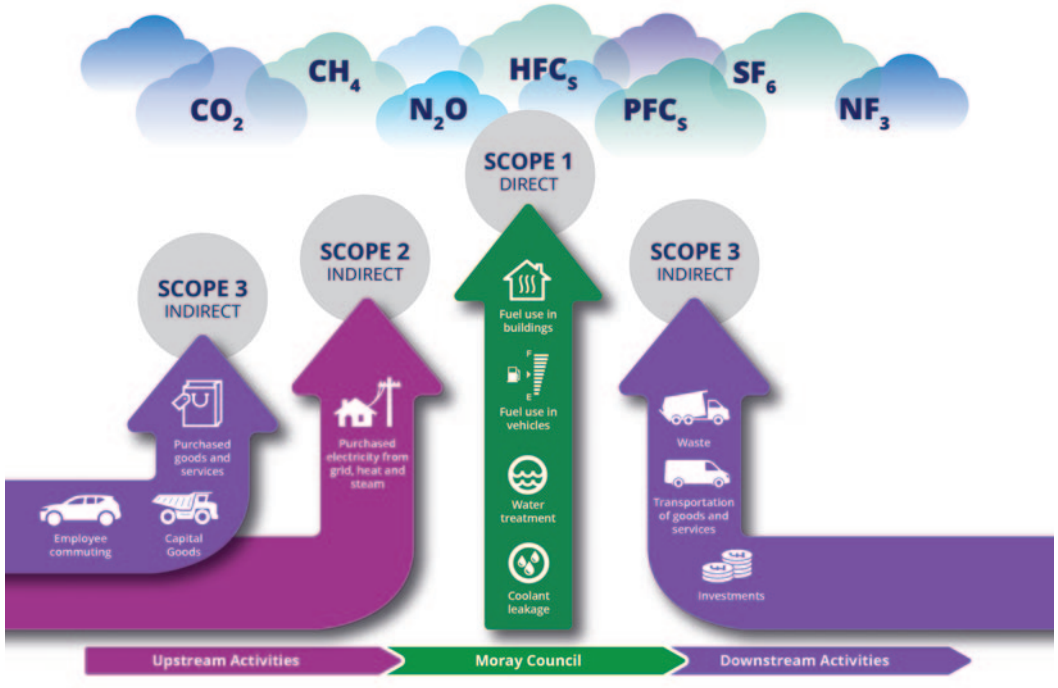
**Net zero means cutting greenhouse gas emissions to as close to zero as possible, with any remaining emissions re-absorbed from the atmosphere – for example, by oceans and forests[7].**

Emissions originate from sources directly within the Council's control (Scope 1), or where it is the direct user of a good or service (Scope 2), e.g. fleet vehicle emissions and grid electricity use. The Council's target for net zero is to reduce direct operating emissions of the council to net zero by 2030.

Other emissions originate from sources where the council has an interest but no direct control (Scope 3), e.g. procurement of food for school catering. Calculating these emissions involves a greater level of uncertainty: both in the emissions themselves, and the level of responsibility for them.

The Council has a statutory duty to report on all Scope 1 and 2 emissions, and all Scope 3 emissions from "relevant and significant areas of the organisation's indirect emissions" greater than 1% of total organisational emissions. Figure 3 provides an overview of all emission scopes.

Figure 3. Emissions scope classification for Moray Council activities.




[7] United Nations (2023) What is net zero?

## 2.2 Setting our targets

The Council's targets include direct and indirect emissions. They:

- Are clear on what is included in the scope of the Council's emissions;
- Cover all Scope 1 and 2 emissions and appropriate areas of Scope 3 emissions (e.g. municipal waste);
- Have interim reduction targets at set periods that align to the Scottish Government targets; and
- Reduce residual emissions to as low a level as possible and set out how carbon sequestration methods will be used to achieve net zero emissions.

The Council uses a carbon management hierarchy approach to prioritise its targets and necessary actions (Figure 4). This approach prioritises the avoidance of carbon emissions to deliver lasting change. Where avoidance of emissions is not possible then they should be reduced through service efficiencies or redesign. Removal of emissions is required where further reductions cannot be achieved.

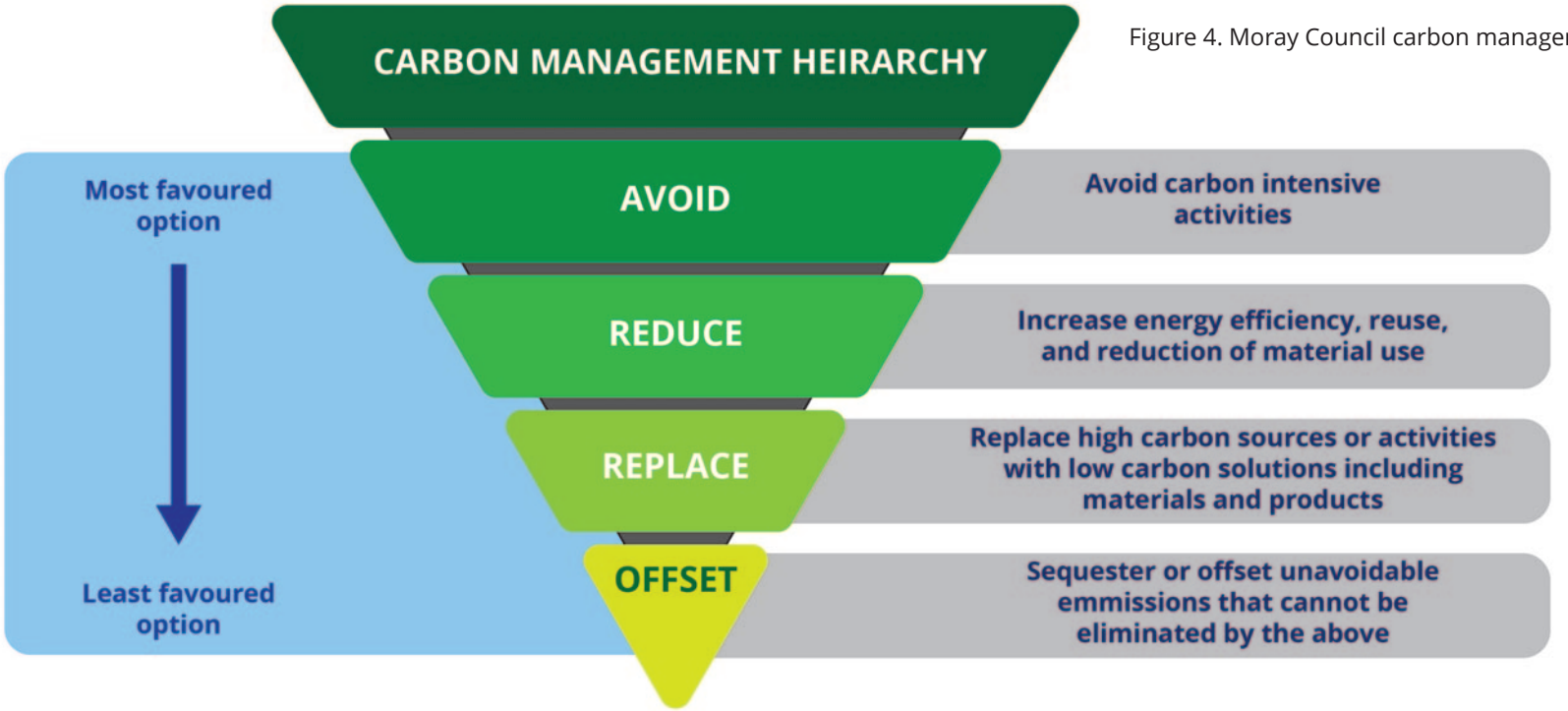



Figure 4. Moray Council carbon management hierarchy.

Offsetting 'unavoidable' emissions through offsetting schemes should be considered as a last resort in target setting. Offsetting significant levels of carbon is discouraged as large-scale offsets are not sustainable and guidance makes clear that public bodies are required to reduce emissions as much as possible before considering offsets.

For example, actions might look like:

- **AVOID**: Redesign services to enable smarter working.
- **REDUCE:** Reduce energy through smart timing solutions or motion sensors.
- **REPLACE:** Decarbonisation of the Council's fleet.
- **OFFSET:** Plant an area of woodland to offset unavoidable emissions.

## 2.3 Baselining our emissions

Calculating a baseline of emissions helps to determine the level of intervention needed to achieve net zero carbon emissions, and to allow progress to be monitored.

The Council's carbon emissions from 2017/18 are used as a baseline for emissions (Table 1). This year was chosen as it was the earliest year that had a comprehensive return of emissions to the Scottish Government.

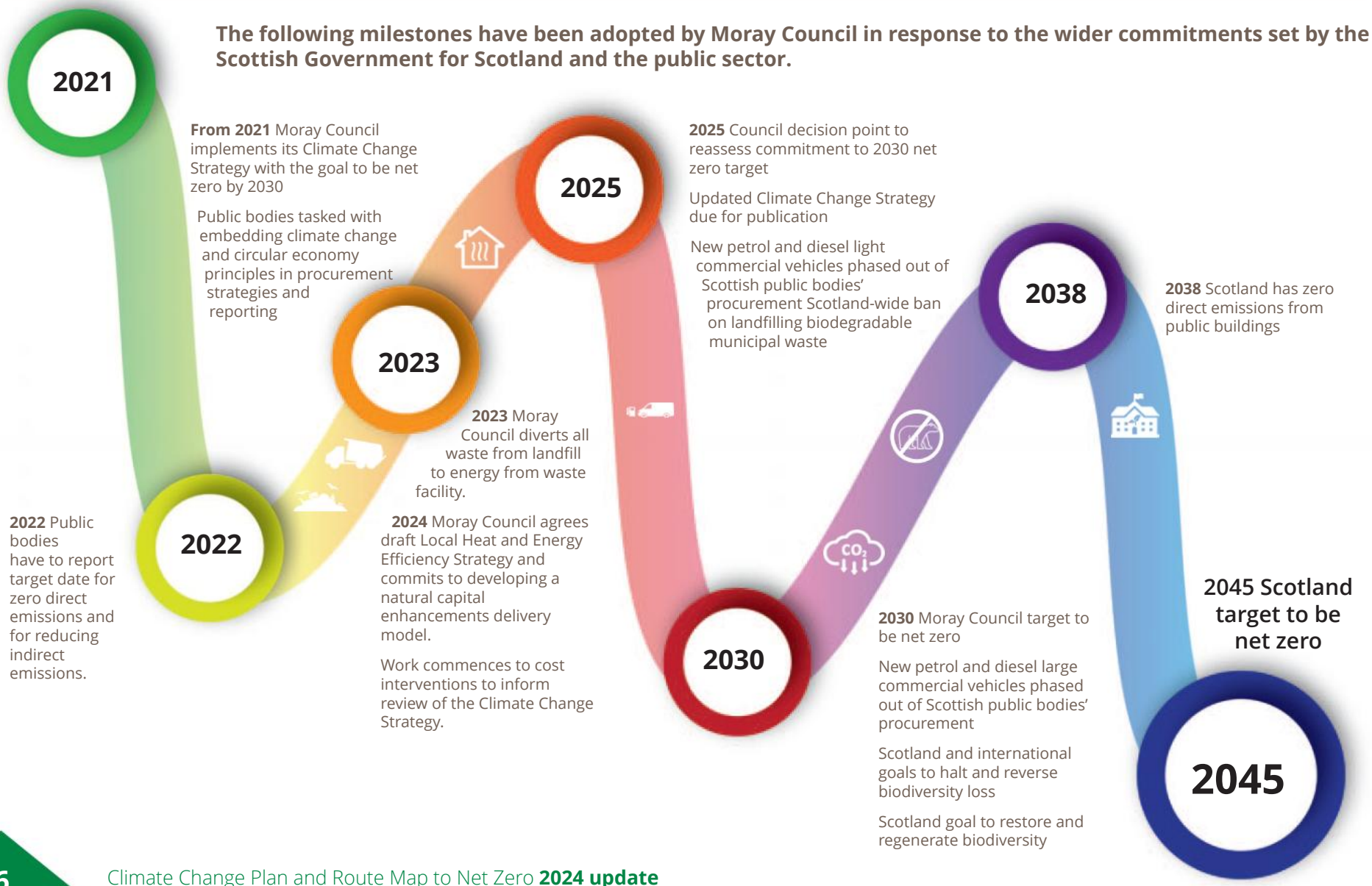
It should be noted that as these data are from prior to the COVID-19 pandemic, operational emissions were minimal as most staff worked from an office base and home working emissions were not being recorded. The first time that the Council recorded homeworking emissions was during the pandemic.

*Table 1. Moray Council 2017/18 baseline carbon emissions.*

| Emission source by area and source | | Carbon emissions ($tCO_2e$) |
|---|---|---|
| **Building heat** | Natural gas | 4,077.9 |
| | Gas oil | 1,034.1 |
| | Biomass | 34.7 |
| | Purchased heat and steam | 15.4 |
| | | **Subtotal - 5,162.1** |
| **Building electricity** | Primary schools and nurseries | 1,122.0 |
| | Secondary schools | 1,177.3 |
| | Unmetered electricity | 1,685.5 |
| | Offices | 523.8 |
| | Community facilities | 358.5 |
| | Residential homes and day centres | 145.7 |
| | Sports facilities | 249.6 |
| | Industrial | 346.2 |
| | Other | 611.0 |
| | | **Subtotal - 6,219.6** |
| **Transport** | Diesel | 3,591.5 |
| | Petrol | 27.5 |
| | Gas oil | 776.6 |
| | Electric vehicles | 0.0 |
| | Hybrid vehicles | 0.0 |
| | Marine fuel oil | 68.2 |
| | | **Subtotal - 4,463.8** |
| **Waste** | Landfill gas | 0.0 |
| | Municipal refuse to landfill | 9,130.3 |
| | Commercial, industrial and clinical waste to landfill | 2,048.7 |
| | Recycling and composting | 387.2 |
| | | **Subtotal - 11,566.2** |
| **Operational emissions** | Outdoor spaces | 72.1 |
| | Homeworking emissions | 0.0 |
| | Water supply and treatment | 125.8 |
| | Corporate travel | 394.8 |
| | | **Subtotal - 592.7** |
| | | **TOTAL - 28,004.4** |

# 3. Our climate action progress

**The following milestones have been adopted by Moray Council in response to the wider commitments set by the Scottish Government for Scotland and the public sector.**



The way that the Council conducts its work and manages its assets all has an impact on the climate and nature. Every service has a responsibility to reduce this impact.

If progress is to be made on the Council's targets, it must consider what it is doing and how it is doing it. Within that, the Council should also reflect on the lessons that it can learn from examples of good progress and how these can be applied to future action.

# 3.1 Building heat and electricity

### 3.1.1 Overview

The Council's property portfolio comprises a range of buildings including offices, schools, libraries, sports facilities and depots. These buildings vary in age, size, energy efficiency and condition.

Most of the Council's buildings are heated by natural gas or gas oil. However, there are some sites where biomass has been installed.

Building electricity is drawn from the national grid. A small minority of buildings have been fitted with solar PV panels. Electricity use also includes street lighting and safety floodlighting.

There are a series of national phased targets for all publicly owned buildings to meet zero emission heating requirements, with a backstop of 2038.

To enable this, support is being provided by the Scottish Government via the:

- Scottish Government Heat Network Support Unit Grant
- Scottish Public Sector Energy Efficiency Loan Scheme
- Scottish Central Government Energy Efficiency Grant Scheme

### 3.1.2 Current emissions

Emissions from the Council's buildings are split into two categories: building heat and building electricity.

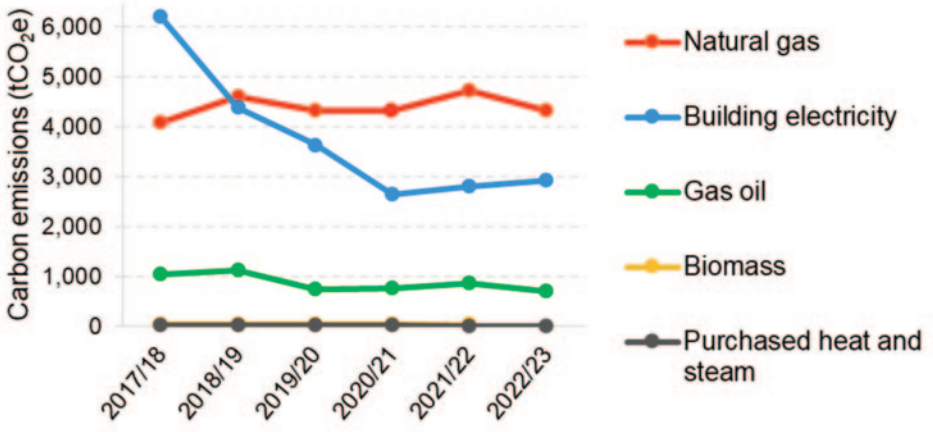
Building electricity emissions currently represent 11% of our overall emissions. As shown in Figure 5, building electricity emissions have decreased by 66% from our baseline. This is due to a greener national grid and reduced electricity consumption through efficiency programmes such as those in Case Study 1.

Further significant emissions reduction is achievable in this area with strategic investment (spend-to-save basis) – particularly through widespread adoption of roof-mounted solar PV panels.

Building heat emissions currently represent 24% of the Council's overall emissions.

Whilst use of gas oil and purchased heat and steam has decreased over the baseline period, Figure 5 illustrates a continued reliance in the most recent reporting period on natural gas and gas oil for building heat. This is largely due to a return to 'business as usual' working practices following the marked decrease in these emissions during the Covid-19 pandemic working restrictions, as well as decisions made to continue use of gas boilers on cost grounds.

Figure 5. Building heat and electricity emissions from baseline to present.




## Case study 1: Pilmuir Nursery

Pilmuir Nursery, a large nursery built in 2020, demonstrates how modern design principles can contribute to emissions reduction.

The nursery uses an Air Source Heat Pump (ASHP) for heating. This uses renewable energy from the ambient air, resulting in at least three times the efficiency of conventional gas or oil boilers. This shift translates to a significant reduction in $CO_2$ emissions.

Rooftop solar PV panels generate around 2,500 kWh of clean electricity per year. This offsets the energy costs of the ASHP and the entire nursery, reducing reliance on the grid and saving an estimated 480 kg$CO_2$e each year.

Pilmuir Nursery serves as a successful example of how sustainable design can be effectively integrated into council buildings. By prioritising energy efficiency and renewable energy generation, the nursery demonstrates a cost-effective and sustainable building solution.

### 3.1.3 Action areas

| Outcomes | Actions include: |
|---|---|
| **Reduced heat and electricity consumption** | • Increasing building user awareness of ways to reduce energy use and save utility costs<br>• Curtailing building opening times<br>• Progress a 'fabric first' approach to building design<br>• Identifying opportunities for heating and power refurbishment in the learning estate<br>• Promoting Smarter Working |
| **More energy produced by renewables and low carbon sources** | • Feasibility studies to consider renewable energy potential across the Council's property portfolio, and potential for connect to a heat network<br>• Installing renewable energy technologies on council-owned buildings and land<br>• Replacement of carbon-based heating systems |
| **Reduced building carbon output and increased energy efficiency** | • Aim to achieve zero carbon standards for all new buildings, including housing and schools<br>• Achieve Energy Efficiency Standard for Social Housing (EESSH) for all council housing |

# 3.2 Transport

### 3.2.1 Overview

The Council's fleet is used by employees to conduct council business and deliver services for the people of Moray. It comprises over 500 cars, vans, buses, trucks, specialist vehicles and vessels.

Most of the fleet runs on diesel or gas oil fuel. Marine fuel oil is currently used in council vessels. Petrol is used for open spaces machinery.

There are currently a series of national targets in relation to public sector transport fleets:

- All fossil fuel cars to be replaced by zero emission alternatives by 2025
- No purchases of fossil fuel powered light commercial vehicles (under 3.5 tonnes) after 2025, with remaining vehicles phased out by 2030
- Phase out heavy-duty vehicles by 2040

## Case study 2: Bus Revolution


The Bus Revolution project launched in May 2023 with a goal of reducing the environmental impact of transport in Moray by 30 $tCO_2e$ by 2030.

Bus Revolution leverages existing public transport expertise to tackle a critical need: connecting residents in rural Moray to essential services like work, education, and leisure. This innovative project offers a flexible, on-demand service accessible through a user-friendly app.

In the first 6 months of service, the project's electric vehicles saved consumption of an estimated 3,400 litres of diesel and 8.5 $tCO_2e$. With the carbon cost of electricity included, this resulted in direct emission savings of 7.6 $tCO_2e$, exceeding the project's annual carbon saving target of 4.3 $tCO_2e$.

Bus Revolution represents a transformation in rural mobility, offering freedom and opportunity while promoting sustainability.

### 3.2.2 Current emissions

Emissions from the Council's fleet are mostly from the use of diesel (Figure 6).

In the most recent reporting period, there has been a rise in emissions from diesel use (Figure 7). This is largely due to a continued return to 'business as usual' working practices following the COVID-19 pandemic working restrictions.

Fossil fuel cars in Moray will not all be replaced by the national target of 2025, owing to decisions taken recently by the Council due to immature technology and funding constraints. Subject to decisions on funding and infrastructure, it is possible that no purchases of fossil fuel powered light commercial vehicles (under 3.5 tonnes) will occur after 2025, with remaining vehicles phased out by 2030.

The Zero Emission Fleet Replacement Strategy details the Council's plans to decarbonise the remainder of the fleet in line with the Scottish Government's net zero targets.

*Figure 6. Breakdown of Moray Council transport emissions 2022-23.*

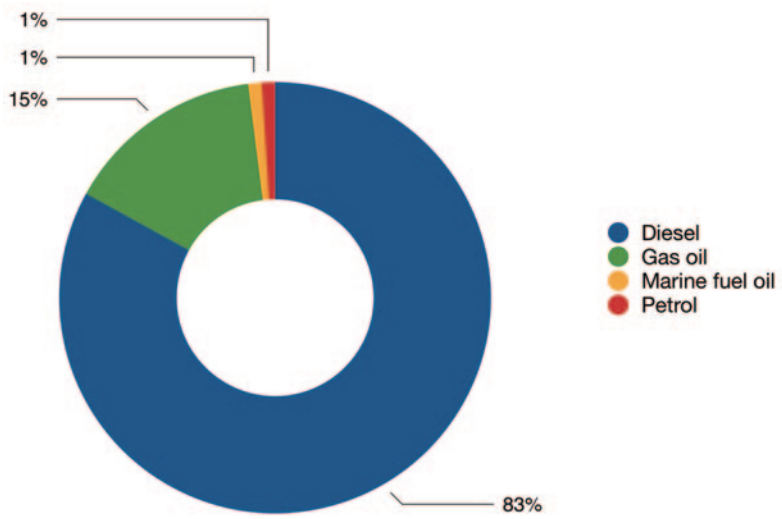
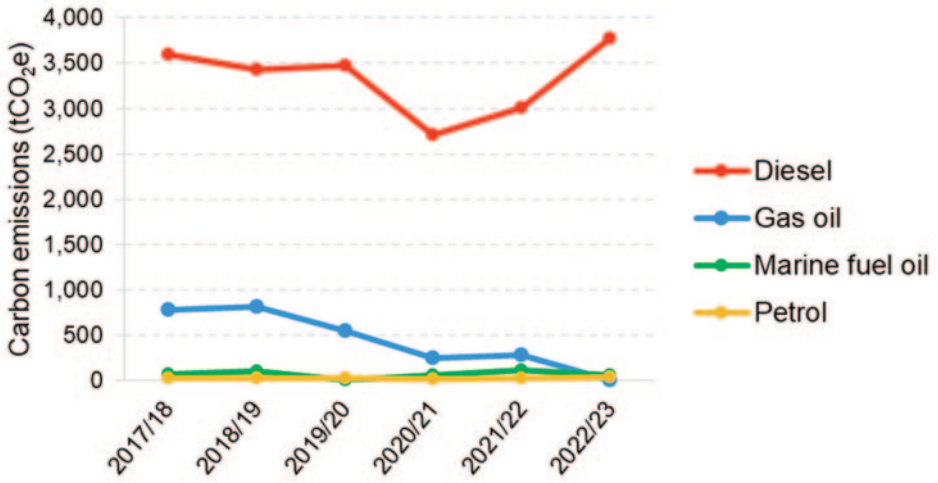



*Figure 7. Transport emissions from baseline date to present.*



### 3.2.3 Action areas

| Outcomes | Actions include: |
|---|---|
| **Decarbonised council fleet** | • Displacing fossil fuel powered vehicles and plant with ULEV alternatives |
| **Increased awareness of actions and opportunities to reduce emissions** | • Developing and promoting staff travel plans<br>• Delivering and promoting active travel to school campaigns<br>• Developing a calendar of sustainable events |
| **Facilitating emissions reduction** | • Developing strategy and guidance for provision of public EV charging facilities in Moray<br>• Organising bicycle maintenance sessions and led rides for staff<br>• Parking management around schools and supporting modal shift from vehicles to active travel |

# 3.3 Waste

### 3.3.1 Overview

Waste is collected across Moray from households and commercial organisations. The Council is in the process of closing its landfill site at Nether Dallachy which now handles a small volume of commercial and industrial waste. From May 2023, the Council diverted its municipal waste from landfill to a new energy from waste facility (Case Study 2).

Disposing of waste within landfill is the worst option for the environment and leads to significant carbon emissions. It should be the last resort for waste disposal (Figure 8). Prioritising the waste management hierarchy is crucial for further reduction in waste emissions. This means encouraging and implementing initiatives which promote waste prevention, reuse and recycling wherever possible.


*Figure 8. Scotland's waste management hierarchy (Scottish Government 2015)*

There are several national targets in relation to waste management:

- Minimum recycling from all sources to be 70% by 2025
- Maximum of 5% of all waste sent to landfill by 2025
- 33% reduction in food waste by 2025

## Case study 2: NESS Energy from Waste facility

Despite the Council's efforts to reduce residual waste through minimisation campaigns, recycling, composting and use of other treatments, a substantial quantity of residual waste that is generated will still need to be collected and cannot be landfilled anymore.

The NESS Energy from Waste facility, a collaboration between Aberdeen City, Aberdeenshire and Moray Councils, opened in April 2024 and diverts non-recyclable waste from landfill and transforms it into clean energy.

This state-of-the-art plant processes 150,000 tonnes of waste annually, generating electricity for the national grid and heat for a local district heating network.

Diverting this residual waste from landfill to this facility will reduce the Council's waste emissions by around 95%.

Leader of Moray Council, Councillor Kathleen Robertson, said: "The opening of this facility couldn't come at a better time and ensures that we not only meet our legislative obligations but will ensure that value, in terms of heat and electricity, is extracted from our waste.

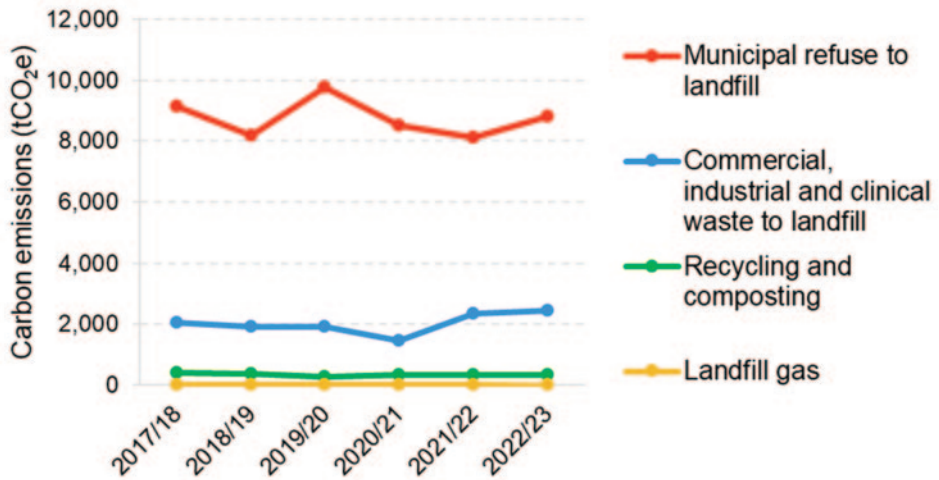
"As a high performing recycling authority, we're pleased we have a modern facility that will serve the residents of Moray, and our partner authorities, for decades to come."

### 3.3.2 Current emissions

Moray recorded the highest recycling rate across all local authorties in Scotland during 2022. The Council's waste operations are undergoing a significant transformation. While currently responsible for 97% of all waste emissions (Figure 9), a switch to energy from waste technology will lead to a significant reduction in the next reporting year.

Beyond existing landfill emissions, further emissions result from the processes involved in recycling and composting waste. The ongoing production of landfill gas at Nether Dallachy results in a negligible level of annual emissions.

*Figure 9. Waste emissions from baseline date to present.*




### 3.3.3 Action areas

| Outcomes | Actions include: |
|---|---|
| **Reduced emissions from non-recyclable waste** | • Diverting non-recyclable waste to NESS energy from waste facility in Aberdeen |
| **Reduction in residual waste** | • Working with Zero Waste Scotland and third sector partners to progress projects to reduce waste through re-use and recycling<br>• Carrying out education on recycling and waste reduction to improve sustainability awareness and recycling in schools and across council buildings<br>• Continue to drive participation in kirbside recycling including green waste through promotion and increased sales of the green waste permit<br>• Supporting creation and promotion of a Community Identified Benefits Portal, facilitating collaborative relationships between local construction firms/developers and circular economy initiatives<br>• Improving recycling and food composting facilities in schools |

# 3.4 Operating Emissions

### 3.4.1 Overview

Operating emissions result from the day-to-day work of the Council. These include an annually estimated carbon emissions impact for employees working from home, commuting, electricity use in outdoor spaces, the use and treatment of water, and corporate travel.

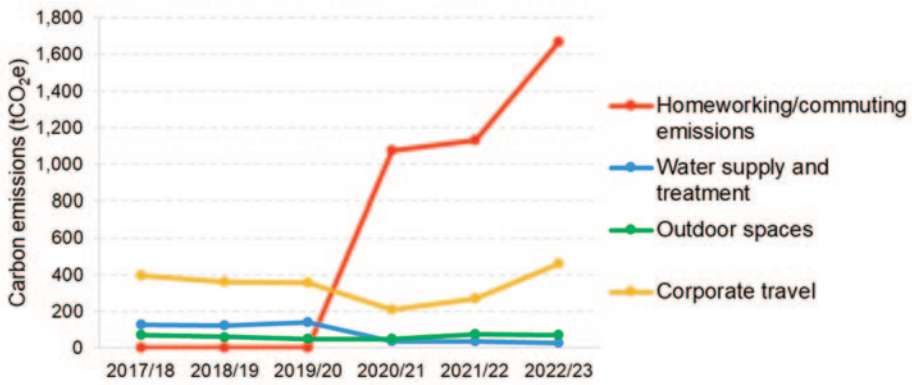
### 3.4.2 Current emissions

The Council's operating emissions have marginally increased over the past year (Figure 10).

Homeworking emissions were first required to be recorded in 2020/21, and since 2022/23 have also included staff commuting emissions.

Emissions from electricity use in outdoor spaces have followed a decreasing trend in recent years owing to ongoing decarbonisation programmes such as those in Case Study 3.

*Figure 10. Operating emissions from baseline date to present.*




## Case study 3: LED street lighting programme

The Council's street lighting spend-to-save programme saw the replacement of approximately 17,600 lamps across Moray with LED alternatives.

The typical lifespan of an LED street light is estimated to around 25 years.

By comparison, traditional lamps last 4-5 years, resulting in more costly maintenance regime requirements.

The programme has resulted in energy use reductions of almost 70%, as well as a reduction in light pollution across the Moray region.

### 3.4.3 Action areas

| Outcomes | Actions include: |
|---|---|
| **Reduced emissions from operational actions** | • Supporting homeworkers to reduce their emissions through relevant advice and practical assistance<br>• Introducing an ultra-low emission vehicle (ULEV) salary sacrifice scheme for employees<br>• Promoting Smarter Working<br>• Increasing use of the cloud to reduce server network and electricity consumption<br>• Continue to make school meals more sustainable with a reduced carbon impact<br>• Developing and promoting more vegetarian and vegan food options |
| **Increased awareness of actions and opportunities to reduce emissions** | • Developing and delivering climate and nature emergency training for staff and elected members<br>• Updating climate change awareness training as part of the employee induction process<br>• Increasing opportunities for 'Learning for Sustainability' within the school curriculum |

| Outcomes | Actions include: |
|---|---|
| | • Applying zero and low carbon objectives as a factor in all investment decisions in relation to budgets and the Capital Plan<br>• Ensuring the Climate Change Strategy and Action Plan are living documents and remain fresh and valid until 2030<br>• Assessing climate change and biodiversity impacts as part of all reports to committee<br>• Supporting the development of knowledge and skills to promote innovation and effective carbon management across departments<br>• Supporting opportunities for teachers and pupils to access and share knowledge/resources to progress climate change work |

# 3.5 Procurement and Investment

### 3.5.1 Overview

Around a third of the country's emissions are dependent on sectors that are directly shaped or influenced by local authority practices, policy or partnerships[8]. It is to this end that procurement performs such a key role in reducing national climate impact.

## Case study 4: Food for Moray supplier engagement event

The Food for Moray event invited any business interested in supplying fresh meat, fruit and veg and bakery products to schools to learn more about the process and gain advice from the teams involved.

Suppliers spoke with relevant officers to find out about the criteria for supplying schools, how they can operate more sustainably and evidence this in their bids. The event was attended by officers from catering, climate change, procurement and community wealth building, as well as advisers from Business Gateway. Existing suppliers were on hand to share their experience of supplying the council.

Suppliers liked that they could come to talk with relevant officers and obtain information before deciding whether to proceed with the tender process. It was an excellent opportunity for officers to handle any concerns or misconceptions about the process at an early stage.

Feedback from attendees was very positive. Three local butchers went on to join the tender process, and one purchased an electric van.

Procurement of goods and services with the Council amounts to some £140 million annually. The Council therefore has a significant influence locally and regionally on climate change through procurement.

The Procurement Reform (Scotland) Act 2014 introduced a sustainable procurement duty for local authorities. This requires that before the Council buys anything, it must think about:

- how it can improve the social, environmental and economic wellbeing of Moray, with a particular focus on reducing inequality
- how its procurement processes can facilitate the involvement of SMEs, third sector bodies and supported business
- how public procurement can be used to promote innovation

[8] UK Climate Change Committee (2020) 'Local authorities and the sixth carbon budget'.

Climate change and procurement officers have worked to develop a simple process for suppliers to evidence their carbon reduction actions when bidding for smaller contracts.

The Council has also developed Sustainable Procurement Guidance and an associated training module and embedded this within the tender process to reflect the priorities and actions of the Climate Change Strategy.

### 3.5.2 Action areas

| Outcomes | Actions include: |
|---|---|
| **Support suppliers to reduce their climate impact** | • Developing a simple process for suppliers to evidence their carbon reduction actions when bidding for smaller contracts<br>• Developing an action plan for raising awareness to local business of new opportunities created through the Scottish Government's Just Transition approach, following approval of the Community Wealth Building Strategy |
| **Maximise opportunities for climate action through procurement** | • Continuing to develop the non-cash benefits available through procurement<br>• Implementing updates into the procurement process<br>• Developing sustainable procurement guidance and updating modules as appropriate<br>• Supporting and informing departmental lead officers through the sustainable procurement process |

# 3.6 Nature and carbon sequestration

### 3.6.1 Overview

The Council has a duty to further the conservation of biodiversity when carrying out its work.

Many of the Council's activities have the potential to drive biodiversity loss or nature recovery. These include discharging responsibility as Planning Authority through application of policy, as a landowner by how the estate is managed, and as Education Authority through how young people are connected with nature. The Council's biodiversity duty should be exercised through all these responsibilities to support the national target to restore and reverse biodiversity loss by 2045.

Enhancing biodiversity can also sequester carbon through well-managed soil and vegetation, thereby reducing net emissions (Figure 12).

The **Scottish Biodiversity Strategy** recognises the key role that local authorities must play in delivering nature recovery with broad national targets for Scotland to halt and reverse nature loss by 2030, and to restore and regenerate biodiversity by 2045.

NPF4 places the climate and nature crises at the centre of planning policy, in addition to rebalancing planning policy to ensure that positive effects for biodiversity are secured. Significant weight is to be given to the climate and nature crises in all development decisions, so that biodiversity is enhanced, and nature networks strengthened. The policies also promote the use of nature-based solutions.

### 3.6.2 Current activity - internal

The Council's latest biodiversity duty report was published in December 2023, highlighting continued improvements in managing council land positively for nature. Key actions from the past year have been:

- Five new wildflower / living lawn sites added, and condition surveys for all wild flower sites completed with recommendations for improved management;
- Invasive non-native tree removal in the Oakwood Site of Special Scientific Interest;
- Replacing even aged spruce with mixed native trees at Millbuies woodland and loch; and
- Reducing the use of herbicides in parks by almost half, allowing grass to grow longer and flowering plants to be present in some areas.

Most of the Council's land is not being managed with biodiversity as primary objective. This currently includes most park land, roadside verges, school playgrounds, and smaller spaces around buildings.

### 3.6.2 Current activity – Moray area and Council influence

Developments of every size are required to enhance biodiversity and should also use nature-based-solutions where possible. With planning permission granted for over 12,000 units each year in Moray, this presents a significant opportunity to secure positive effects for nature.

The Council's quality audit process has highlighted that while some protective measures are working as they should be, there is evidence of a lack of site-specific biodiversity improvements across development sites, particularly in smaller housing developments.

A biodiversity study was completed during 2023 to inform the next LDP, reviewing the Council's current policies against NPF4 and highlighting important species, habitats and ecological links across Moray. This also provided a foundation for the development of a Moray Nature Network, which is now being mapped. The nature network will address nature recovery on a landscape scale.

The Council's new Woodland and Forestry Strategy highlights opportunities for climate mitigation and adaptation alongside nature recovery. The strategy will help to guide new woodland creation as well as to encourage more urban tree cover and skills development to support this growing sector.

Studies to identify natural capital enhancement opportunities which could enable carbon sequestration on council land and across Moray were presented to Council in spring 2024. Council agreed that the opportunities be progressed as part of the next LDP and through a suitable project delivery model yet to be agreed.

## Case study 5: Millbuies woodland restructuring

Major forestry operations were undertaken at Millbuies woodland and loch with the aim of improving biodiversity and climate resilience.

A large area of even aged non-native conifers were planted between 1960 and 1990 and while they provide some refuge for wildlife this is very limited compared to a more diverse native woodland composition.

The devastating rate of biodiversity loss evidenced over the last 25 years, combined with increased frequency and severity of storm damage, risk of pests and diseases on woodland motivated urgent action to be taken.

9,750 mixed native trees have now been replanted across 3.6 hectares to the south of the loch, including Scots pine, oak and silver birch. This diverse mix will soon create a much healthier ecosystem and will be managed with low intervention and cost in the future.

### 3.6.3 Action areas

| Outcomes | Actions include: |
|---|---|
| **Maximise opportunities to sequester carbon within existing council assets** | • Progress and monitor carbon sequestration opportunities on council land holdings, beginning with the development of a suitable delivery model |
| **Contribute to halting and restoring nature loss** | • Deliver the direct grant from Scottish Government's Nature Restoration Fund and increase nature positive management of council land<br>• Promote and support developments to be nature positive through the planning process<br>• Work with partners, including NESBiP and Moray CAN, to progress biodiversity actions at the local level and support the development of Nature Networks |

*Figure 11. Nature based solutions to climate change (based on content from Improvement Service 2021).*

# 3.7 Adaptation

## Overview

The Council has a statutory obligation within its annual Public Bodies Climate Change Duties reporting to record how it is contributing to Scotland's Adaptation Programme.

There is also a statutory duty to carry out actions to adapt to the impacts of climate change.

The key outcomes that the Council is required to contribute to include:

- **Outcome 1:** Our communities are inclusive, empowered, resilient and safe in response to the changing climate.
- **Outcome 3:** Our inclusive and sustainable economy is flexible, adaptable and responsive to the changing climate.
- **Outcome 5:** Our natural environment is valued, enjoyed, protected and enhanced and has increased resilience to climate change.

NPF4 identifies the Scottish adaptation programme as a cross-cutting policy link, requiring LDPs to adapt to the current and future risks of climate change by promoting nature recovery and restoration in Moray and introducing policy requirements which ensure that developments consider and take steps to address a range of climate risks.

**The Civil Contingencies Act (2004)** requires the Council to assess the risk of emergencies occurring and maintain plans to ensure that services continue to be delivered in the event of an emergency. Severe weather and climate change are linked to emergencies that may result in wide impacts ranging from serious environmental damage to loss of life.

Under the **Flood Risk Management (Scotland) Act 2009**, the Council has a statutory duty to implement and maintain flood protection actions and prepare local flood risk management plans. The Council is the lead authority for the Findhorn, Nairn and Speyside Local Plan District and works with partners to deliver the plan.

## Current activity

A climate change adaptation benchmarking process was undertaken over the past year, which involved collating council activity which contributes to the Scottish adaptation programme.

While the Council is a national leader in our approach to coastal change and has robust flood risk management plans in place, very little consideration has been given to how the wide range of impacts of climate will affect the organisation and services it delivers. The benchmarking process itself has begun to raise awareness and understanding, alongside the climate change training programme.

The Scottish Government's guidance outlines the need for flexible measures to be taken to adapt to climate change risks to critical infrastructure. The Council has supported the establishment of 14 Community Resilience Groups and draft plans are now in place for Lossiemouth, Forres, Keith, Elgin, Portgordon, Buckie and Aberlour.

Moray is covered by Regional and Local Flood Risk Management Plans that identify vulnerabilities and actions in place to address risks. The plans follow a 6-year cycle, prioritising actions with the local plans detailing the responsible body, timescales and funding for these actions.

An innovative pathway approach is now in place for Moray's coastline. The Regional Coastal Change Adaptation Plan and ten local plans will enable the council to plan for, and react to, different scenarios as they are triggered. Collaborative working across services will ensure that the coastal plans links with wider adaptation plans and how services can be delivered while considering possible climate change impacts.

# 3.8 External influence

### 3.8.1 Overview

Many of the Council's statutory duties are related to reducing greenhouse gas emissions in the wider Moray area. This includes actions such as supporting energy efficiency improvements in homes, active travel and green training as part of a just transition away from fossil fuels.

While this will not reduce the Council's direct carbon footprint, the Climate Change Strategy also seeks to reduce carbon emissions across Moray by demonstrating leadership and good practice.

The leadership role of local authorities is reflected in the Scottish Public Engagement Strategy for Climate Change, to support the wider area to understand, participate and act on climate change. This includes being prepared for the impacts of climate change, and several of the Council's responsibilities to the wider area cross over with the duty to support delivery of the Scottish National Adaptation Programme. In delivering the Biodiversity Duty, the Council must also aim to engage the wider community with nature alongside embedding nature conservation in service delivery.

Engaging with the community is essential to understand local concerns and bring about necessary change. A collaborative approach can lead to more effective policies, behavioural changes, enhanced community resilience and a reduction in climate change impacts.

### 3.8.2 Current activity

The Council has produced its first draft Local Heat and Energy Efficiency Strategy (LHEES). This strategy is crucial for communities as it aims to provide affordable and sustainable heating solutions, reduce energy consumption and alleviate fuel poverty. LHEES can help to create jobs in the green sector, improve health and wellbeing, and contribute to achieving net zero – thus ultimately benefitting the local economy and wider environment.

NPF4 will help to guide the location of new housing, transport links and infrastructure, ensuring that communities have access to the services they need whilst enhancing the environment and meeting net zero targets.

NPF4 introduces the concept of Local Place Plans (LPPs) which are community-led plans that provide a framework for shaping the future of local places. LPPs are an essential tool for engaging with communities and fostering local democracy, ensuring that Moray's towns and villages are designed with the people who live there in mind.

The Council's Hydrogen Strategy seeks to encourage a local supply chain for hydrogen production and use, providing job opportunities and economic benefits for the region. Using green hydrogen as a fuel for transport, heating and industrial processes it likely to be essential for cutting Moray's regional carbon emissions (Case Study 6).

Moray Climate Action Network (Moray CAN), which is hosted by tsiMORAY, is a collaborative initiative funded by the Scottish Government as a designated climate hub. The network facilitates knowledge exchange, project collaboration, and commissioning opportunities, aiming to address gaps in climate action and build upon existing efforts within the community.

The Council is a member of Moray CAN and contributes support and expertise as well as benefitting from taking a collaborative approach to climate engagement. In 2023-24 Moray CAN distributed £25,900 in community grants to 19 projects that delivered action on climate change, community wellbeing and sustainability.

## Case study 6: Moray hydrogen stakeholder workshop

Over 100 representatives from 75 organisations convened at a two-day workshop in Elgin to explore opportunities in the hydrogen sector. The now annual event, co-organised by Hydrogen Scotland, Moray Council and HIE, highlighted Moray's potential for green hydrogen production.

The Council's Hydrogen Strategy aims to leverage the region's abundant renewable resources to produce clean hydrogen by creating a local supply chain.  Discussions at the workshop explored how this green hydrogen can be used by local industries, particularly distilleries seeking to decarbonise their operations.

By fostering collaboration between public and private sectors, and through production of its regional hydrogen strategy, the Council has been successful in having Moray recognised by the Scottish Government as a 'hydrogen hub' within its strategic plans. This will not only benefit the environment, but also create economic opportunities in green hydrogen production, storage, and distribution.

### 3.8.2 Action areas

| Outcomes | Actions include: |
|---|---|
| **Develop skills and the economy** | • Increasing provision of relevant skills and knowledge for a greener economy to support delivery of the Moray Apprenticeship Strategy<br>• Supporting the planning and delivery of awareness raising events for businesses to transition to a green economy<br>• Joining support networks to assist the progress of climate change action |
| **Enabling the community to understand and take action on climate change** | • Consulting community groups and residents about climate action and delivering the Moray Climate Change Engagement Strategy<br>• Supporting the work of Moray CAN<br>• Engaging with communities to facilitate renewable energy projects<br>• Promoting Moray-specific climate emergency training for community groups and organisations<br>• Promoting the Active Travel Strategy<br>• Delivering the LHEES programme<br>• Continuing the Energy Efficiency Scotland: Area Based Scheme (EES: ABS)<br>• Delivering the Moray Hydrogen Strategy |

| Outcomes | Actions include: |
|---|---|
| **Strategic planning which reflects the climate and nature emergency** | • Implementing NPF4 policies relating to the climate and nature crises.<br>• Updated the Council's Climate Change Strategy and contributing to a Moray-wide climate strategy<br>• Developing a Regional Spatial Strategy<br>• Delivering the new Forest and Woodland Strategy, Food Growing Strategy and Open Space Strategy<br>• Developing 20-minute neighbourhood concepts for Moray's main towns and embedding within the next Local Development Plan<br>• Promoting and supporting brownfield over greenfield development<br>• Providing sustainability guidance to support Moray Growth Deal projects<br>• Implementing and reviewing carbon guidance for planning applications in line with NPF4<br>• Monitoring and reporting of area-wide carbon emissions and actions |

# 4. Where are we going

## 4.1 Reducing carbon emissions

**The Council currently faces a significant challenge in meeting its carbon reduction targets, both locally and nationally. Existing efforts will need to be coupled with further action if the 2030 net zero target is to be met.**

The current pathway of recorded emissions is a projection created using the baseline and other known emissions data. It shows how recorded emissions may change over time when considering the Council's pre-planned actions. Only activities which are highly likely are accounted for within this projection.

This pathway highlights the increase in emissions as a result of the Council's services returning towards a 'business as usual' approach following the pandemic. Notwithstanding that, the overall trend remains that emissions continue to reduce from the baseline value to a level where a carbon sequestration scheme may be used to offset any remaining emissions in the future (Figure 12). In this figure, annual emissions are divided into five categories (Table 2).

*Table 2. Explanation of emissions categories used in carbon emission reporting.*

| Category | Description |
|---|---|
| **Operating emissions** | Emissions generated by the council through its day-to-day work. These consist of emissions that the council can control and influence. These are recorded in the annual greenhouse gas emissions reporting. |
| **Waste** | Emissions from dealing with municipal and industrial-level waste. These are recorded in the annual greenhouse gas emissions reporting. |
| **Building electricity** | Emissions from electricity use in council buildings. These are recorded in the annual greenhouse gas emissions reporting. |
| **Transport** | Emissions from the operation of the Council's fleet vehicles and vessels. These are recorded in the annual greenhouse gas emissions reporting. |
| **Building heat** | Emissions from heating of council buildings. These are recorded in the annual greenhouse gas emissions reporting. |

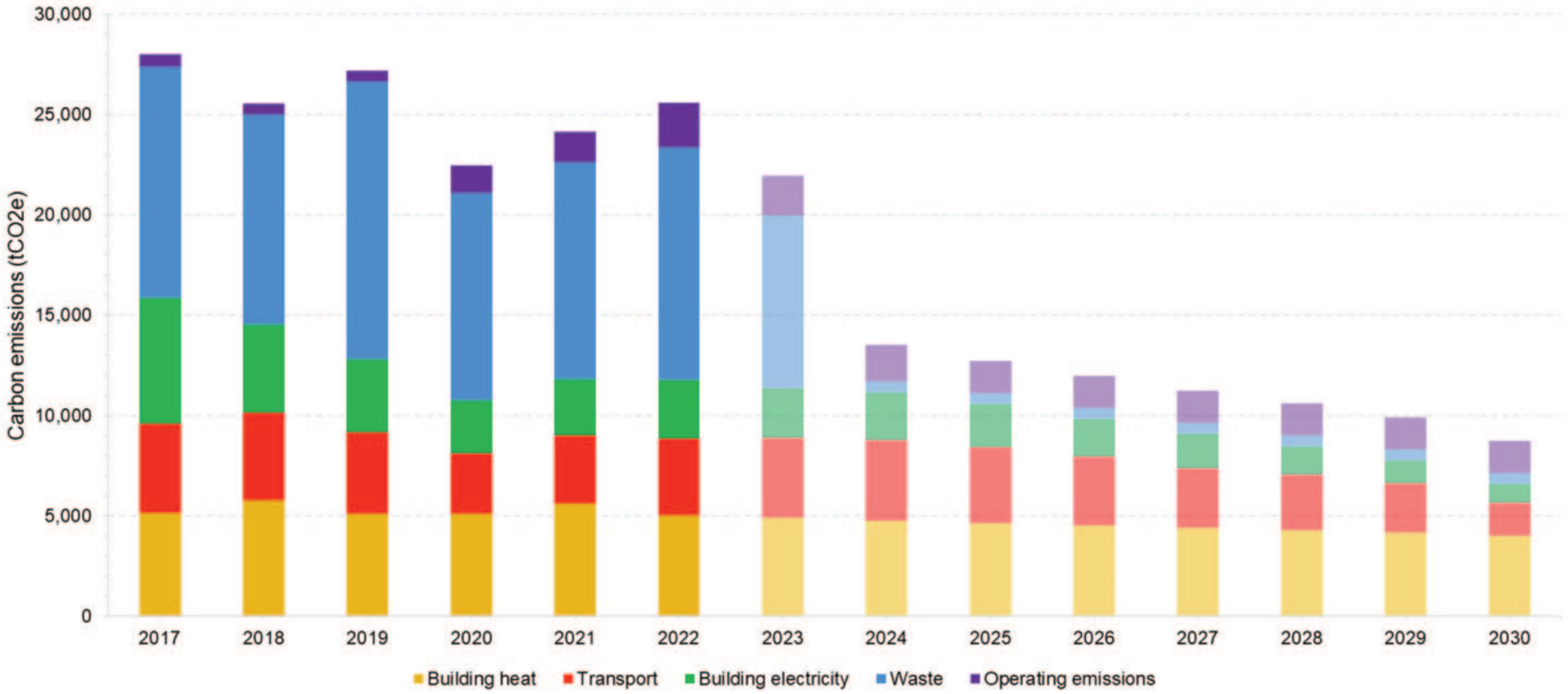
The current pathway aims to find a compromise between speed, technological limitations and funding. Whilst there are likely to be budgetary restrictions, this pathway avoids late adoption of technology and measures. This is to reduce carbon emissions and also because demand could impact on the cost of supply as the 2045 deadline approaches and public and private sectors are potentially legislated to take action.

A balanced approach to the implementation of measures is more likely to benefit from reducing costs of measures as the scaling up of production reduces costs. This could also allow planned solutions to align with national infrastructure investment. For example, vehicles could continue to transition to zero carbon using batteries, or hydrogen could become more dominant if electricity distribution networks are unable to cope with the electrification of both heat and transport.

The calculations for the current pathway account for:

- **Internal factors:** Known internal changes that will impact on emissions, e.g. confirmed waste management change.
- **External factors:** Known external changes that will impact on emissions, e.g. ongoing decarbonisation of the national grid.
- **Population change**: Annual changes in population, based on the 2018 Scottish Sub-National Populations Projections for Moray, which may impact future emissions.

*Figure 12. Current pathway of recorded carbon emissions from baseline date to 2030. Figures from 2023 onwards are forecast estimates and denoted by a lighter colour.*



**Concerns**

Progress on carbon emissions reduction has been restricted. There are several reasons for this:

- Services within the Council increasingly lack the resources or expertise needed to develop and manage effective carbon and cost reduction projects, and/or secure external funding;
- A lack of shared ownership, leadership and collaboration across services together with competing priorities has created a situation where climate change is often regarded as a separate issue, rather than an opportunity which can be integrated into existing work – creating efficiencies;
- Mixed understanding of climate change at all levels within the Council can hinder buy-in, proactive action and sustainable development; and
- Some decisions taken by the Council have contributed to a delay in carbon emissions reduction. For example, the Council's new fleet replacement strategy which delayed uptake of low emission vehicles due to immature technology and funding constraints.

The upcoming update to the Climate Change Strategy presents an opportunity to reassess the Council's approach and to begin addressing these issues, as well as to better embed climate and sustainable development within transformation plans.

To inform a robust and impactful updated strategy, the Council needs to address several key issues and decide on its net zero targets. These decisions will lay the groundwork for a cohesive approach that delivers on the Council's aspirations.

Net zero must be budgeted for and taken into consideration in the pace of decision making around the renovation and rationalisation of the council building stock. This will enable the production of accurate estimates of financial costs and emissions reductions which will assist future planning. Deciding on the level of commitment to renewable energy projects is crucial. Exploring options like solar panels will help to reduce reliance on fossil fuels which are rising in price and contribute to significant emissions reductions.

Agreeing a delivery model for carbon offsetting through natural capital enhancements presents an opportunity to invest in a variety of benefits for communities whilst reducing emissions.

Identifying and allocating sufficient resources is essential for effective project management. This will ensure the successful implementation of carbon reduction initiatives.

The difficulty and expense of converting buildings to reach net zero means that if further delays are experienced then emissions relating to buildings may not reduce sufficiently to meet targets. Therefore, greater emphasis on other parts of council operations reaching net zero faster, and increased carbon sequestration, may have to be explored if the pace of change continues to be insufficient.

If all information gathering and decisions on future change are made by 2025 then a more accurate assumption can be made for residual emissions and the need for carbon sequestration. This will provide a decision point milestone for the council to reassess the commitment to the 2030 net zero target knowing the full costs and carbon sequestration requirements.

*Benefits and threats associated with current pathway*

In summary, the benefits of threats of the current pathway are:

| Benefits | Threats |
|---|---|
| Reflects the path the council is currently pursuing. Does not commit the council to altering the timing or type of planned expenditure.<br><br>Most statutory deadlines are met. | Carbon sequestration will be required to reach net zero by 2030 as decarbonisation of estate and fleet will not be complete.<br><br>Uncertainty around timescale for building improvement relating to carbon emissions.<br><br>Many of the current commitments to reduce carbon emissions are currently unfunded. The Council requires to use its full breadth of powers to raise/attract funding, apply for government and other external funding, and lobby for further powers or financial assistance as may be required.<br><br>Some statutory deadlines are not met. |

## 4.2 Restoring nature

**The Council's commitment to nature conservation has grown, but future success hinges on securing new funding sources and integrating biodiversity efforts with other initiatives. While expected statutory targets and the uncertainty of dedicated funding pose challenges, the Council plans to address them through a new Moray Biodiversity Strategy, improved staff training, and a focus on community engagement and evidence-based actions.**

The level of nature positive activity taken by the Council has been steadily increasing since the 2018-20 Biodiversity Duty report. The Scottish Government is expected to introduce statutory targets for nature restoration, bringing further responsibilities for local authorities.

In terms of land management, improvements largely relied on dedicated funding through the Scottish Government's Nature Restoration Fund, which runs until 2025/26. There is a risk that progress will slow if this funding stream ends, so alternative sources including private finance and embedding biodiversity within other projects such as the Moray Growth Deal and town centre improvements will be essential. As the Council's natural capital study recommends, carbon sequestration should also be delivered in conjunction with biodiversity enhancement.

A Moray Biodiversity Strategy will be produced alongside the Climate Change Strategy update, focussing on achievable actions that are balanced with the urgency of reversing biodiversity loss. Engaging communities, and increasing opportunities for young people to engage with nature to bring additional benefits should be a priority and support the sourcing of funding. Actions and improvements should be evidence led, using national guidance and measurements as they are available.

Statutory responsibilities for biodiversity have significantly increased through the introduction of NPF4, introducing additional work that is currently being met within existing staff capacity. Improved guidance and training is being developed to support the planning service to deliver positive effects for biodiversity in Moray. Ecological expertise will be drawn upon for larger and more complex developments. Going forward there should be an emphasis on proper biodiversity assessment of all developments, resulting in specific plans that enhance biodiversity and help link to the wider environment.

A significant challenge over the coming years will be the delivery of a Moray Nature Network, which is a requirement of the LDP.  While the Scottish Government has funded mapping and engagement, delivery and monitoring will require additional resources. This should delivered through an integrated approach, bringing wider community benefits while also supporting climate adaptation and mitigation.

## 4.3 Being ready for climate impacts

**There remains a critical gap in the Council's readiness for the impacts of climate change. A recent assessment revealed a low level of maturity of response to climate adaptation and understanding of the Council's vulnerability to climate impacts and the potential financial implications.**

The Council's first adaptation benchmarking exercise highlights the significant shift required to understand and recognise where it is vulnerable to the impacts of climate change, and what the financial implications may be going forward.

An adaptation plan will be embedded within the next Climate Change Strategy Update. This should be evidence led and risk informed, the scope of which will be subject to available resources. The planned programme of engagement for the strategy update will be an opportunity to both gather new information and increase understanding of climate risk.

Until a climate risk assessment has been undertaken the cost to the Council of climate impacts remain unknown, however as the Scottish Fiscal Commission have outlined, 'the implications of not investing in adaptation would be harmful in the long term and could lead to even more pressure on future Scottish Budgets'.

The draft third **Scottish National Adaptation Programme (SNAP 3)** places greater emphasis on the interconnection between climate and nature, drawing close links to the delivery of the Scottish Biodiversity Strategy and National Planning Framework 4. As SNAP 3 is expected to be published by the end of 2024, the Council's climate change strategy update will be able to integrate the planned national outcomes with local needs, as well as develop measures that align with the national monitoring framework.

# 5. Conclusion

**The Council recognises that further action will be required if its 2030 net zero target is to be met. Though progress has been made, current efforts fall short of local and national targets. Whilst challenges lay ahead, there is significant scope to turn these into opportunities for the Council and the wider community. The upcoming Climate Change Strategy update presents a critical opportunity to address these challenges.**

It remains feasible for the Council to achieve net zero if key decisions on building decarbonisation and rationalisation of the estate are taken, and progress is made to enhance solar provision on buildings, consistently improve fleet vehicles and reduce waste in the future. There is also a need to develop a suitable delivery model for natural capital enhancements which will provide any necessary carbon offsetting opportunities.

Securing external funding will be essential if these aspirations are to be met. Success will require a combination of strong leadership, collaboration across services, knowledge building and adequate resourcing to realise opportunities.

Assuming that all necessary decisions are made and information is gathered by 2025, this will enable the development of robust pathways that accurately project residual emissions and the level of carbon sequestration required from 2030 onwards.

With this information, elected members can reassess the feasibility of the 2030 net zero target. They will have a clear picture of the estimated costs, the level of carbon sequestration required, and the impact on other aspects of the Council's climate and nature response. This will enable a well-informed decision on whether to maintain the 2030 target or revise it to achieve a more cohesive and sustainable approach.

# Glossary

| | |
|---|---|
| **active travel** | Journeys made by modes of transport that are fully or partially people-powered, irrespective of the purpose of the journey. It includes walking, people using wheelchairs, cycling (including e-bikes) to name a few. |
| **adaptation** | Adjustments in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. |
| **baseline** | Historical period specified for the purpose of comparing greenhouse gas emissions. |
| **biodiversity** | The variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (UN 1992). |
| **carbon** | Umbrella term used to describe all of the greenhouse gases. |
| **carbon dioxide ($CO_2$)** | A naturally occurring gas, $CO_2$ is also a by-product of burning fossil fuels (such as oil, gas and coal), of burning biomass, of land-use changes and of industrial processes (e.g., cement production). It is the principal anthropogenic greenhouse gas that affects the Earth's radiative balance. |
| **carbon neutrality** | See net zero. |
| **carbon sequestration** | A process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form. |
| **circular economy** | A circular economy is one in which resources are kept in use for as long as possible. |
| **climate action** | Efforts taken to mitigate and adapt to the impacts of climate change. |
| **climate change** | The state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. |
| **climate emergency** | A situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it. |

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| **co-benefits** | The positive effects that a policy or measure aimed at one objective might have on other objectives, thereby increasing the total benefits for society or the environment. Co-benefits are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors. Co-benefits are also referred to as ancillary benefits. |
| **direct emissions** | Emissions directly under the organisation's control. |
| **drought** | A prolonged period of abnormally low rainfall, leading to a shortage of water. |
| **excess deaths** | The number of deaths from all causes during a crisis above and beyond what we would have expected to see under 'normal' conditions. |
| **flood** | The overflowing of the normal confines of a stream or other body of water, or the accumulation of water over areas that are not normally submerged. Floods include river (fluvial) floods, flash floods, urban floods, pluvial floods, sewer floods and coastal floods. |
| **green jobs** | Employment opportunities that contribute to environmental sustainability. |

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| **green recovery** | The transition to a more sustainable and resilient economy following a crisis, such as the Covid-19 pandemic, that prioritises investment in low carbon technologies, sustainable infrastructure and job creation in environmentally friendly sectors. |
| **greenhouse gas emissions** | Any gas that contributes to the greenhouse effect by absorbing infrared radiation in the atmosphere. |
| **heatwave** | A heatwave is an extended period of hot weather relative to the expected conditions of the area at that time of year. In Moray, a heatwave event is defined a at least three consecutive days with daily maximum temperatures meeting or exceeding 25°C. |
| **indirect emissions** | Emissions outside the organisation's control but over which it has an influence. |
| **insetting** | The process of offsetting carbon emissions by sequestering carbon within the organisation's own landholdings. |
| **IPCC** | Intergovernmental Panel on Climate Change. A scientific body established by the United Nations to provide policymakers with regular assessments of the state of climate science and the potential impacts of climate change, as well as strategies for mitigation and adaptation. |

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| **Just transition** | Designing policies in a way that ensures the benefits of climate action are shared widely, while the costs do not unfairly burden those least able to pay, or whose livelihoods are directly or indirectly at risk as the economy shifts and changes. |
| **Mitigation** | A human intervention to reduce emissions or enhance the sinks of greenhouse gases. |
| **Nature emergency** | The rapidly worsening state of the natural world, including the loss of biodiversity, ecosystem degradation, and the threat of ecological collapse, caused by human activities such as habitat destruction, pollution and climate change. |
| **Nature network** | A network which connects together nature-rich sites, including restoration areas and other environmental projects, through a series of areas of suitable habitat, habitat corridors, and stepping-stones. |
| **Net zero** | Net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. |

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| **Offsetting** | The practice of compensating for carbon emissions by funding projects that reduce greenhouse gas emissions outside of the organisation's own landholdings. |
| **Renewable energy** | Energy derived from natural sources that are replenished at a higher rate than they are consumed. |
| **Sustainable development** | Meeting the needs of the present without compromising the ability of future generations to meet their own needs. |
| **$tCO_2e$** | Tonnes of carbon dioxide equivalent. A metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential (GWP), by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential. |
| **Wildfire** | Any uncontrolled vegetation fire which requires a decision, or action, regarding suppression. |