Route Map to Net Zero- Moray Council

Contents

Foreword

Climate change is the biggest challenge of our lifetime and the actions that we take now will have lasting impacts on future generations.

Clear scientific evidence shows that climate change is happening faster than expected, and that action must be taken now to protect our communities. This was formally recognised on 27 June 2019 when Moray Council declared a climate and ecological emergency. The declaration recognised the seriousness about taking necessary actions to protect our area, country, and planet.

Our Climate Change Strategy and Action Plan was prepared and adopted with the aim of Moray Council becoming carbon neutral by 2030. The Council is committed to working with the wider community to promote and facilitate ongoing local action on climate change.

The introduction of the Climate Change Strategy, together with our Local Development Plan, is designed to provide a co-ordinated response to help all of Moray deal with the challenges that climate change will bring, and to provide a clear vision to help create a sustainable future. Our **Route Map to Net Zero** compliments these documents by creating a framework for our actions aimed at reducing carbon emissions to net zero by 2030.

We don't have all the answers yet, and there's a long way to go – but our **Route Map to Net Zero** lays out an agile and strategic approach that will tackle our emissions and be adaptable as funding is made available.

We will progress actions such as investing in net zero buildings and aligning capital investment and infrastructure funding with our net zero objectives. We will improve the climate impact of services, involve all sections of the council, learn from our activities, and we will plan to speed up the actions required to meet our target.

We're under no illusion that for Moray Council to reach net zero by 2030 is a hugely ambitious target to meet, but there is also much to gain. Efforts to reduce our carbon emissions can bring opportunities, such as cost savings from reduced energy bills, making better use of our resources, creating new employment opportunities in Moray, and making our communities more resilient, healthy and equal. Our **Route Map to Net Zero** will ensure that Moray Council and the people we serve are well placed to benefit from these opportunities.

From Cllr Louise Nicol, Climate Change Champion

Introduction

Scotland's public bodies have a crucial role to play in the shared endeavour to tackle the global climate emergency.

The public sector is central to the implementation of local and national climate policy, and bodies including Moray Council are expected to show leadership by continuing to reduce their emissions quickly.

On 10 March 2021, the council adopted a Climate Change Strategy for 2020-2030. The strategy set a goal for Moray Council to be net zero by 2030. It was agreed that the council, its officers, and members will work with others across Moray to deliver that goal.

Moray Council must take robust action over the next decade to promote policies which reduce climate change emissions. It must continue to cut emissions from its buildings and fleet, and address the significant challenge of decarbonising its procurement processes.

This route map focusses on the council's own operations. It shows how we will lead by example to accelerate action on climate change across Moray. The journey to net zero emissions will be challenging, but we know that climate action can deliver wider social, health and economic co-benefits. Taking action can positively impact communities and help to realise opportunities to reduce inequalities and build back better and greener following the Covid-19 pandemic.

There are several drivers for the council to take climate action. These include:

- **Democratic and Social:** The climate crisis is an inescapable topic, and our young people and our communities are asking us to act. Tackling climate change provides an opportunity to advance cleaner air, safer routes, thriving wildlife areas, and healthier, more sustainable communities
- **Financial:** A just transition from fossil fuels creates opportunities to support green jobs locally and to bring economic and social benefits for the people of Moray. Funding opportunities are increasingly aligned with reducing our impact on the environment. Furthermore, reducing our emissions can deliver savings by freeing up resources for reinvestment in services. For example, the upgrade of lighting to LED deliver electricity savings, but also maintenance savings as this technology needs to be replaced less often.
- **Legal:** The council has a duty to comply with the Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015 and has been reporting its organisational emissions annually to the Scottish Government since 2015/16. With a net zero emissions target of 2045, Scotland has some of the world's most ambitious climate change legislation and public bodies are expected to make a valuable contribution towards achieving the national emissions reduction targets.

Achieving net zero emissions and transitioning to a low carbon economy is a journey. As such, the approach laid out in this report will be reviewed annually and refined, reflecting the organisation's deepening knowledge and learning from the phased approach to reducing carbon emissions.

Section 1: Background

The Climate Change (Scotland) Act 2009 is central to supporting the transition to a sustainable low-carbon economy. It requires action to be taken on both climate change mitigation and adaptation. Delivering these national targets presents huge challenges in terms of the pace of action and the skills and finance required.

1.1 Wider Context of Route Map

Moray Council has three main duties under Section 44 of the Climate Change (Scotland) Act 2009:

1. **Mitigation:** to contribute to reducing greenhouse gas emissions
2. **Adaptation:** to help Moray adapt to a changing climate
3. **Sustainability:** to act in a sustainable manner

By setting a goal of reaching operational net zero by 2030, the council has chosen to play a pivotal role in helping Moray reduce carbon emissions and leading the way in decarbonisation. Some of the key milestones on this journey are set out in Figure 1.

Mitigation

Mitigating climate change requires the reduction of the greenhouse gas emissions that cause climate change and Moray Council meet its declaration of a climate emergency by reducing its emissions and supporting action in the wider community.

Public bodies can have a wide and significant influence on emissions far beyond their organisational boundaries. They can and must act collaboratively to create the conditions by which national, regional and local scale emissions can be reduced in line with Scotland's targets.

Community planning is a statutory requirement within local authorities to support and enable community empowerment and place-making. Moray Council will support local collaboration and coordination of place-based climate action by working to support community planning partners and community groups.

Policy commitments that are driving forward place-based climate action include national policies on Local Heat and Energy Efficiency Strategies (LHEES), National Planning Framework 4 (NPF4), policies on active travel, car journey reduction targets, and the development of concepts such as 20 minute neighbourhoods.

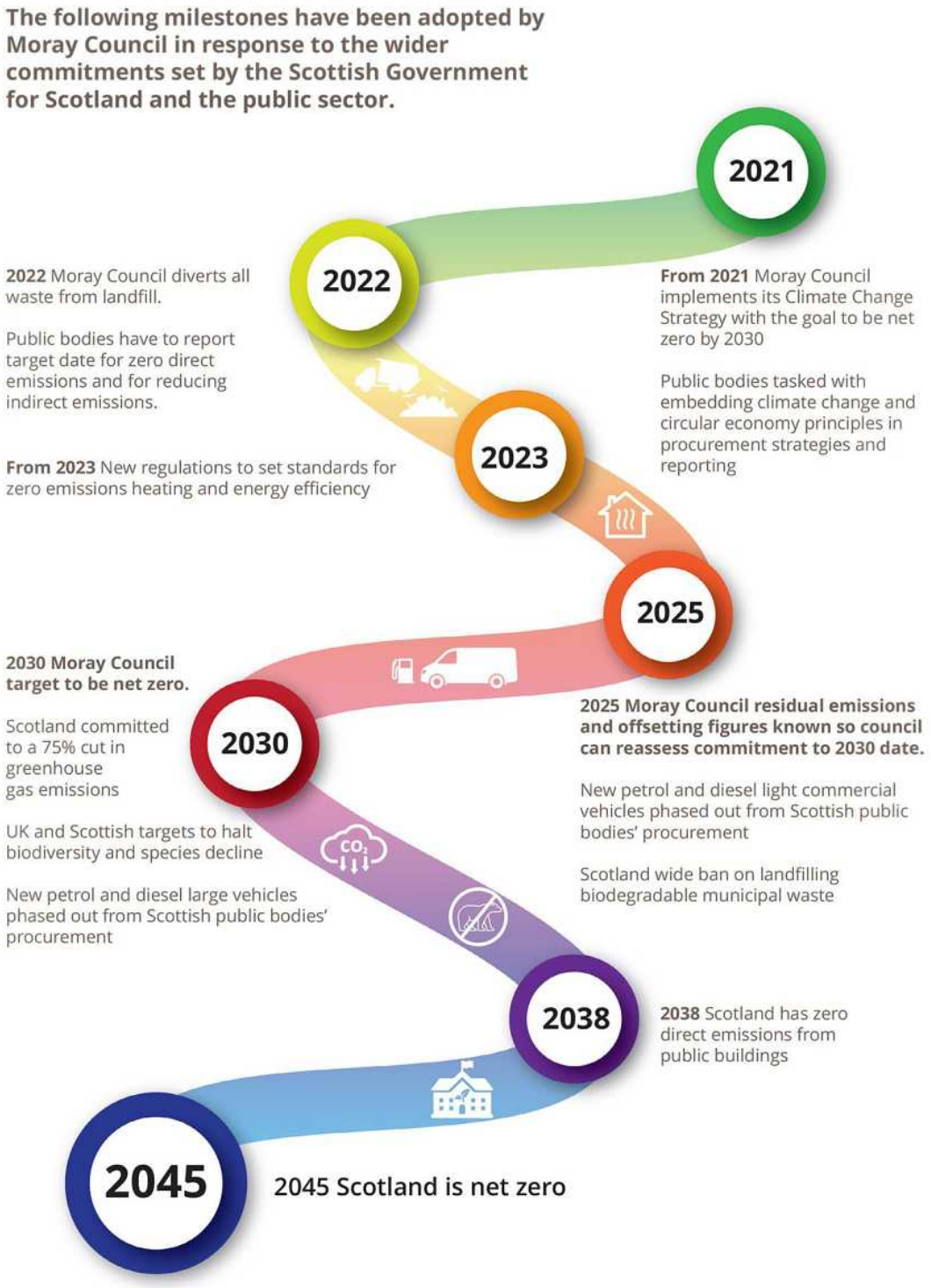


Figure 1. Moray Council and Scottish Government Milestones.

Adaptation

Adapting to climate change will be necessary regardless of how much we manage to cut our carbon emissions. This is because historic emissions have already changed our climate and will continue to do so in the decades to come.

Adaptation could mean using scarce water resources more efficiently, or making changes to the crops we grow or the trees we plant in our forests so that they are less vulnerable to new pests and diseases, storms, or wild fires[1]. The Moray Local Development Plan (MLDP) 2020 provides the policy framework for promoting climate change adaptation and sets out the statutory policies against which new development proposals are considered.

The MLDP includes specific policy requirements on:

- Coastal erosion;
- Biodiversity enhancement;
- Compensatory planting;
- Active travel;
- Food growing areas;
- Use of brownfield sites;
- Promoting green and blue networks;
- Surface water management; and
- Avoiding areas at risk of flooding.

The draft NPF4, currently out for consultation, requires that significant carbon reductions are delivered through aligning the planning system more clearly with climate change priorities.

Flood protection schemes are currently designed with a variable (location-based) percentage allowance for climate change, in line with current SEPA guidelines. The council develops catchment based flood risk management plans, which identify flood risk and proposed mitigation factoring in climate change. These plans adopt an integrated catchment based approach to flood risk management including links to River Basin Management Plans.

Acting in a Sustainable Way

Sustainable development means meeting the needs of the present without compromising the ability for future generations to meet their own needs[2]. Development continues to outpace the ability of our Earth's systems to rebalance and as a result, the natural systems that we rely on to survive are already significantly damaged. Climate change will continue to put pressure on these systems and threaten the ability of the growing world population to meet its needs.

Moray Council has a duty to not only act within our current environmental limits, but to restore natural systems wherever possible. This is further embedded in other national legislation and strategies:

- **Nature Conservation (Scotland) Act 2004:** Public bodies in Scotland have a duty to further the conservation of biodiversity[3].

[1] Adaption Scotland https://www.adaptationscotland.org.uk/

[2] Brundtland Commission

[3] https://www.nature.scot/doc/guidance-note-biodiversity-duty-explained#What+do+public+bodies+need+to+do

- The **Environment Strategy for Scotland** overarching vision is: "One Earth. One home. One shared future. By 2045, by restoring nature and ending Scotland's contribution to climate change, our country is transformed for the better"[4].
- **Scottish Biodiversity Strategy**: An updated strategy is expected in 2022 which will more closely align the response to climate change and nature
- **NPF4** will secure positive effects for biodiversity through development.

There are strong co-benefits to be achieved through acting sustainably and using natural solutions:

- enhancement of wellbeing and health within our communities,
- natural carbon sequestration, and
- ecosystems able to adapt to climate change

These benefits can be realised through using nature based solutions to the many issues we face. There is strong evidence that when people have access to nature their health and wellbeing improves. If looked after well, peat and woodland can absorb carbon and reduce flooding. Catastrophic species decline can be reversed if habitats are restored and ecosystems allowed to function naturally.

Moray Council can deliver this duty by managing its own land sustainably with a nature based approach, through planning regulation, and supporting green employment within our communities.

1.2 Greenhouse Gas Reporting

The Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015 requires public bodies to report annually on their greenhouse gas emissions. Moray Council submitted its first such report to the Scottish Government in November 2016, covering the period 2015/16, and has subsequently submitted annual reports each November.

Activities which release emissions are classified into three groups known as 'scopes'. These are defined in the Greenhouse Gas (GHG) Protocol, and for the Moray Council they can be described as:

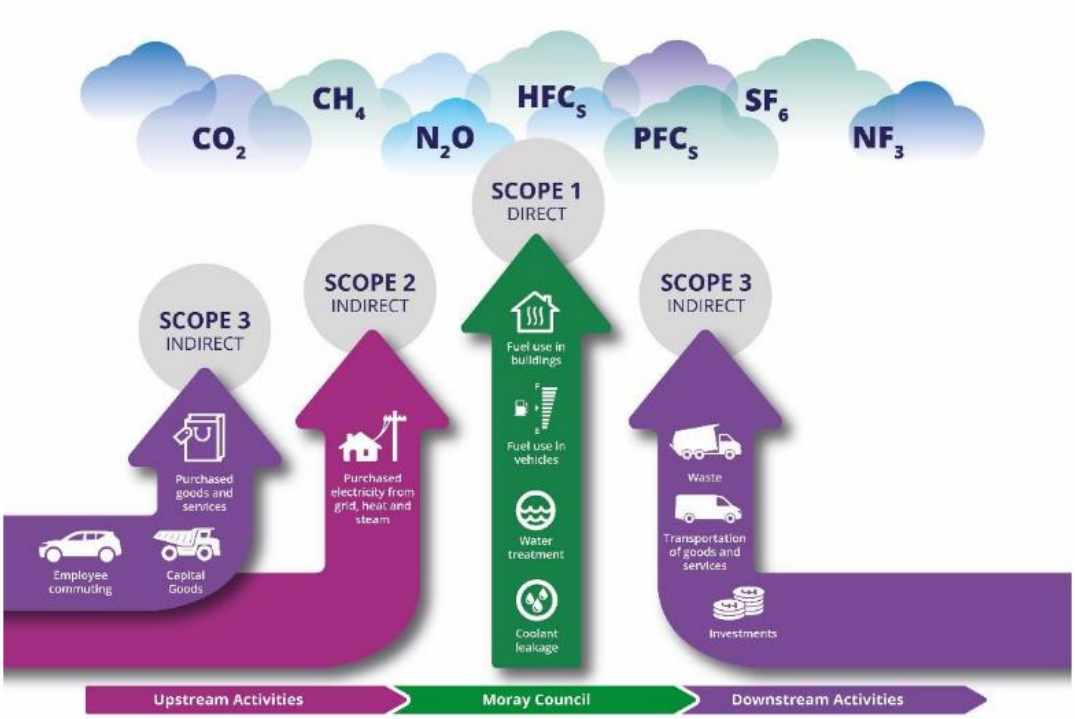
Scope 1 – direct – Emissions that occur directly from sites or assets owned or controlled by the council (e.g. gas boilers within buildings, fleet vehicles). The council has more control over these emissions.

Scope 2 – indirect – Emissions from purchased electricity, heat or steam used by the council. The council has control over the use of this energy but the emissions generated from its production are created elsewhere.

Scope 3 – indirect other – Emissions that occur due to the council's activities / products / services, but at assets not owned or controlled by the council (e.g. commuting, travel for work in employee-owned vehicles or public transport, purchased goods and services).

Figure 2 illustrates the key sources of carbon emissions from council activities and identifies their associated scope. Scope 3 emissions are typically more complex and fragmented to account for, and the required data often lies with other organisations. As a result, there is a higher degree of estimation for scope 3 categories.

[4] https://www.gov.scot/publications/environment-strategy-scotland-vision-outcomes/



Category	Reporting Requirements	Example of Emissions Source
Scope 1: Direct emissions from Moray Council	All scope 1 emissions **must** be reported.	Fuel use in buildings Fuel use in vehicles Water treatment processes Leaks of refrigerant from cooling systems
Scope 2: Indirect emissions from Moray Council's energy use	All scope 2 emissions **must** be reported	Purchased electricity from grid, heat and steam
Scope 3: Indirect emissions from the activities of Moray Council	All relevant and significant areas of Moray Council's indirect emissions **should** be reported.	Upstream emissions for example: • Purchased goods and services • Capital Goods • Employee commuting (and home working) Downstream emissions, for example: • Waste • Transportation of goods and services • Investments
Out of Scope	**Not** included in the reporting	CO_2 emissions attributed to the burning of biomass and other biofuel
Land Use & Land Use Change	Land use emissions are very important and land will play a key role in the transition to net zero. Moray Council is not currently required to report these but, where appropriate, land-based emissions **should** be considered and reporting carried out.	

Figure 2. Scope classification of carbon emissions from council activities.

Section 2: Methodology

2.1 Approach

The targets that are set should be ambitious and achievable. They should provide a realistic but agile pathway towards the aim of net zero carbon emissions by 2030. The targets should be measurable, and recording mechanisms will be improved over time. The targets will include direct and indirect emissions, and estimate how these may change in the future. Where there is uncertainty, a high-level assumption will be stated to make assumptions clear and avoid understating the climate impact of the council.

As set out in *Public Sector Leadership on the Global Climate Emergency*, pathways for achieving absolute zero direct emissions, and for reducing indirect emissions, should be part of an organisations' wider net zero target which must:

- be clear on what is included in the scope of the emissions for the organisation;
- cover all of the organisations' Scope 1 and 2 emissions and should cover appropriate areas of Scope 3;
- have interim reduction targets at set periods that align to the Scottish Government interim targets; and
- the use of natural sequestration or carbon offsetting to achieve net zero targets should be mapped out, and the 'residual emissions' that will be sequestered should be estimated as part of net zero planning. Residual emissions must be as small as possible.

As shown in Figure 3, a carbon management hierarchy approach will be followed to prioritise targets and necessary actions.

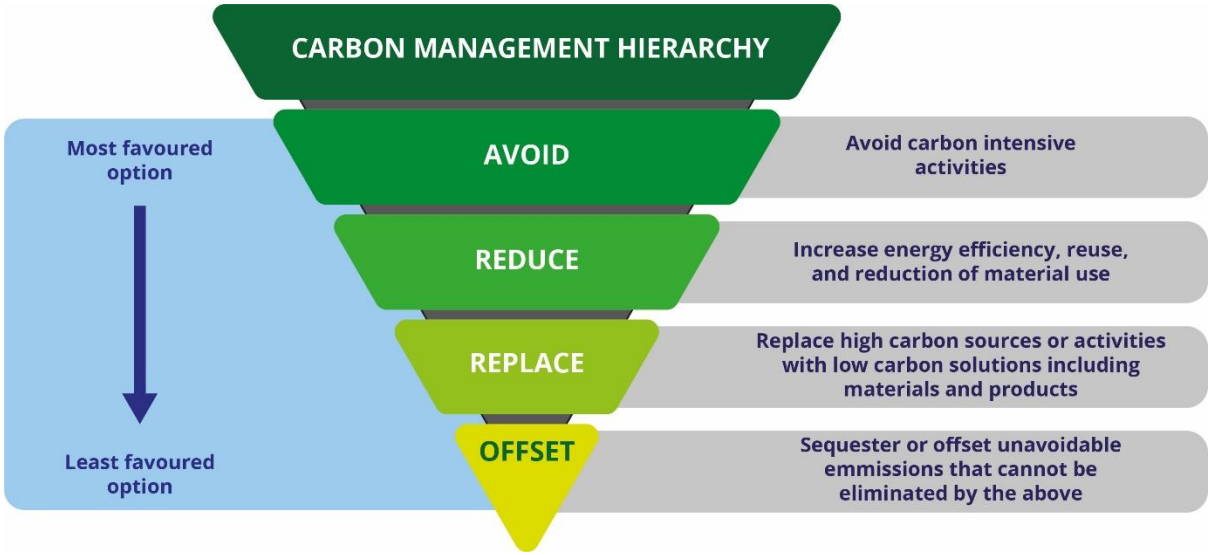


Figure 3. Our carbon management hierarchy.

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 re-design. Replacement of emissions is required where further reductions cannot be achieved, through the substitution of technologies or supplier and supply renegotiation. Offsetting 'unavoidable' emissions through compensatory schemes should be considered as a last resort in target setting. Offsetting large amounts 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 allow home working and avoid commuting.
- **REDUCE:** Reduce energy use in buildings through smart timing solutions.
- **REPLACE:** Decarbonisation of our fleet by replacing diesel vehicles with electric alternatives.
- **OFFSET:** Plant an area of woodland to offset unavoidable emissions.

2.2 Baseline

The first step to setting targets is to understand the baseline carbon emissions of the council. Calculating baseline 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 GHG return for financial year 2017/18 is used as a baseline for emissions. This year was chosen as it was the earliest year that had a comprehensive return of the council emissions to the Scottish Government. A breakdown of these emissions is shown in Figure 4.

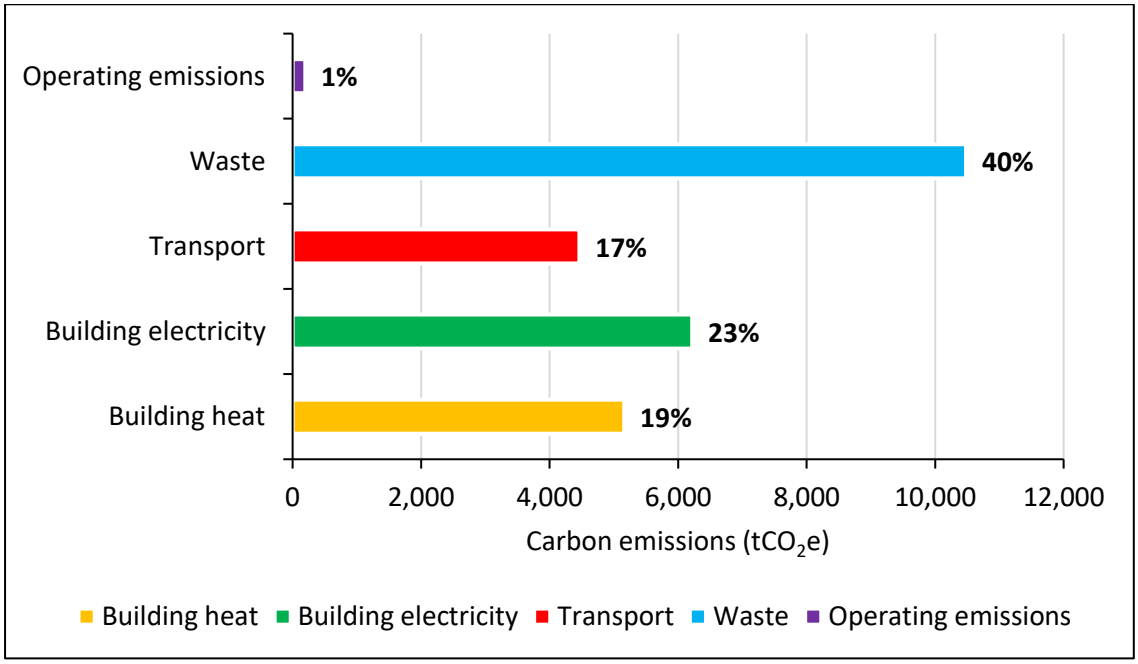


Figure 4. Baseline emissions breakdown.

Figure 4 shows how the emissions can be split into five distinct categories. There are a number of different factors that make up each of the categories and the emissions for each of these are calculated and reported as part of the GHG return. The proportion of emissions from each factor included in the baseline is shown in Table 1.

Table 1. Emissions sources included in Moray Council's baseline carbon emissions.

Category	Emission type	% of all recorded emissions
Building heat	Natural gas	14.8%
	Gas oil	3.7%
	Biomass	0.1%
	Purchased heat and steam	0.1%
Building electricity	Primary schools and nurseries	4.1%
	Secondary schools	4.3%
	Unmetered electricity	6.1%
	Offices	1.9%
	Community facilities	1.3%
	Residential homes and day centres	0.5%
	Sports facilities	0.9%
	Industrial	1.3%
	Other building electricity	2.2%
Transport	Diesel	13.0%
	Petrol	0.1%
	Gas oil	2.8%
	Electric vehicles	0.0%
	Hybrid vehicles	0.0%
	Marine fuel oil	0.2%
Waste	Landfill gas	0.0%
	Municipal refuse to landfill	33.1%
	Commercial, industrial and clinical waste to landfill	7.4%
	Recycling and composting	1.4%
Operational Emissions	Outdoor spaces	0.3%
	Water supply and treatment	0.5%

There are a number of issues to be aware of this baseline:

- As the data is from prior to the Covid-19 pandemic, operational emissions were minimal as most staff worked from an office base and emissions from commuting were not being recorded.
- Waste emissions are the largest single emission source. The council has a statutory duty to collect waste and recycling across Moray. Although Moray has one of the highest recycling rates in Scotland, there is more to do to encourage reduction and reuse of waste.
- Emissions from buildings, split by heat and electricity, are a significant source of carbon. The energy mix used to heat our buildings is currently dominated by fossil fuels.

2.2 Current Carbon Emissions

Since early 2020, the Covid-19 pandemic has had a significant impact on the way the council delivers services for the people of Moray. Because of the working from home directive, offices have been used less and commuting is reduced while services have been maintained. Figure 5 shows a breakdown of the most recent GHG return, recorded during Covid-19 restrictions, and compares these to the baseline.

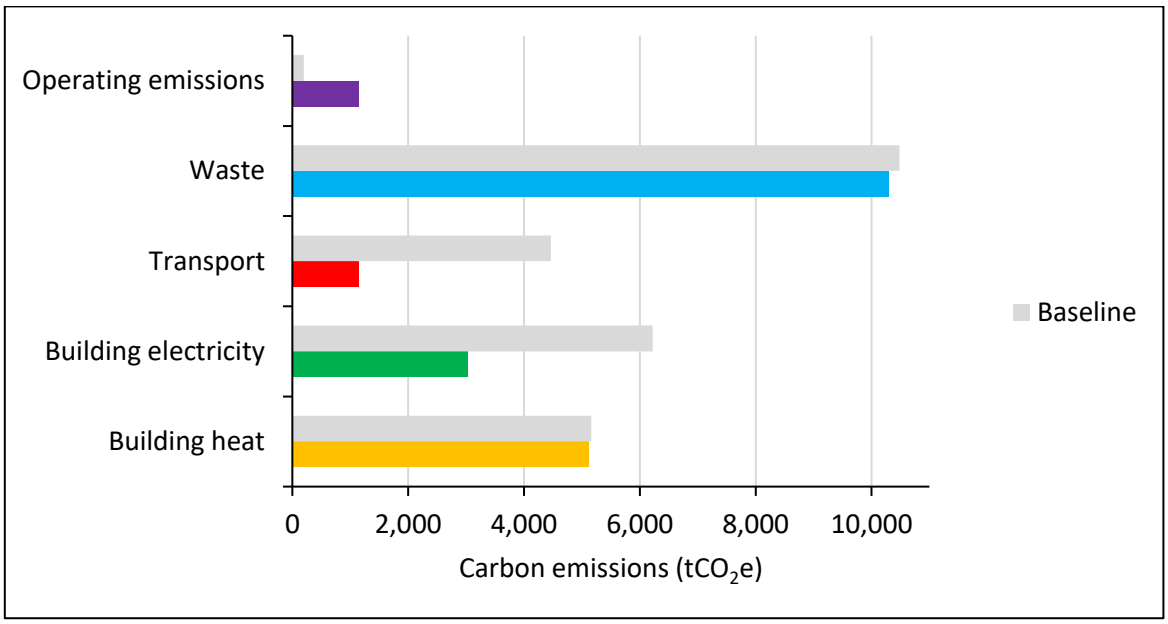


Figure 5. 2020/21 carbon emissions breakdown.

The 2020/21 GHG return reported carbon emissions of 22,475 tCO_2e – a reduction of 17% from the previous year.

This reduction occurred partially through increased recycling across waste streams from 1999/2020, and a resultant decrease in landfill emissions which saved 3,618.2 tCO_2e. A further 1,969.5 tCO_2e was saved by a reduction in energy, water and fuel consumption caused by pandemic-related service changes and ongoing national grid decarbonisation. Building electricity emissions decrease year-on-year which is largely due to the ongoing decarbonisation of national grid energy. This decarbonisation is projected to continue until 2045. Ongoing energy efficiency projects, such as the introduction of LED lighting also contribute to this annual decrease.

Currently local authorities must report scope 1 and scope 2 emissions in their annual GHG return. Some scope 3 emissions must be estimated and reported on, however most scope 3 emissions do not have to be estimated and reported. It is expected that many of these scope 3 emissions will have to be reported in coming years. 2020/21 was the first year that estimates of emissions from homeworking were reported as operational emissions. There is now a responsibility to account for these emissions within the annual compliance reports.

By November 2022, public bodies will be required to report their target date for achieving zero direct emissions of greenhouse gases, and, where applicable, their targets for reducing indirect emissions of greenhouse gases. In addition, over the next 3 years it is intended to incorporate estimates of emissions from travel, social housing, purchasing and investments into the council's reporting footprint when availability and consistency of information permits. This is shown in Table 2.

Table 2. When additional scope 3 Emissions will be included in Moray Council GHG returns.

Target for Inclusion	Scope 3 Emissions
2021/22	Travel & Commuting
2022/23	Social housing emissions
2023/24	High carbon impact capital projects
2023/24	Investments including pensions

When calculating scope 3 emissions there is less certainty on these estimates than for direct emissions. Guidance for how to include these emissions is evolving, and a decision will have to be made by 2025/26 on whether these emissions need to be included in calculations to determine the council's journey to net zero.

Section 3: Pathways to Net Zero

A net-zero route map provides options for the strategic decarbonisation of an organisation over a set timescale. This route map for Moray Council has been developed by considering three possible futures for the organisation in the form of pathways towards net-zero emissions that involve different combinations of decarbonisation interventions. This will enable Moray Council to engage strategically with Scottish Government and other partners on our net-zero journey as all the options will involve partnership working on actions and funding priorities.

The pathways being considered are:

- **Current pathway** - a realistic timescale built around the expected work programme of the council as set out in the route map. This includes projects which have not yet sourced external funding, but set at a realistic, if challenging, timescale
- **Aspirational pathway** – The quickest possible timescale to get works done to meet a net zero target. Here it is assumed that finances are not a barrier but timing should take into account any technical issues that would stop the work being done over a shorter timescale. This will reduce the amount of offset required.
- **Restricted pathway** – a slower timescale than the current pathway where, for whatever reason, additional resources are not prioritised for climate change. This would have the consequence of potentially missing the 2030 deadline and requiring substantially more resources invested in carbon offsetting and in carbon reductions post 2030.

Assumptions within the pathways include:

Current Pathway	Aspirational Pathway	Restricted Pathway
All buildings converted to low carbon heating by 2038 with effort to complete as much as possible by 2030	Nearly all buildings converted to low carbon heating by 2030 with hard to convert buildings worked on post 2030	All buildings converted to low carbon heating by 2038
75% of fleet vehicles transferred to ultra low emissions vehicles by 2030	100% of fleet vehicles transferred to ultra low emissions vehicles by 2030	Less than 75% of fleet vehicles transferred to ultra low emissions vehicles by 2030
Realistic level of offset required based on residual emissions	Minimal offset required	Maximum offset required

It is expected that, depending on external finances, the final pathway could be a combination of aspects of all three pathways. There are technological, practical, and financial limitations that are the same for each pathway and cannot be ignored. These limitations include:

Table 3. Limitations to actions to reduce carbon emissions.

Category	Limiting Factors
Buildings	Financial costs of constructing energy efficient buildings are likely to be 10% more than standard buildings, although this should decline as low energy technology is mainstreamed. There are practical limitations to the speed of decarbonising council building stock: • Reviews of the building stock and suitability of different heating solutions for each building have to be carried out before budgets can be decided. • The heating solutions for some properties (e.g. hydrogen) have not reached market yet and the infrastructure to supply the energy does not exist. • Any works in schools have to be timed to avoid disruption to pupils
Transport	Production restrictions and costs will influence when it is practical for different types of vehicles to transition to low carbon alternatives: • Production of electric cars is almost unrestricted, but cost about 75% more • Production levels of electric light vans almost meets demand, but cost increase would be similar to cars • The availability, technology or range of large and medium vans are limited and below marked demand. The purchase costs are more than double that of Fossil fuel vehicles. • HGV's are only available in limited numbers with restricted factory build and cost is 3 times that of fossil fuel vehicles • Technology for heavy plant is probably only going to be technologically practical toward 2030 and may use different tech such as hydrogen fuel cells as may trucks Infrastructure and training is needed to make a move to low carbon alternatives a success: • Improvements needed to charging infrastructure • Depot review completed and assets improved • Training schemes for technicians and mechanics
Waste	The council has contractual conditions associated with the NESS Energy from Waste plant.
Operating Emissions	Changes to ways of working post Covid will take time to bed in before any rationalisation of building space can proceed. Departmental joined up working and thinking required to ensure climate change is a priority and service change is agreed timeously.
Procurement	Calculating emissions is complicated and an estimate. Purchasing low carbon alternatives are likely to be more expensive in the short term. Many local markets and service providers are not yet in a position to offer low carbon alternatives. Procurement has to take account of a balance of sustainability, community wealth building and financial elements.

Offsetting	Area of land available to plant trees is limited and the cost of land for offsetting is increasing yet offsetting is last in the hierarchy. Scientific validation of calculations on carbon sequestering will be required. Principles around the council offsetting have to be developed, e.g. It should be local, and it should have co-benefits such as amenity or job creation.
External Influence	Calculating emissions is complicated and an estimate. Opportunities to change these are limited because the council only has influence, not control, over these. Therefore encouraging behavioural change, rather than enabling direct changes, may be required.

3.1 Current Pathway

Our current pathway is a projection towards 2030 using our baseline and other known emissions. It shows how emissions may change over this time period when we consider our pre-planned actions. Only activities which are highly likely are accounted for within this projection.

The current pathway aims to find a compromise between speed, technological limitations and funding. While recognising there are likely to be budgetary restrictions, this pathway seeks to avoid 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 manufacturing drives down costs. This could also allow planned solutions to align with national infrastructure investment. For example, vehicles could continue to transition to using batteries, or hydrogen could become more dominant if electricity distribution networks are unable to cope with the electrification of both heat and transport. Building requirements could also change if, as expected, flexible or home working continues post Covid, supported by technology advances.

For the current pathway, a timeline of actions with milestones and additional resources that are required is shown in Table 4. Further details of the actions are included in Section 4.

Table 4. Timeline of current actions and milestones.

Date	Major Milestones	Additional Resources
2022-23	Publish hydrogen, fleet, and building decarbonisation strategies.	N/A
2022-23	Advance hydrogen strategy.	TBD
2022-23	Waste diverted from landfill to energy from waste plant.	N/A
2022-23	Commission research on carbon sequestration of council land holdings, along with opportunities to expand and manage land holdings to maximise these	TBD
2023-24	Complete office, depot and stores reviews to holistically consider rationalisation and climate change issues.	N/A
2023-24	Complete development of indicative Carbon Offsetting Plan.	N/A
2023-24	Complete school buildings condition and suitability review. Plans developed to achieve category B or higher in all schools.	N/A
2023-24	Ensure management of council land holdings is planned to maximise carbon sequestration.	TBD
2024-25	Complete Learning Estate Asset Management plan to identify opportunities for heating and power refurbishment to provide renewable alternative options for buildings, implemented over the next 10 years.	N/A

2025	All social housing to meet EPC Band C or higher by 2025.	Funded through an agreed Housing Business Plan. Investment and rental increases may be required
2025-26	New school in Findrassie operational – designed to meet energy efficiency targets set by the Scottish Government as part of the Learning Estate Programme investment programme	Energy reduction measures may cost 10% of budget to build school
2025-26	More accurate figures on residual emissions will be known and council can reassess commitment to 2030 date.	
2025-26	Start carbon offset project for estimated emissions between 2030 and 2045 in light of target after review.	Funding required.
2026-27	20% of fleet vehicles transferred to Ultra Low Emissions Vehicles (ULEV).	Target dependent on price, availability of vehicles and charging infrastructure
2029-30	New or refurbished Buckie High School designed with an energy saving methodology including options for renewable energy solutions. Potential Learning Estate Investment Programme project. Timescales for the project may be dependent on receiving SG LEIP funding (outcome based revenue funding linked to energy efficiency targets)	Energy reduction measures may cost 10% of budget to build or refurbish school
2030-31	New or refurbished Forres Academy designed with an energy saving methodology including options for renewable energy solutions. Potential Learning Estate Investment Programme project. Timescales for the project may be dependent on receiving SG LEIP funding (outcome based revenue funding linked to energy efficiency targets)	Energy reduction measures may cost 10% of budget to build or refurbish school
2030-31	75% of fleet vehicles transferred to Ultra Low Emissions Vehicles (ULEV).	Target dependent on price, availability of vehicles and charging infrastructure
2030-31	Assuming target remains at 2030, Carbon offset covers remaining emissions and Moray Council is carbon neutral.	
2032	All social housing improved to meet EPC Band B or higher by 2032.	Further investment in property and rental increases may be required
2035	Majority of school buildings improved (to include energy saving measures alongside other capital improvements).	
2038	All school buildings improved (to include energy saving measures alongside other capital improvements)	
2038	Scottish Government target of all public buildings to have decarbonised heating systems.	

The estimated annual emissions for the current pathway are included in Figure 6 and figure 7. The annual emissions are divided into seven categories and an indicative estimate of the level of carbon offset via council managed woodland. Details of these categories are provided in Table 5.

Table 5. Explanation of emissions pathway charts.

Category		Description
	Pipeline Projects Forecast	An estimate of the emissions embodied in capital works which the council is committed to. This include developments such as the Moray Growth Deal. These are not currently recorded in the GHG report.
	Additional Emissions Estimate	An estimate of the additional scope 3 emissions that are not currently recorded in the GHG report. These are emissions that the council does not control but can influence. These include estimates for commuting and procurement.
	Operating Emissions	The carbon emissions created by the council carrying out its day-to-day work. These consist of emissions that the council can control, and emissions that it can influence. These are recorded in the GHG report and include estimates for home working.
	Waste	The carbon emissions from disposing of municipal and industrial-level waste. These are recorded in the GHG report.
	Transport	The carbon emissions from the council fleet vehicles and marine fuel. These are recorded in the GHG report.
	Building Heat	The carbon emissions from heating council buildings. These are recorded in the GHG report.
	Building Electricity	The carbon emissions from electricity used in council buildings including schools and offices. These are recorded in the GHG report.
	Offsetting	An indicative estimate of the level of current annual offset

The calculations for the current pathway account for the following:

- **Internal factors:** Known internal changes that will impact on our emissions, e.g. confirmed school rebuilding programme.
- **External factors:** Known external changes that will impact on our emissions, e.g. ongoing decarbonisation of the National Grid.
- **Confirmed projects:** Projects signed-off or close to sign-off which will impact on our emissions, e.g. the Moray Growth Deal.
- **Population change:** Annual changes in population, based on the 2018 Scottish Sub-National Population Projections for Moray, which may impact waste volumes.

Figure 6 shows that the emissions currently recorded (direct emissions from buildings, transport and waste) will reduce over time and get to a level where a carbon sequestration scheme could be used to offset any remaining emissions. The factor that is not reducing in line with others is building heat. Firm plans to decarbonise buildings are not yet in place so it is difficult to accurately forecast any rate of decrease at this time.

However, Figure 7 estimates what will happen if the council must start including aspects such as scope 3 emissions for its day-to-day operations (e.g. commuting, investments), and create assumptions for the level of embodied carbon in capital projects. These are shown within Figure 7 as '*additional emissions estimate*'. The inclusion of additional scope 3 emissions are covered in Table 2 in Section 2.2.

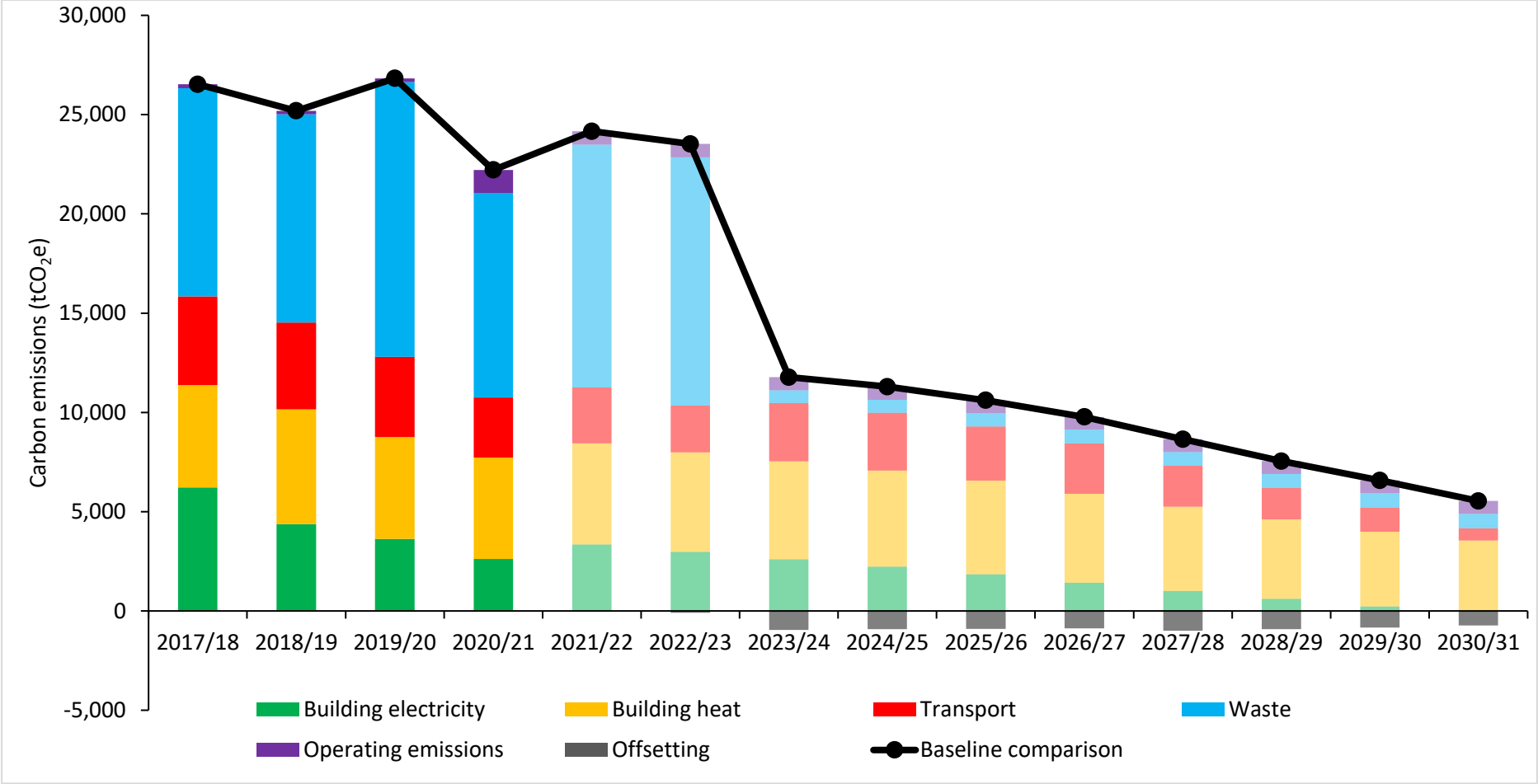


Figure 6. Current pathway to 2030 showing reported emissions.

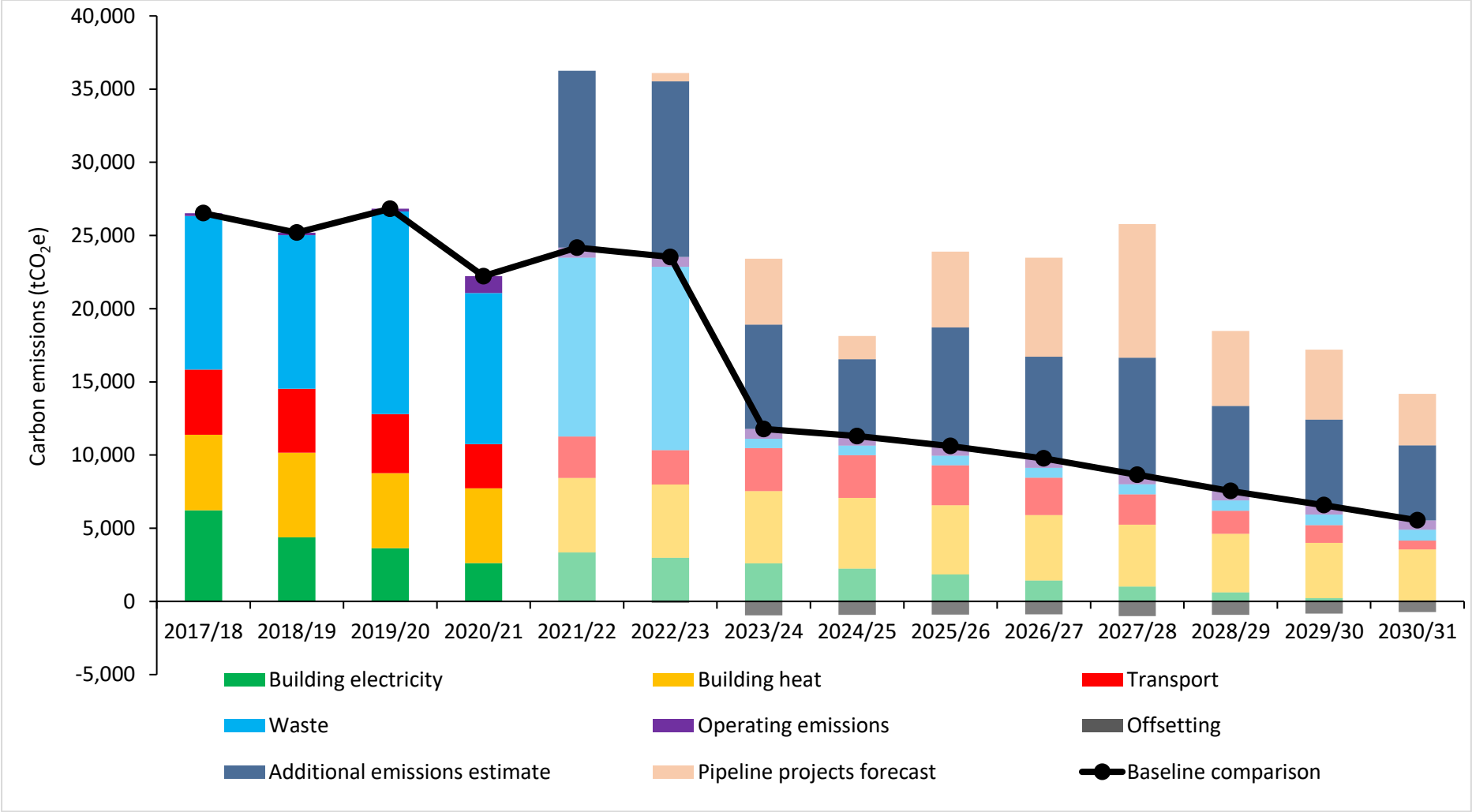


Figure 7. Current pathway to 2030 showing reported and estimated scope 3 emissions.

Concerns about current pathway

Given the current stage of plan development, it is difficult to be confident there will be sufficient progress in the decarbonisation of the council building stock to ensure the net zero targets are met without excessive offset. The current condition of some of the buildings is unknown. Therefore, the works required to bring them to net zero is uncertain.

To meet this pathway, 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. For example, the council could consider EnerPHit standard retrofits[5] (currently being piloted in Edinburgh) to inform the approach and contribution that the operational estate will make to meet the net zero target.

The council is currently progressing a programme of work to rationalise and transition its public building stock to carbon neutral. This will enable the production of accurate estimates of financial costs and emissions reductions which will assist future planning.

The council's office, depots, and store reviews must be completed promptly to give direction on which buildings to improve and which to rationalise. A completion timescale of 2023-24 is necessary to allow subsequent actions to progress at a pace which assist the council to reach net zero by 2030. More efficient use of workspaces and technology could lead to a reduction in single use accommodation and an increase in the number of co-located partnership facilities.

The difficulties and expense of converting buildings to reach net zero emissions means that if delays are experienced then emissions relating to buildings may not reduce sufficiently by 2030. Therefore, greater emphasis on other parts of the council reaching net zero quicker (the aspirational pathway), and increased carbon offsetting, may have to be explored if the pace of change is insufficient.

Regulation on what emissions must be reported are updated annually and it is not known which emissions will be mandated to be reported and therefore offset by 2030. If this includes scope 3 emissions (such as materials from suppliers) then the total carbon footprint of the council might still be large. It could be assumed that the carbon footprint of such emissions would reduce in line with the council's pathway as businesses and suppliers also work to reduce their carbon impact. However, it is prudent to assume that some scope 3 emissions that are easier to calculate, such as commuting, should be reported when practical. This is covered in Section 2.2.

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 through inset/offset. 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 offset.

Inset/offset required

Public bodies are required to do all they can to reduce their emissions as much as possible, and absolute carbon reduction must be achieved. Achieving net zero requires demonstration that any direct emissions being offset are unavoidable, and all direct emissions that can be reduced to absolute zero have been. Where residual emissions remain, the council will need to invest in carbon insets/offsets to meet net zero, adapt to a changing climate and enhance the state of nature.

[5] https://www.homebuilding.co.uk/advice/enerphit
https://www.theplanner.co.uk/news/scottish-government-announces-net-zero-pathfinder-projects

- Insets are activities within the council's operational boundary, such as enhancing the carbon sequestration of their own land holdings, or by agreement, on public land.
- Offsets are externally verified and purchased/sold on a market.

Public bodies should also consider if the purchase of offsets is the best use of public funds. If the council owns land that is suitable for investment to improve carbon sequestration rates, then in house natural sequestration projects should be developed. The council can then use the sequestration achieved to net off any residual emissions, or potentially use land to support Scotland's wider decarbonisation goals.

Nature-based solutions to climate change can provide many co-benefits, from mitigation and adaption benefits to biodiversity and enhancement – thereby addressing aspects of the dual crises of climate and biodiversity that the world is facing.

The accounting for offsetting/insetting is likely to evolve over the coming years and as more international and national guidance is developed. Any public body that is developing natural sequestration projects on their land should keep the Scottish Government informed.[6]

A series of rough carbon sequestration estimates have been made. These are desk exercises which indicate the likely amounts of tree planting and land needed and will be refined as more information is gathered. At current estimates, for the council to reach net-zero by 2030 there will be a requirement to sequester an additional estimated future emissions of between 38,000 tCO_2e and 194,000 tCO_2e. The range of estimates is so large due to the uncertainties around buildings, indirect emissions, and possible changes in offsetting regulations. The council is currently responsible for 210 hectares of community/amenity woodland. At a best case scenario, the council may have to almost double the current area of woodland that it currently manages.

Table 6. Offset for current pathway

Pathway	Existing insetting potential (tCO2e)	Min extra offset required (tCO2e)	Max extra offset required (tCO2e)	Min land required (hectares)	Max land required (hectares)
Current	21,600	38,255	193,740	182	923

Summary

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

Benefits	Threats
• This reflects the path the council is currently on. It does not commit the council to altering the timing of planned expenditure. • Statutory deadlines are met.	• Offsetting will be required to reach net zero by 2030 as decarbonisation of estate and fleet may not be complete. • Uncertainty around timescale for building improvement relating to carbon emissions. • Many of the current commitments to reduce carbon emissions are currently unfunded.

[6] https://www.gov.scot/publications/public-sector-leadership-global-climate-emergency/

3.2 Aspirational Pathway

The aspirational pathway details the most rapid route towards achieving net zero carbon emissions by 2030. It shows how emissions may change over this time period when we consider all possible options with no financial barriers. This option reduces the level of carbon offsetting required.

The premise of the aspirational pathway model is that the council is supported by the Scottish and UK Government to prioritise the reduction of carbon emissions ahead of cost implications, primarily through investing in building stock to meet net zero targets. The model assumes that budget could be secured to allow rapid investment in measures which reduce carbon emissions. This proactive approach could avoid a situation where the council finds itself approaching the statutory deadlines and is having to pay a premium for low-carbon solutions because demand exceeds supply. This situation could be exacerbated by a late rush to adapt by the private sector, facing punitive legislation, which ultimately could lead to the council missing its deadlines.

However, this early prioritisation of low and zero-carbon infrastructure, procurement and operations is likely to have negative early cost implications. Early adoption of low and zero-emission practices could lead to efficiency savings however, it is likely that more will be paid as a result of early adoption of these solutions before market forces drive down costs. There is also a risk that the council could invest in solutions which are made redundant by later technological developments.

Technical issues will set a pace of change that cannot be overcome through spending more. For example, the current state of the global vehicle and plant market means there are serious lead time issues in purchasing vehicles which cannot be overcome.

The aspirational pathway accounts for the following:

- **Internal factors:** Known internal changes that will impact on our emissions, e.g. confirmed school rebuilding programme.
- **External factors:** Known external changes that will impact on our emissions, e.g. ongoing decarbonisation of the National Grid.
- **Confirmed projects:** Projects signed-off or close to sign-off which will impact on our emissions, e.g. the Moray Growth Deal.
- **Potential projects/actions:** Projects and actions currently at inception stage which will impact on our emissions, e.g. Hydrogen Feasibility Study.
- **Population change:** Annual changes in population, based on the 2018 Scottish Sub-National Population Projections for Moray, which may impact waste volumes.

The estimated annual emissions for the aspirational pathway are shown in Figure 8. This assumes that considerable additional projects to decarbonise council buildings have been completed before 2030 as per the assumptions in the decarbonisation strategy. The forecast emissions for this work occur prior to the 2030 deadline, so the embodied emissions for any construction work will not require offset post 2030.

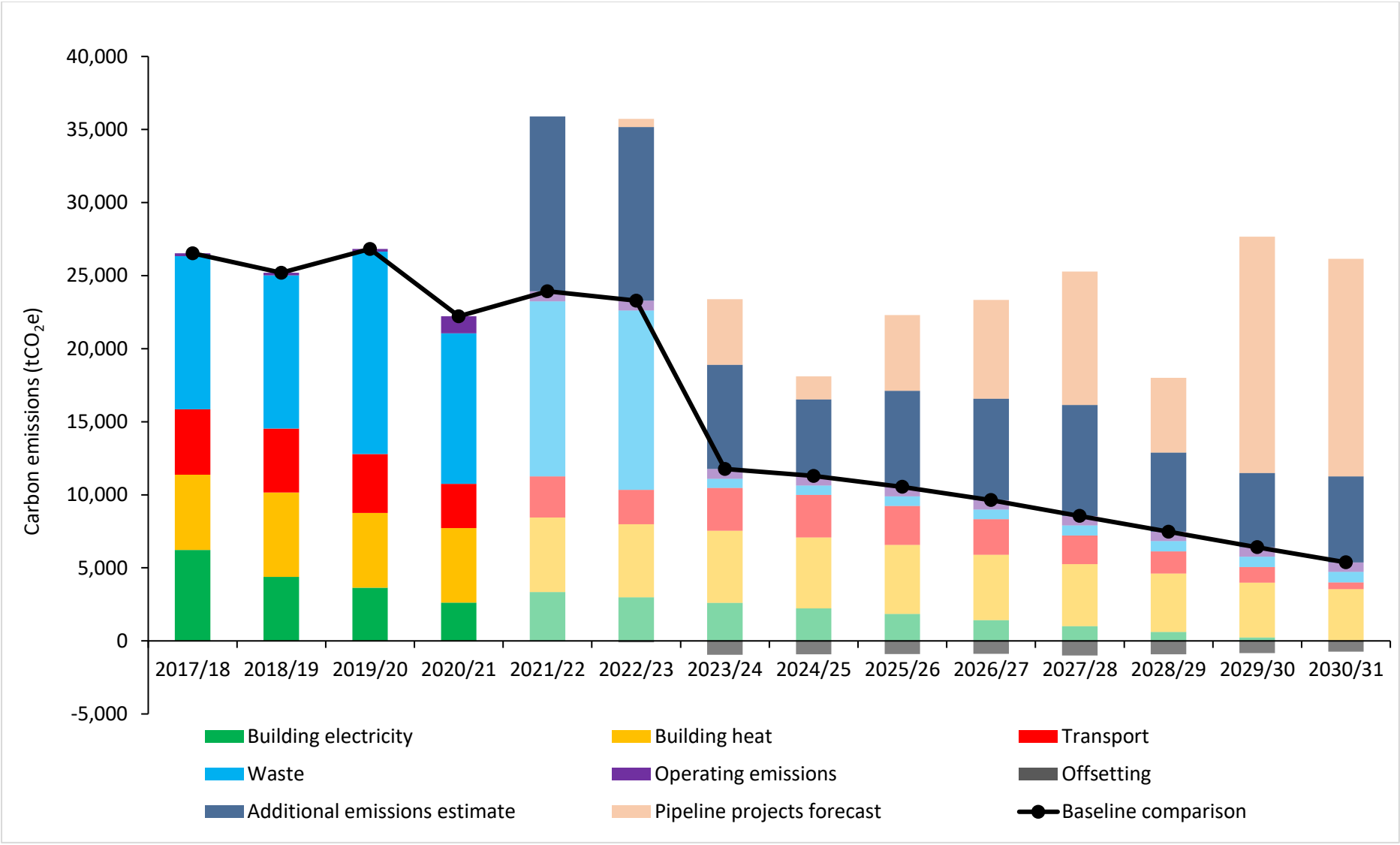


Figure 8. Aspirational Pathway to 2030.

Inset/offset required

Reaching net zero will mean that any residual emissions that cannot be reduced further will have to be sequestered. The aspirational pathway means that many of the capital projects needed to reach net zero occurred before 2030 and so the emissions for these projects are not being offset after 2030. Under this aspirational pathway, for the council to reach net-zero by 2030 there will be a requirement to sequester additional estimated future emissions of between 3,000 tCO2e and 15,000 tCO2e.

Table 7. Offset for aspirational pathway

Pathway	Existing insetting potential (tCO2e)	Min extra offset required (tCO2e)	Max extra offset required (tCO2e)	Min land required (hectares)	Max land required (hectares)
Aspirational	21,600	3,038	15,382	15	76

Summary

In summary, the benefits and threats of the aspirational pathway are:

Benefits	Threats
• Achieves our net zero carbon emissions by 2030 target and all current statutory deadlines. • Reduced need for carbon offsetting and associated costs. • Potential revenue generating opportunities through the development of commercial carbon offsetting schemes.	• Requires substantial additional investment which has not been budgeted for in a short period of time. • Practical issues of decarbonising fleet and buildings at that pace even if finances were available means this pathway when viewed as a whole is impractical.

3.3 Restricted Pathway

The restricted pathway details the extent of carbon emissions up to 2030 if resources are not prioritised for climate change. This would have the consequence of potentially missing the 2030 deadline and requiring substantially more resources invested in carbon offsetting.

The premise of the restricted pathway model is that the council could find itself in a position where available resources and budget are constrained, and therefore it is not possible to fund the changes to capital projects and revenue systems changes. More frequent extreme weather events caused by climate change will place significant pressures on budgets and could be exacerbated by a prolonged and complicated global recovery from Covid-19. This model therefore assumes limited changes and a delayed timeframe for them being implemented.

While a slow rate of implementation is not ideal, a potential advantage of this is that legislation, improved manufacturing efficiencies and technological advances could reduce the cost and risks associated with these changes. This could maximise the positive impact of constrained budgets and avoid investment in solutions which are found to be ineffective or are surpassed by technology advancements.

The expectation that solution costs will reduce over time has been seen in low-carbon solutions such as LED lightbulbs and photovoltaics, however there can be exceptions to this. It is possible that energy and technology costs could increase due to the requirement for both to be decarbonised and the investment needed to achieve this. The cost of electricity has risen over the last decade and it is likely that this will continue.

The pathway accounts for the following:

- **Internal factors:** Known internal changes that will impact on our emissions, e.g. confirmed school rebuilding programme.
- **External factors:** Known external changes that will impact on our emissions, e.g. ongoing decarbonisation of the National Grid.
- **Confirmed projects:** Projects signed-off or close to sign-off which will impact on our emissions, e.g. the Moray Growth Deal.
- **Possible projects:** Projects currently at inception stage which will impact on our emissions, e.g. Hydrogen Feasibility Study.
- **Population change:** Annual changes in population, based on the 2018 Scottish Sub-National Population Projections for Moray, which may impact waste volumes.

The estimated annual emissions for the restricted pathway are shown in Figure 9. This shows a much higher level of direct emissions at 2030. To be carbon neutral a much higher level of offsetting is required. In addition, because of the decision to delay major building and fleet improvements to after 2030 assumed in this pathway, the embedded emissions for these capital projects will also have to be incorporated into the offsetting programme.

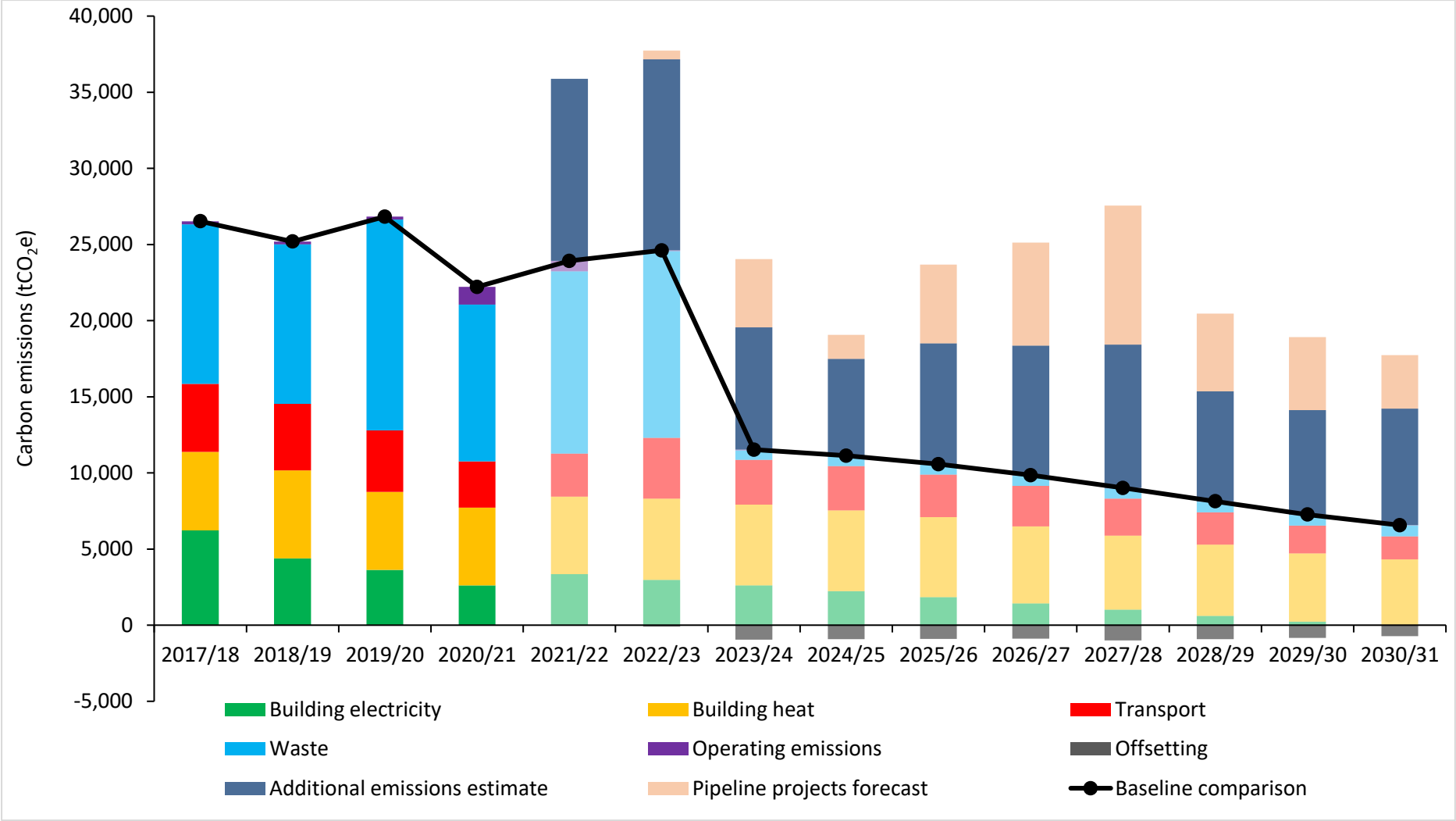


Figure 9. Restricted Pathway to 2030.

Inset/offset required

Reaching net zero will mean that any residual emissions that cannot be reduced further will have to be sequestered. Under this restricted pathway, for the council to reach net-zero by 2030 there will be a requirement to sequester additional estimated future emissions of between 64,000 tCO2e and 230,000 tCO2e.

Table 8. Offset for Restricted Pathway

Pathway	Existing insetting potential (tCO2e)	Min extra offset required (tCO2e)	Max extra offset required (tCO2e)	Min land required (hectares)	Max land required (hectares)
Restricted	21,600	64,092	229,830	305	1,094

Summary

In summary, the benefits and threats of the restricted pathway are:

Benefits	Threats
• Statutory deadlines are met.	• Net zero by 2030 target is only met with substantial levels of offset. • Such a level of offset will be expensive. • Missed opportunity to generate revenue from emerging commercial carbon offsetting market. • Uncertainty if delaying improvements will cost more or save money.

3.4 Comparing Residual Emissions of the Three Pathways

As shown in Figure 10, the difference between the estimated minimum and maximum offset required is very large for both the current and aspirational pathways.

In the current pathway this difference is due to uncertainty around timing of improvements to building stock. If most of the improvements are completed prior to 2030, it is expected that the actual offset required would be towards the minimum end of this scale.

In the restricted pathway this difference is due to uncertainty around scope 3 emissions going forward and how much of the embodied emissions in the improvement projects post 2030 will be included. Further guidance would be expected on this in the future to help narrow this range.

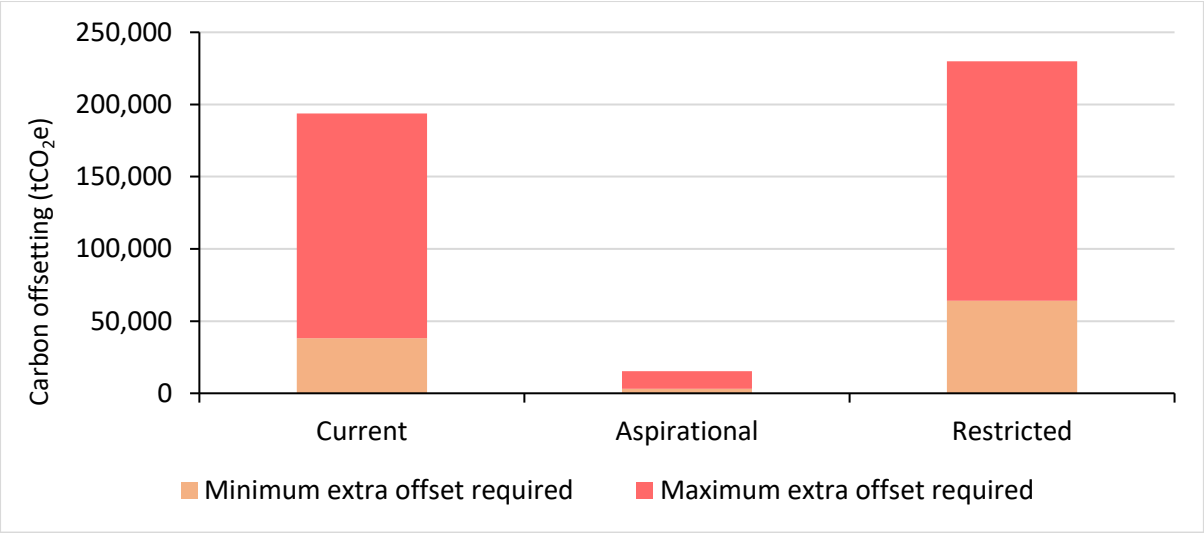


Figure 10. Comparison of Emissions Requiring Offset beyond existing insetting

This uncertainty is reflected in estimated costs to develop and progress an offset programme which would sequester the council's expected emissions from 2030 onwards. Table 9 monetises these estimates to show the difference in the three pathways. The estimates include the cost of acquiring land, preparing land for planting, as well as the planting and maintenance of the trees.

Table 9. Comparison of Cost of Offsetting Emissions

Pathway	Existing insetting potential (tCO2e)	Min extra offset required (tCO2e)	Max extra offset required (tCO2e)	Min land required (hectares)	Max land required (hectares)	Min estimated price (£)	Max estimated price (£)
Current	21,600	38,255	193,740	182	923	£1,360,000	£6,880,000
Aspirational	21,600	3,038	15,382	15	76	£112,000	£567,000
Restricted	21,600	64,092	229,830	305	1,094	£2,270,000	£8,160,000

A relatively high level of sequestration seems unavoidable. However, as explained in section 2.1, the route map to net zero should attempt to reduce the residual emissions to as close to zero as is practical. Sequestration is not a sustainable mechanism to avoid carrying out actions such as decarbonisation of public building as these will have to be changed to non-fossil fuel heating by 2038. Delaying work to reduce carbon emissions will mean substantial additional expenditure on

offsetting as well as requiring more expenditure in a shorter timescale after 2030 to meet legal requirements.

Furthermore, Local Authorities are seen to have a critical role in the period up to 2030 by tackling climate change through implementing national and local climate policy[7]. Public bodies are expected to show leadership by reducing emissions quickly as it is recognised they have significant influence on emissions beyond their organisational boundary. The Climate Change Strategy confirmed the Council's role in this respect.

The expectation is that over the next few years much of the additional public sector funding will be conditional on wider benefits such as the just transition to a net zero economy where reducing the impact on those most affected by the transition from oil and gas is a key principle. Adopting a clear route map to net zero will enable Moray Council to be in a better position to lever in such funding.

[7] Public Sector Leadership on the Global Climate Emergency (Scottish Government 2021)

3.5 Conclusions

It is entirely feasible for Moray Council to achieve net-zero by 2030 if key decisions on building decarbonisation and rationalisation of the estate are taken early, and if progress is made to consistently improve fleet vehicles, reduce waste, improve insulation, heating, and hot water systems over the next eight years. However, considering spend currently anticipated in the 10 Year Capital Plan, securing external funding for measures such as decarbonising council buildings will be essential if the target of 2030 is to be met.

Aligned with this opportunity, a proactive approach as demonstrated by both the aspirational and current pathways could avoid a situation where the council finds itself having to pay a premium for low-carbon solutions in the future because demand exceeds availability. In addition, both the aspirational and current pathways would avoid large amounts of carbon offset which will require financing. However, caution should also be taken as buying carbon solutions too soon may involve a premium for new technology. Hence the need for an agile approach which can flex across planned pathways as the context demands.

The financial implications of being net zero by 2030 in the current pathway will require to be worked up and progressed through the council's financial planning process. From the interim results of the CCS studies, some indicative costs can be summarised as

Buildings

- For the Corporate Estate to reach net zero by 2030, a financial budget of £19.3 million capital is required. This investment is estimated to lead to accrued financial savings of £1.3 million by 2030 with further energy cost savings in future years. Even if this work is delayed, it will have to be completed by 2038 which is the backstop deadline for public buildings to have low carbon heating.

Council Housing - for upgrading 80% of the 6,291 council houses.

- For Council Housing to reach net zero, a financial budget of £61.9 million capital is required. This investment is estimated to lead to accrued financial savings of £2.5 million by 2030.

Fleet Decarbonisation:

- Estimates of the additional finances needed to decarbonise the fleet and provide associated infrastructure are not yet available. These are difficult to estimate due to restrictions in production models of low emission vehicles and some technological solutions are yet to be developed.

To reach net zero by 2030 under the current pathway, the residual emissions for Moray Council can be summarised as:

- An estimate of at least 60,000 tCO_2e from 2030-2045 to be offset.
- A financial budget estimate of at least £1.5 to £2.5 million will be needed for a long term carbon offsetting project to start before 2030. From 2030, an annual estimate of £25,000 recurring revenue for maintenance, tree felling, and conservation will also be required.

Section 4: Actions by Category

1. Buildings

In 2021, the Scottish Government committed to developing a series of phased targets for the decarbonisation of public sector buildings starting in 2024, with all publicly owned buildings to meet zero emission heating requirements by 2038.

Figure 11 shows that in 2020-21 over half of the electricity used in metered buildings was by schools. Emissions from electricity have been reducing annually as the electricity grid is decarbonised.

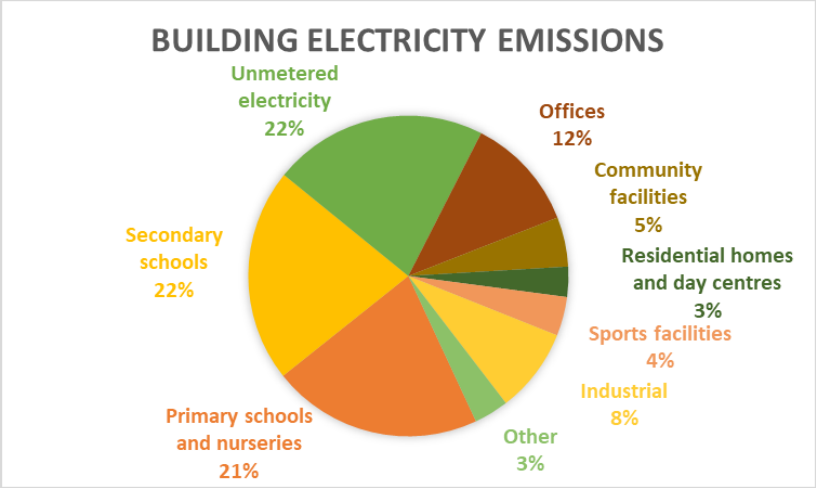


Figure 11 Moray Council Building Electricity Emissions 2020-21 (from SSN submission of 30 Nov 2021)

The emissions from heating Moray Council public buildings are almost twice the amount of the emissions from electricity. However, as Figure 12 shows, 84% of the emissions are from natural gas, which emits 30% less than oil.

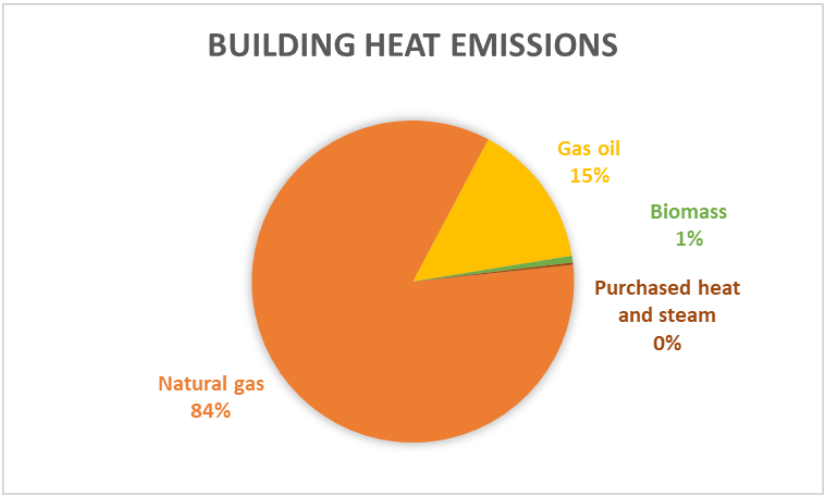


Figure 12 Moray Council Building Heat Emissions 2020-21 (from SSN submission of 30 Nov 2021)

Decarbonise Public Buildings

The council is currently capturing a programme of work to make the council public building stock carbon neutral. However, the difficulties and expense in converting buildings to net zero means that emissions relating to buildings may not reach net zero by 2030. The cost of achieving the target is far in excess of Council budgets so significant external resources are required. Technology development and roll-out is also identified as a critical factor.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
1. Aim to convert all fossil-fuel based building heating systems to low or zero carbon alternatives	Significant external resources required.	TBC	Building SAP Ratings; % of carbon neutral council buildings	Backstop date of 2038 to decarbonise heating systems in public buildings	Property Services
2. Increased renewable energy generation from Council buildings and land. Subject to project appraisal and technical feasibility.	All projects would be subject to business case approval with a defined ROI.	TBC	Capacity (kW) of energy generation installed	Strategy to decarbonise Moray Council Property in progress	Climate Change Team / Property Services / Energy team

Learning Estate Decarbonisation

The school Estate forms 70% of the council public building estate. Therefore, the School Estate Asset Management Plan and scope of works for schools is crucial in advancing the Climate Change Strategy. Climate change work should be aligned with the Management Plan to get the most out of the restricted options of working within schools.

Research to baseline current school building conditions will take up to 2 years to complete. At that point, management plans on how to improve the energy efficiency and decarbonise the heating systems can be progressed alongside other building improvements. Until then it is difficult to estimate the timing and cost of net zero improvements to the school estate. At present no allowance has been made for carbon reduction measures in the capital budget for the learning estate. Energy reduction measures may cost 10% of the budget of refurbishing a building.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
3. Complete Learning Estate Asset Management plan to identify opportunities for 'Heating and Power' refurbishment and implemented over next 10 years.	Significant resources required	TBC	Building SAP Ratings; % of carbon neutral council buildings	Backstop date of 2038 to decarbonise heating systems in public buildings	Programme Manager, Learning Estate

Adoption of Sustainable Standard for New Public Buildings

The Scottish Government have published a sustainable standard for public buildings. The council can make a commitment to adopt this voluntary standard for new public buildings. External resources

may be required to achieve this standard in new buildings. Technology development and roll-out are identified as a critical factor.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
4. Aim to achieve zero carbon standards in all new buildings, including housing and schools	Additional expense over non net-zero building	Dependent on project	% of new buildings that are net zero carbon standard	Ongoing	Property Services

Energy Efficiency Standard for Social Housing

The Scottish Government target is for all social housing to meet EPC Band C or higher by 2025, and EPC Band B or higher by 2032. Substantial investment will be required in insulation and renewable energy systems. Carbon emissions from social housing are beyond the scope of the GHG emissions reporting for the council, however will help to reduce energy consumption, fuel poverty and the emission of greenhouse gases.

Social landlords must develop a Housing Business Plan which will bring in sufficient rental income to fund an improvement programme to deliver the required upgrades. Delivery of EESSH2 in Moray Council stock will be complicated by:

- the extent to which rental increases are acceptable during a cost of living squeeze,
- the capacity of the supply chain and skilled workforce to deliver contracts fast enough
- the built form of Moray's housing stock i.e. more pre-1919, more stone, more rural

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
5. Achieve Energy Efficiency Standard for Social Housing (EESSH) for all Council houses	External resources required to achieve ambition	Currently outwith the scope of the emissions report	% of Council houses achieving EPC Band B (Energy Efficiency rating), or are as energy efficient as practically possible. % of Council houses that are carbon neutral.	EPC Band C or higher by 2025 EPC Band B or higher by 2032	Property Services

Energy Awareness

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
6. Increase building user awareness of ways of reducing energy use and saving utility costs.	Staff time	N/A	No of energy events	Ongoing	Energy team

2 Transport

Emissions from the council fleet are predominantly from diesel. Transport emissions from the council fleet are reported as direct emissions in the annual GHG report. Indirect emissions from corporate travel and commuting are not currently reported, although there are plans to include these soon.

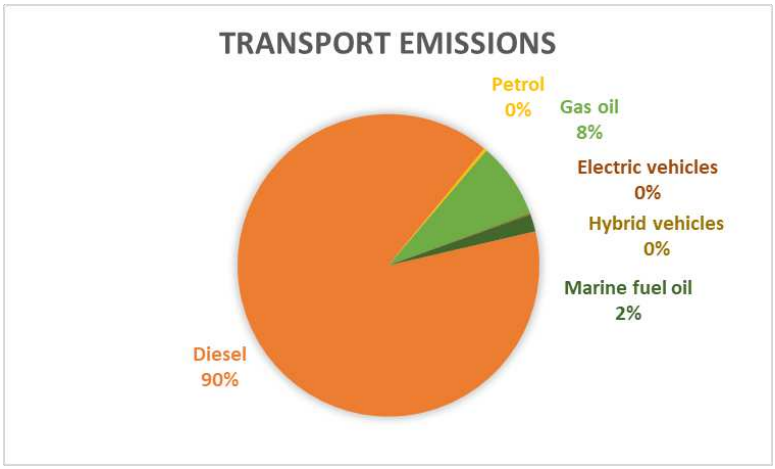


Figure 13 Moray Council Transport Emissions 2020-21 (from SSN submission of 30 Nov 2021)

Moray Council currently operates 28 electric vehicles (up from 11 in 2019). This is out of a fleet of 520 registered vehicles (from cars, to refuse collection vehicles to artic trucks).

Fleet Decarbonisation

A strategy to decarbonise Moray Council fleet vehicles is progressing. HGV vehicles and large plant have a life of 10 years to replacement ordinarily. Our replacement rate needs to gather pace. Timescales (i.e. going beyond 2030), technology development and infrastructure provision will have a major influence on the rate of decarbonisation.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
7. Displace fossil fuelled vehicles and plant with ULEV options	Vehicle replacement programme.	70% - carbon reduction	Fossil fuel consumption reduced by 60% by 2030. 70% of fleet transferred to ULEV by 2030.	2030, subject to detailed appraisal	Transport
8. Continue to purchase vehicles with anti-idling technology		-	Provide managers with idling reports from the vehicle monitoring system.	ongoing	Transport

Travel Plans and Active Schools

Travel plans for the council aim to Increase the numbers of people travelling by foot, cycle, public transport and car sharing for their journey to work. Moray Council Travel Plan is being updated including staff surveys comparing before and after Covid. Travel Plans will be promoted for large employers and schools in Moray.

Enacting the travel plan will help progress low carbon actions as part of the return from Covid. It will also help determine the carbon implications of changes as the council embraces flexible working.

New travel plans being progressed with some schools in partnership with Living Streets – active travel charity.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
9. Develop and promote Travel Plans for Moray Council, Major Employers and Schools	Staff time		Staff Surveys on Travel Behaviour. Number of schools with Travel Plans implemented. Number of businesses with Travel Plans implemented.	Moray Council Travel Plan - 20/21 School Travel Plans - 2025 Business Travel Plans - ongoing	Transport
10. Active Travel to School campaign and promotion, including parking management around schools, and supporting modal shift from vehicles to active travel wherever feasible	Staff time		No of pupils using active travel	Ongoing	Transport

Public Electric Vehicle Charging facilities

An EV Charging Strategy is being progressed as part of decarbonisation strategy to ensure Access is available to public EV charging facilities in all settlements across Moray

External Funding will be required to progress infrastructure provision. This area is not yet linked to council capital budgets, any and all projects would be externally funded.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
11. Develop Strategy and Guidance for provision of Public Electric Vehicle Charging facilities in Moray	Implement as funding becomes available.	N/A	TBD – around number and Type of public EV chargers linked to population levels.	Ongoing	Transport

3 Waste

Moray currently disposes of its municipal and commercial waste in landfill. This is the worst possible option in terms of the climate change gasses emitted as the waste decomposes. From 2022 the council non-recyclable waste will go to an energy from waste plant in Nigg, Aberdeen which will produce both electricity for the national grid and heat for a district heating network.

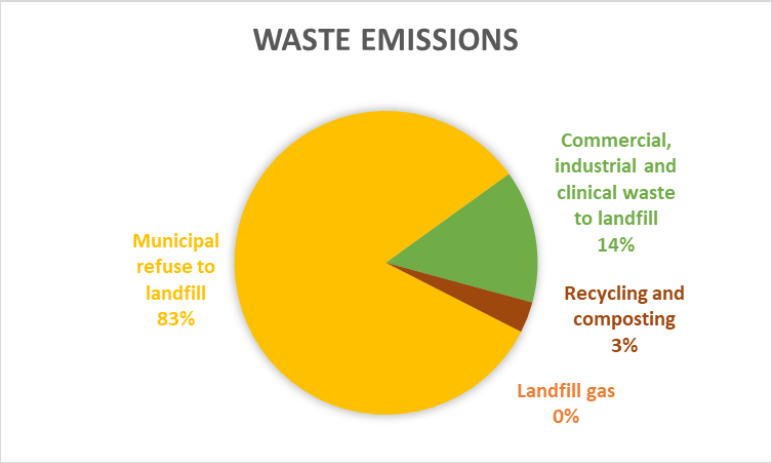


Figure 14 Moray Council Waste Emissions 2020-21 (from SSN submission of 30 Nov 2021)

Energy from Waste Plant

Aberdeen City, Aberdeenshire and Moray councils are working together to build an energy from waste facility to process their non-recyclable waste. This will be operational in 2022.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
12. Reduction of waste landfilled through diversion to energy recovery		TBD	95% diversion from landfill by 2023		Waste

Encourage a reduction of waste arising

Application for a re-use hub being drawn up. This will promote reuse with the third sector and further Develop recycling capacity in Moray.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
13. Reduce waste through reuse and recycling		TBD	increase recycling rates	Ongoing	Waste

Promote the Circular Economy

Actively connecting local circular economy social enterprises with construction and manufacturing firms, to provide access to excess materials and waste resource. This could include through hosting engagement and awareness raising sessions with building firms about the benefits of repurposing

waste for community projects or supporting circular economy organisations, in order to tackle commercial and industrial waste and contribute to community wealth building priorities.

Supporting the creation of a community benefit wish list, which will provide a platform for community groups to request support in the form of volunteering or materials in the delivery of projects.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
14. Supporting creation and promotion of community benefit wish list. Facilitating collaborative relationships between local construction firms / developers and circular economy initiatives.	Staff time	Currently outwith the scope of the emissions report	Record waste through community benefit wish list	ongoing	Community Wealth building, climate change

4 Operating Emissions

Operating emissions are created by the council carrying out its day-to-day work. This includes all other emissions included in the scope of the statutory annual climate change reports and estimates of the additional emissions currently not reported on. At present the reported emissions consist of an estimate of emissions for employees working from home, and electricity usage in outdoor spaces, for example in car parks and street lights. Programmes to replace street lights with LED are ongoing and the emissions from these are reducing.

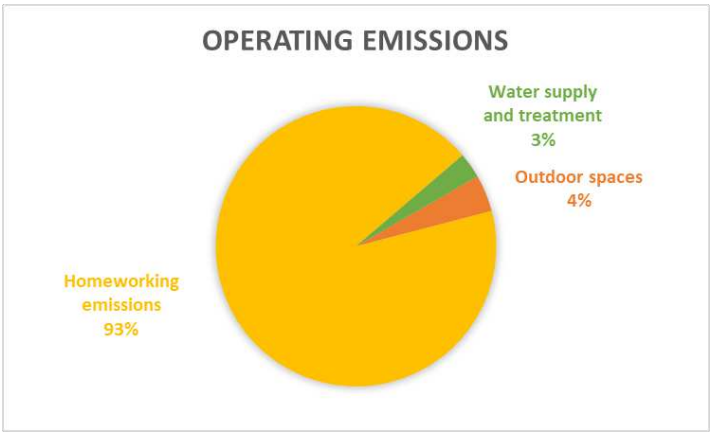


Figure 15 Moray Council Operational Emissions 2020-21 (from SSN submission of 30 Nov 2021)

In order to reduce the carbon emissions currently reported, it will be necessary to consider ways of supporting staff working from home to reduce their emissions. However, there are many additional council operations that result in emissions and are currently not reported. These are mainly scope 3 emissions and many will have to be included in the annual report in coming years.

This includes emissions which the council does not have direct control over but can have the ability to influence. For example, commuting, corporate travel (train, plane, taxi, etc.), hotel stays, embodied carbon in new build and maintenance, carbon embedded in items that are purchased, investments, and activities of suppliers.

Homeworking Emissions

Emissions incurred by staff when they are working for the council are included whether these occur in council buildings or in employees' homes. With more employees working from home, this is a considerable part of the emissions which the council is responsible for. These emissions will reduce as Scotland's national electricity and heating are decarbonised, however rising energy prices may mean that supporting staff with this expense may become more of a priority. Support could be through a combination of energy advice, and direct practical assistance for employees to reduce their emissions.

Homeworking emissions are calculated through an approved formulae so any attempts to reduce the estimated emissions would have to be able to withstand considerable scrutiny and agreement from SSN that these are valid.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
15. Support homeworkers to reduce their emissions through promotion or signposting to advice and explore potential for practical assistance.	Staff time	TBC	To be decided – must allow carbon reductions to be quantified and included in annual reports	Scope and research during 2022/23.	Climate change team supported by Energy team

Other actions to attempt to avoid emissions include embedding climate change into all aspects of the council's operations and planning, training and engagement with staff, involvement of education, and ITC.

Rationalisation of building assets and development of co-location facilities

While the energy efficiency and decarbonisation of heating of council buildings progresses, a separate issue is the more efficient use of workspace and technology which could lead to a reduction in single use accommodation and an increase in the number of co-located partnership facilities. This is relevant to the council's safe return after Covid and flexible working group, and dependent on multiple factors such as linking the office, depot and stores reviews to holistically consider partnerships and climate change issues. This is a long term action. However, the reviews into change and an agreed way forward must be decided by 2023/24 to allow subsequent actions to progress at a pace that can assist the council to reach net zero by 2030.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
16. Determine which buildings are surplus to requirements. Development of shared co-location facilities for all community areas (e.g. business, volunteers, leisure)	Heavily dependent upon other factors, e.g. multiple reviews, external partners, etc.	Not definable at present, dependent upon number of schemes and scope of works	Progress by 2023/24		Various

Climate Change Governance

Carbon impact is a key component of all investment decisions and is considered as a factor within the Capital Plan. Whole Life Costing or other appropriate methods will be applied as part of design development process and project appraisals. Reviews of climate change commitments such as the Climate Change Strategy and the Route Map will be undertaken in line with a defined schedule (see proposals below). All committee papers include a section to explain how relevant council decisions are made with reference to Carbon and Biodiversity implications.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
17. Apply zero and low carbon objectives as a factor in all investment decisions in relation to budgets and the Capital Plan		N/A	Incorporate carbon objectives into the AMWG, budgets and capital plan	Ongoing to 2030	Climate Change Team to support
18. Ensure the Climate Change Strategy and associated Action Plan are living documents and remain fresh and valid until 2030.		N/A	CCS reviewed every 3 years. Route Map reviewed Annually, with updates every six months	Ongoing to 2030	Climate Change Team
19. Climate Change and Biodiversity assessment as part of all committee papers		N/A	Complete	Ongoing to 2030	Climate Change Team to support

Staff Engagement

Training on Carbon Literacy to be delivered to council members, and officers in order to mainstream consideration of carbon implications in all future activity. This training, combined with climate change awareness in staff inductions and a climate change champions programme will aim to improve employee awareness and understanding of climate change. Embedding the co-benefits of low carbon living to encourage colleagues to adopt improved habits at work and home will be set out in a climate change engagement plan.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
20. Carbon Literacy – In depth training on climate change implications and opportunities to be delivered in house	Staff time	N/A	No of staff completed training, follow up surveys on impact	From May 2022	Climate Change team
21. Update Climate Change awareness training as part of staff induction process	Staff time	N/A	Staff awareness levels through surveys	Draft in 2022, rollout as per OD timeline	Climate Change team to develop
22. Continue the network of staff climate change champions to support innovation and engagement, increase knowledge and skills	Staff time	N/A	surveys on impact	Ongoing	Climate Change team

Education

The Climate change team has been engaging with schools to support teachers, promote action, and contribute to education around climate change issues.

Managers of early learning and childcare settings and head teachers of schools will ensure that children and young people have their entitlement to learning for sustainability education, delivered through curriculum for excellence's four contexts of learning.

School catering will continue to use locally sourced food and produce, provide meat free options, and reduce plastic waste in schools.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
23. Support networking opportunities for teachers and pupils to access and share knowledge and resources to progress climate change work	Staff time	N/A	No of engagement activities with school teachers	Ongoing	Climate Change Team
24. Increase opportunities for Learning for Sustainability within the curriculum for children and young people.		N/A	No of training/CPD sessions delivered to staff No of early years settings/ schools with Learning for Sustainability (LfS) in their curriculum Improvements in outdoor learning environment	Ongoing	Education, supported by climate change team
25. Continue to make school meals more sustainable with a reduced carbon impact. Develop and promote more vegetarian options, e.g. 'meat free' days and vegan options		N/A	Percentage of food and produce sourced locally Percentage of meal options offered that are vegetarian or vegan	Ongoing	Catering
26. Improve sustainability and recycling in schools including reduction / elimination of single use plastic packaging, a greater selection of recyclable materials across school catering services, improved recycling & food composting facilities in schools		N/A	Percentage of waste recycled in schools, percentage of food waste composted, reduction in use of single use plastics (prior to the ban)	Ongoing	Catering with support from the climate change team

ICT

Energy usage of ICT equipment is reported through their use within buildings. ICT is a considerable aspect of energy usage in council buildings. We will seek to have rationalised server provision and all PCs operated under optimum energy efficiency settings. This will be a phased approach within the overall strategy as linked with current contractual commitments and capacity of infrastructure to adapt.

On-line and flexible working increased as part of response to Covid. Prior to then there would only have been around 40 people working from home at any time. Continue to progress hybrid working as offices open up after Covid where the need for office space is reduced and hybrid working is the 'norm'.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
27. Increase use of virtual environment to reduce server network and consequent electricity consumption	Incorporate into ICT Digital Strategy - draft by 2023		Reduced number and/or use of servers Increased use of virtual environment		ICT
28. By default operate PCs and related equipment in the most energy efficient mode, e.g. auto switch off	Incorporate into ICT Digital Strategy - draft by 2023		Reduced electrical consumption		ICT
29. Promote on-line working			Reduction in office space. Reduction in officer travel Increase in flexible working arrangements		Various

5 Procurement and Investment

Currently procurement matters are outwith the scope of reporting on climate change emissions. However, there is recognition that the role of procurement by local authorities is essential in furthering a move to net zero for their geographical area, as well as supporting businesses who supply goods and services to the council.

The Scottish Government policy is that carbon will be a factor in future procurement activities of all public bodies to help achieve the national carbon reduction targets. Public procurement policy already reflects environmental considerations principally through the sustainable procurement duty of the Procurement Reform (Scotland) Act 2014. It requires public bodies to consider and act on opportunities to achieve socio-economic and environmental benefits in the course of their procurements. Public bodies are required to prepare an Annual Procurement Report to demonstrate alignment between procurement activity and the organisation's Procurement Strategy, including compliance with the Sustainable Procurement Duty.

The procurement team have reviewed the standard (weighted) sustainability tender question to allow evaluation of the contractors approach to sustainability. The outcome is recorded as a procurement non-cash benefit and the sustainable outcomes can now be reported on.

The sustainable procurement section of the Annual Procurement Strategy has been reviewed and developed further. This ensures that goods and services are procured responsibly, and with due consideration to ethical, carbon and sustainability factors – including through the supply chain and sub-contractors.

Sustainable Procurement Guidance (and training module) has been developed and embedded within the Council's tender process to reflect the priorities and actions of our Climate Change Strategy. This supports and informs departmental lead officers through the new process, and improves sustainability aspects and responses within the tendering process.

Actions include:

Sustainability and Climate Change in the Procurement Process

To have the ability to report on the sustainable outcomes (as a categorisation) a standard weighted question is being used in larger tenders going forward (typically 5% weighting). This allows consideration to be given of the contractors approach to sustainability and community wealth building during tender evaluation and allows the non-cash benefit of a procurement to be recorded.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
30. Continue to develop the non-cash benefits available through procurement	Staff	TBD	Monitor and report on through the sustainable procurement section of the Annual Procurement Strategy	ongoing	Procurement and CWB. Climate Change Team to assist.

Incorporate updates to national guidance and standardised statements associated with environmental management questions in the Single Procurement Document.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
31. Implement updates into procurement process			Update to SPD	Ongoing	Procurement

Support for Suppliers

Develop a simple tool to allow suppliers bidding for small contracts to evidence their sustainability and attempts to reduce their carbon emissions. This will be based on existing guidance and standard questions for larger tender bids, but in a simplified form to allow small and micro businesses to show how their business manages carbon emissions and how they would seek to reduce emissions when delivering any contract.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
32. Develop simple process for suppliers to evidence their carbon reduction attempts when bidding for smaller contracts	Staff time to develop process, to trial and implement.	TBD	Measure use of tool	Scoping & research in 2022/23	Climate Change Team to assist in developing and progressing

Supplier Development

Support development of a communications and engagement plan, to highlight new procurement opportunities linked to addressing climate change. This can be embedded within the refreshed action plan of the Supplier Development Forum. Activities will include hosting 'Meet the Buyer' events and using other promotional channels to identify future opportunities created through the just transition economy and expansion of renewable energy developments that local suppliers could deliver, to ensure they are ready to take advantage.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
33. Develop an action plan for raising awareness of local business of new opportunities created through just transition.	Staff time to develop communications plan and participate in Supplier Development Forum	N/A	No of suppliers assisted.	Ongoing	Procurement /CWB / Climate change team

Sustainable Procurement training

This will seek to continually improve sustainability aspects and responses within the tender process. Sustainability and community benefits are covered in the Procurement Training modules.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
34. To further develop Sustainable Procurement guidance and support and inform departmental lead officers through the process. Modules can be reviewed for further updates as appropriate.	Staff time	-	Increase in the number of sustainable measures noted and incorporated in tender submissions	Ongoing	Procurement with Climate Change Team to assist

6 Insetting and Offsetting Emissions

Moray Council owns land that is suitable for investment to improve carbon sequestration rates, and so can develop natural sequestration projects. The sequestration achieved can net off any residual emissions, or potentially use land to support Scotland's wider decarbonisation goals. Insetting gives opportunities to integrate the sequestration of carbon with other priorities of the council – localism, community wealth building, and economic stimulation.

This will require a financial commitment to plan, manage, and possibly purchase new land.

Manage Council Landholdings to Sequester Carbon

Develop a carbon offsetting programme by researching the baseline carbon flux for Moray Council's landholdings and to support the development of a method for how this will be tracked and reported as net zero ambitions.

Action	Resources	Carbon Offset	SMART Measure	Dates	Delivery Lead
35. Commission research for baseline carbon inset of council land holdings, along with opportunities to expand and manage	TBD	NA	Research delivered	Commission research during 2022/23	Climate Change team
36. Development of Indicative Carbon Offsetting Plan and ensuring management of council land holdings is planned to maximise carbon sequestration	TBD	TBD	Plan delivered and work started	Develop plan in 2022/23 and review management in 2023/24	Climate change team and Land and Parks

The Indicative Carbon Offsetting Plan will investigate a number of options including planting trees in land owned by the council, going in to partnership with landowners and community groups, and exploring opportunities for innovative carbon offsetting projects. The Indicative Carbon Offsetting plan will include options such as:

1. Large scale tree planting, on existing land owned by council and on land purchased for this purpose. Costs include tree planting and maintenance, purchase of land. The purchase of land will make this option more expensive than working in partnership with others, however this allows the council to retain control of the project and means the project could be enhanced through the promotion of community involvement and local job creation. A fully costed proposal for tree planting options to be developed

Action	Resources	Carbon Offset	SMART Measure	Dates	Delivery Lead
37. Large scale tree planting on TMC owned land	TBD	TBD	Calculation of carbon offset per year. Local jobs created or supported	Include in indicative Carbon Offsetting Plan 2023/24	Climate Change team to advance (with development planning)

2. Pay for large scale tree planting in partnership with landowners in Moray. Working in partnership would negate the need to purchase land and mean the projects could be expanded quickly to include additional offsetting if required. However, the council would not be in control of the project, and costs could increase as other organisations seeking to offset their emissions will result in the market becoming more competitive. There may also be less opportunities to include community benefit, leisure opportunities etc.

Action	Resources	Carbon Offset	SMART Measure	Dates	Delivery Lead
38. Tree planting in partnership with landowners in Moray	TBD	TBD	Calculation of carbon offset per year. Local jobs supported	Include in indicative Carbon Offsetting Plan 2023/24	Climate Change team to advance (with development planning)

3. Other carbon offsetting proposals may include projects to finance the restoration of peatland in Moray or to investigate the potential of kelp production as a carbon offset and new business. By their nature, these types of projects will be on a smaller scale than tree planting projects, they will be more speculative and will not offset as much carbon. However, there are opportunities for Moray to progress and develop kelp production in the East coast and kick-start a market for kelp products. These proposals could be worked up with partners, for example HIE.

Action	Resources	Carbon Offset	SMART Measure	Dates	Delivery Lead
39. Innovative carbon offsetting projects e.g. peat restoration, kelp production	Officer time to progress and source external funding	Difficult to calculate prior to project agreement, but likely to be minimal	Calculation of carbon offset per year. Local jobs created or supported	Include in indicative Carbon Offsetting Plan 2023/24	Climate Change team to advance (with development planning)

4. Investigate opportunities for a community project with the third sector to support and manage offsetting projects identified by local communities. This will assist local communities to plant trees and install renewable technology to replace fossil fuel heating in community buildings. Carbon offset of trees could be included if under a management contract. This could be a vehicle for supporting council participatory budgeting and be an opportunity for the council to source external funding to assist community projects.

Action	Resources	Carbon Offset	SMART Measure	Dates	Delivery Lead
40. Community offsetting projects	Officer time to progress and source funding	Difficult to calculate prior to project agreed, but likely to be minimal	Calculation of carbon offset per year. Level of community involvement. Number and location of projects	Include in indicative Carbon Offsetting Plan 2023/24	Climate Change team to advance (with development planning)

7 External Influence

The council had a statutory duty to help reduce emissions in the wider Moray Area. This includes actions such as supporting energy efficiency 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 carbon footprint, there is a commitment in the Climate Change Strategy to support reducing the carbon emissions of the wider Moray area.

Local Heat and Energy Efficiency Strategy (LHEES)

Deliver the Scottish Government's Local Heat and Energy Efficiency Strategy (LHEES) in Moray and prepare for the introduction of a statutory framework. LHEES aim to establish local authority plans for systematically improving the energy efficiency of buildings and decarbonising heat in their geographical area. Phase 1 is to review current policies and research internal stakeholders. This can be delivered using existing resources and co-ordinated by the climate change team. However subsequent phases will require additional staff resources to fully develop the strategy and progress the scheme into a delivery phase. It is expected that additional financial resources will be made available to Local Authorities once LHEES becomes a statutory duty.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
41. LHEES Delivery of phase 1 report Development and deployment of Statutory framework	In house, although additional staff resources required to progress	N/A	Phase 1 delivered	2022/23	Climate Change team
Complete development of LHEES strategy beyond Phase 1 and develop action plan. Progress to delivery stage.	Additional staffing resources required. Additional resources required to implement.	N/A	TBD	Ongoing	Part of LHEES project

Home Energy Efficiency Programme for Scotland (HEEPS)

Improve the energy efficiency of private sector housing in Moray by delivering the Home Energy Efficiency Programme for Scotland (HEEPS). The outcome of this is to reduce carbon emission from private sector housing

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
42. Continue the HEEPS programme	HEEPS programme dependant on continued Scottish Government funding.		SHCS - % of private sector dwellings with SAP B or C.	Ongoing to 2030	Buildings

Active Travel

The Active Travel Strategy for Moray is currently out for consultation. This strategy will promote travel behaviour change through targeted programmes including infrastructure measures and website information provision. With an outcome of increased numbers of people travelling by foot, cycle, public transport and car sharing and/or reducing the numbers of journeys made by private fossil fuelled vehicles.

Information will be available for residents, employers and visitors to Moray to assist in making low carbon travel choices.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
43. Promotion of the Active Travel Strategy	Staff time	N/A	Mode of transport survey information. Quantity of new active travel infrastructure provided Number of website 'hits'	Ongoing	Transport

Training

Moray Council will work closely with schools, local colleges, universities and businesses to build the skills and capacity for a greener economy, including a focus on new low carbon technologies and the circular economy, promoting green apprenticeships and other opportunities. Moray Council are leading on the development of a new apprenticeship strategy for Moray, for the community planning partners. This should ensure a focus upon green apprenticeships where possible to support the just transition.

There is a need for engagement with local business to prepare them to take advantage of new opportunities which will arise of the transition to a low carbon economy. This includes provision of training for local enterprises, to encourage increased access to public contract opportunities. .

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
44. Increase the provision of relevant skills and knowledge for a greener economy 45. Feed into the development of Moray apprenticeship strategy, to ensure focus upon green apprenticeships. 46. Support planning and delivery of awareness raising event to promote new opportunities for existing businesses in the green economy transition.	Staff time		TBD	Ongoing to 2030	Climate Change and Community Wealth Building, procurement, training, Economic Development

External Engagement & Moray Wide Partnership working

Climate change is now a standing item on the agenda for discussion at both Community Planning Officers Group & Community Planning Partnership Board. The focus of the Local Outcomes Improvement Plan (LOIP) around inequalities does not necessarily create the opportunity to embed CCS priorities into the LOIP, instead actions and interventions within the LOIP will consider climate change in the way they are delivered

An engagement strategy is being created to focus awareness raising and communication around climate change. A proposed network around a third sector Moray Climate Hub would be a logical organisation to take many of these actions forward.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
47. Engagement Strategy - Consult, raise awareness, communicate and engage with staff, residents, businesses and organisations across Moray about climate change	Staff	N/A	Greater engagement from staff and residents	Ongoing to 2030	Climate change team, alongside energy team, transport, waste team etc. as appropriate and external CPP partners
48. Assist effective governance for Climate Change priorities for the Moray area in partnership with the CPP, public, private and community organisations. 49. Consult community groups and residents about climate change issues re a Moray knowledge base. 50. Investigate reporting and monitoring of results in area-wide emissions as calculated by BEIS. 51. Support the work of the Moray Climate Assembly.	Staff	N/A	Monitoring and reporting system in place. Improved communication between local orgs and Moray Council regarding climate change policy and action		Climate Change Team in partnership with the CPP, public, private and community organisations. Moray Climate Hub
52. Promote national campaigns	Staff	N/A	No of national campaigns supported	Ongoing to 2030	Climate change team and other sections as appropriate
53. Engage with local communities to facilitate information provision and discussion for local renewable energy schemes / Community Energy Schemes with local benefits,	Staff	N/A	Increase in number of renewable and community energy schemes	Ongoing to 2030	Climate change team in partnership with the CPP, public, private and community organisations
54. Join support networks to assist the progress of climate change work e.g.	Staff	N/A	Involvement with support networks	Ongoing to 2030	Climate change team

SSN, Hydrogen Networks, AREG					
55. Develop and promote Moray-specific climate emergency training for local groups and organisations	Staff	N/A	Training delivered	From 2023	Climate change team in partnership with the CPP, public, private and community organisations

Strategic Planning and Development for Moray

The implementation of National Planning Framework 4 policies relating to the climate crisis will give significant opportunities to align strategic planning with the aims of the Climate Change Strategy. This requires the reduction of carbon in all new developments (and offsetting if required); addressing the nature crisis by having access to better data on priority habitats and species; and promoting biodiversity through the planning system and all council projects.

Other opportunities include promoting Local Place Plans and developing 20 minute neighbourhood concepts for Moray's main towns, reducing the need to travel, improving access to facilities, active travel, food growing spaces and greening of our towns. These will be embedded within the next Local Development Plan. Smart objectives to be developed along with the individual strategies.

Action	Resources	Carbon Savings	SMART Measure	Dates	Delivery Lead
56. Implement National Planning Framework 4 policies relating to the climate crisis	Staff	N/A	TBC	Ongoing	Strategic Planning & Development
57. Develop Regional Spatial Strategy, concentrating growth in existing centres, identifying opportunities for carbon reduction and renewable energy projects, woodland expansion, peatland restoration	Staff	N/A	TBC	end 2023	Strategic Planning & Development
58. Review Forest and woodland strategy	Staff	N/A	TBC	end 2023	Strategic Planning & Development
59. Embed net zero aspirations in Levelling Up Fund bid	Staff	N/A	TBC	summer 2022	Strategic Planning & Development
60. Develop 20 minute neighbourhood concepts for Moray's main towns, and embed within next Local Development Plan	Staff	N/A	TBC	end 2024	Strategic Planning & Development
61. Promote and support brownfield development over greenfield development.	Enacting this will require budget support	N/A	Setting targets for brownfield development in housing land requirements	end 2023	Strategic Planning & Development

62. Moray Growth Deal Housing Mix Delivery project	Staff	N/A	innovation event for 20 net zero homes at Dallas Dhu, Forres	end 2026	Strategic Planning & Development
63. Review and support implementation of Food Growing Strategy and Open Space Strategy	Staff	N/A	maximise food growing opportunities and to maximise opportunities for tree planting and active travel measures	end 2023	Strategic Planning & Development

Section 5: Timing of Actions

Key
Phase 1 - Scoping & Research
Phase 2 - Design & Developing Business Case
Phase 3 - Delivery

Number	Action	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
1	Convert all fossil fuel heating systems to low carbon alternatives.										
2	Increased renewable energy generation from council assets.										
3	Complete Learning Estate AMP.										
4	Implement zero carbon standards in new buildings.										
5	Achieve EESSH for all council houses.										
6	Increased building user awareness on energy usage.										
7	Displace fossil fuelled vehicles and plant with ULEV options.										
8	Continue to purchase vehicles with anti-idling technology.										
9	Develop and promote Travel Plans for council, etc.										
10	Promote and enhance active travel at schools.										
11	Develop strategy and guidance for public EV charging facilities.										
12	Reduction of waste landfilled through diversion to energy recovery.										
13	Reduce waste through reuse and recycling.										
14	Support creation and promotion of community benefit wish list.										
15	Support homeworkers to reduce their emissions.										
16	Ratify buildings and develop shared facilities.										
17	Apply zero and low carbon objectives in all investment decisions.										
18	Ensure CCS and CCAP remain fresh and valid until 2030.										
19	CC and Biodiversity assessment as part of all committee papers.										
20	Deliver carbon literacy training.										
21	Update CC awareness training as part of staff induction process.										
22	Pilot a network of staff climate change champions.										
23	Support networking opportunities for teachers and pupils on CC.										
24	Increase opportunities for Learning for Sustainability in schools.										
25	Continue to reduce carbon impact of school meals.										
26	Improve sustainability and recycling in schools.										
27	Increase use of virtual environment for information.										
28	By default ICT equipment to operate in most energy efficient mode.										
29	Promote and increase opportunities for remote working.										
30	Continue to develop the non-cash benefits through procurement.										
31	Implement updates into procurement process.										
32	Develop simple process for suppliers to evidence carbon reduction.										
33	Develop action plan for raising awareness of local businesses.										
34	Develop sustainable procurement guidance and inform lead officers.										
35	Commission research for baseline carbon inset										
36	Development of Indicative Carbon Offsetting Plan.										
37	Large scale tree planting on TMC owned land.										
38	Tree planting in partnership with landowners in Moray.										
39	Innovative carbon offsetting projects.										
40	Community offsetting projects.										
41	Deliver LHEES programme.										
42	Continue the HEEPS programme.										
43	Promotion of the Active Travel Strategy.										
44	Increase relevant skills and knowledge for a greener economy.										
45	Feed into the development of Moray apprenticeship strategy.										
46	Support awareness raising for businesses.										
47	Development on CC Engagement Strategy.										
48	Assist effective governance for CC priorities for Moray.										
49	Consult community groups and residents about climate change										
50	Reporting and monitoring of results in area-wide emissions.										
51	Support the work of the Moray Climate Assembly.										
52	Promote national campaigns.										
53	Engage with local communities to facilitate renewable energy										
54	Join support networks to assist the progress of climate change work										
55	Develop and promote Moray-specific climate emergency training										
56	Implement NPF 4 policies relating to the climate crisis.										
57	Develop Regional Spatial Strategy										
58	Review Forest and woodland strategy										
59	Embed net zero aspirations in Levelling Up Fund bid										
60	Develop 20 minute neighbourhood concepts for Moray's main towns										
61	Promote and support brownfield development over greenfield development.										
62	Deliver Moray Growth Deal Housing Mix Delivery project.										
63	Review and support Food Growing Strategy and Open Space Strategy										

Figure 16 Moray Council Operational Emissions 2020-21 (from SSN submission of 30 Nov 2021)

Figure 16 shows a broad timeline of actions from research to design and delivery. While some actions are ongoing, many are going through a process of research and funding prior to delivery. This timeline will be further developed as the actions move from design to delivery.

Definitions

Adaptation[8]
The adjustment in economic, social or natural systems in response to actual or expected climatic change, to limit harmful consequences and exploit beneficial opportunities.

Baseline year
Historical period specified for the purpose of comparing GHG emissions.

Boundary
Greenhouse Gas (GHG) inventories or carbon footprints are defined by boundaries. The boundary chosen should be in line with the GHG Protocol on corporate emissions. Ideally boundaries need to be expressed in terms of both the estate and services included (the organisational boundary) and the operational emission sources included.

Carbon emissions
This term is used as short-hand for greenhouse gas emissions (which, in addition to carbon dioxide, also includes methane, nitrous oxide and refrigerant gases).

Carbon equivalents
GHG emissions are measured in tonnes of CO_2 equivalents which is a quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO_2 that would have the same global warming potential (GWP), when measured over a 100 year timescale. These units therefore enable comparison of different greenhouse gases emitted, or saved, at different project stages.

Carbon footprint
This is an estimate of GHGs emitted to, or removed from, the atmosphere over a set period of time and is expressed in units of CO_2e. A carbon footprint of an organisation refers to the sources within the footprint boundary chosen by the organisation and is likely to cover energy in buildings, street lighting (for local authorities), waste, business travel and fleet but could also include other emission sources. The carbon footprint discussed is therefore specific to each organisation.

Circular economy
This is an alternative to a traditional linear economy (make, use, dispose) in which resources are kept in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

Direct and indirect emissions
The Greenhouse Gas (GHG) Protocol defines direct and indirect emissions as follows:

- Direct GHG emissions are emissions from sources that are owned or controlled by the reporting entity.
- Indirect GHG emissions are emissions that are a consequence of the activities of the reporting entity, but occur at sources owned or controlled by another entity.

Embodied carbon
Defined as the energy use and resulting carbon emissions released during the extraction, manufacture, sale, transport, assembly, installation and disposal of products or services.

[8] Definitions mainly from Public sector leadership on the global climate emergency: guidance https://www.gov.scot/publications/public-sector-leadership-global-climate-emergency/

Emission reduction
Reduction in emissions relative to a baseline (e.g. wind turbines replace coal electricity generation).

Global warming potential (GWP)
Factor describing the radiative forcing impact of one mass-based unit of a given GHG relative to an equivalent unit of carbon dioxide over a given period of time (usually 100 years). GWP is used to 'translate' other greenhouse gases into units of carbon dioxide equivalents for comparison.

Greenhouse gas (GHG)
Any gas that contributes to the greenhouse effect by absorbing infrared radiation in the atmosphere.

Residual Emissions
Any GHG Emissions which remain after all reasonable efforts have been made by a project or organisation to reduce their GHG Emissions.

Whole Life Costing
Refers to the total cost of ownership over the life of an asset. Typical areas of expenditure which are included in calculating the whole-life cost include planning, design, construction and acquisition, operations, maintenance, depreciation and cost of finance and disposal.

Net Zero
Where the total greenhouse gas (GHG) emissions put into the atmosphere would be equal to or less than the emissions removed from the atmosphere.

Insets
Are activities within the organisations operational boundary, such as enhancing the carbon sequestration of their own land holdings, or by agreement, on public land.

Offsets
Are externally verified and purchased/ sold on a market.