

Dundee City Council

Net Zero Transition Plan 2024-2030





Foreword

Since declaring a climate emergency and publishing the city-wide Climate Action Plan in 2019, there have been many unprecedented global challenges that have only magnified the urgency of the climate crisis we face. Recognising this, the new City Plan (2022-2032) and Council Plan (2022-2027) identify tackling climate change and reaching net zero carbon emissions by 2045 **or sooner** as one of its three strategic priorities.

This Net Zero Transition Plan builds on this ambition, committing Dundee City Council to being a net zero organisation by 2038 and will allow Dundee City Council to effectively and decisively lead this transition to a low carbon and climate resilient City.

The plan is an opportunity for Dundee City Council to establish itself as a greener, fairer organisation and provide a clear signal to investors and partners that the Council is open for investments and partnership in low and zero carbon projects, technologies, research and development, and innovative businesses.

The plan will enable the Council to capture and redistribute the benefits of low-carbon investments and energy transition fairly at local level through local, community-led and place-based approaches. The plan recognises the opportunity to be more energy secure through local renewable generation and be more resilient by upgrading our green spaces and critical local infrastructure against the adverse climate.

The plan is also aimed at inviting our suppliers and contractors to join us in the transition to greener, cleaner and fairer Dundee by setting their own emissions reduction targets and net zero plans. High levels of engagement will ensure everyone is empowered to participate in developing and implementing these solutions as well as to reap these benefits. In co-designing solutions, our community will benefit from access to biodiverse green spaces, improved health and well-being, clean air, affordable food and energy and protection from future climate impacts.



Cllr John Alexander
Leader of Dundee City Council

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Greg Colgan
Chief Executive Dundee City Council

A handwritten signature in black ink, appearing to read 'G Colgan'.



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Introduction

Dundee City Council is committed to becoming a net zero organisation by 2038.

The Council is responding to the pace and scale of the transition required to tackle climate change and meet its statutory targets by developing its own Net Zero Transition Plan. This Plan outlines the Council's organisational approach and emissions reduction programmes to achieve our goal of net zero by 2038.

As global temperatures rise due to increased greenhouse gas emissions, the impacts from our changing climate will be experienced in Dundee, with potential for increased flooding, storms, and extreme heat in the city. The United Kingdom is a signatory of the Paris Agreement, which has set an international goal to limit global warming to well below 2 °C, preferably to 1.5 °C, compared to preindustrial levels.

The Climate Change Act 2008 sets a target of reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050 in the UK. In Scotland the Climate Change (Scotland) Act 2009 and its subsequent amendment, the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, has set net-zero emissions by 2045 with an interim target of a 75% reduction in emissions by 2030, relative to 1990 levels.

There is therefore a statutory duty for the Scottish public sector to align and support the Scottish Government's target of net zero by 2045 or sooner.

The Heat in Buildings Strategy sets targets for all buildings. This includes a target to make public sector non-domestic buildings net zero direct emissions by 2038 and a goal for the large majority of buildings to achieve a good level of energy efficiency, where technically and legally feasible, by 2030.

The Scottish Government also plans to introduce regulations in 2025 to reduce greenhouse gas emissions from heat in non-domestic buildings in line with the legally binding target to achieve net zero greenhouse gas emissions by 2045.

The direct emissions (heating) from the buildings sub-sector accounted for 54% of total Dundee City Council emissions in 2020. By achieving net zero direct emissions from buildings means Dundee City Council will have reduced 54% of emissions by 2038 from its 2020 level.

Electricity use in the building subsector accounted for 25% of total emissions. We assume that there will be a continued reduction in grid electricity emissions factor which will reduce our electricity emissions continuously, even in the BAU scenario.

We are confident that our target of 2038 is an achievable ambition, however all actions are dependent on the continued support from the Scottish and UK Governments.

Aim

Our Net Zero Transition Plan will:

- Set out a clear roadmap for our transition to become a net zero organisation with a set of corporate actions across Net Zero emissions, Circular Economy, Climate Resilience and Just Transition;
- Implement a carbon accounting process that will embed delivery across all our Services;
- Ensure our activities and infrastructure are resilient to a changing climate;
- Engage and involve our staff, customers and the public in our journey to become a net zero organisation; and
- Act as a local leader and support the city of Dundee and Scotland in ambitions for a net zero society.

What is net zero?

Put simply, net zero refers to the balance between the amount of greenhouse gas produced and the amount removed from the atmosphere. We reach net zero when emissions are ideally less than 10% with the residual emissions being removed from the atmosphere by carbon offsetting.



Climate Policy Context

Dundee City Council led on a city-wide Climate Action Plan and has signed various pledges and declarations, demonstrating its commitment to Net Zero.

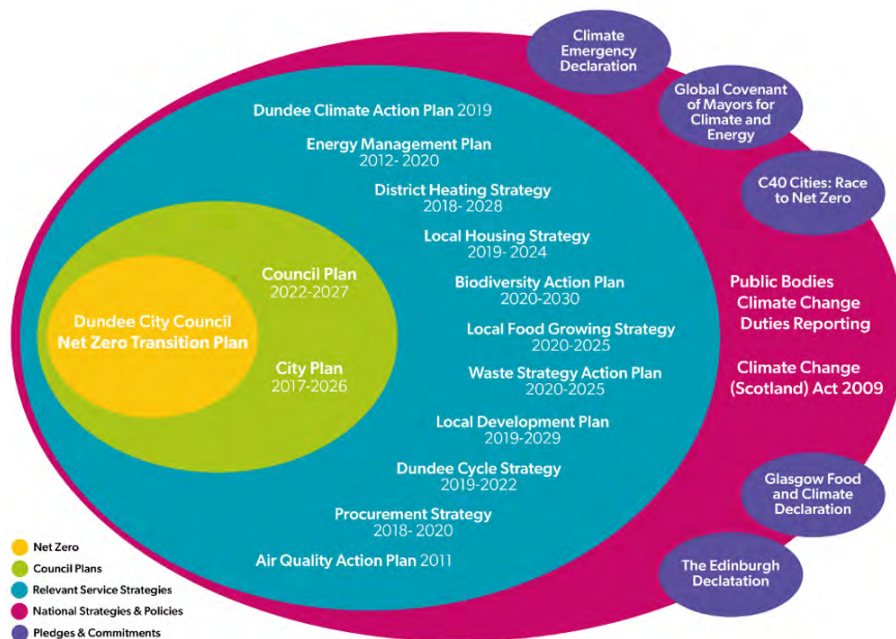


Figure 1: Dundee's plans, strategies and commitments in relation to the Net Zero Transition Plan.

Climate Change Act

In order to comply with our mandatory Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Amendment Order 2020, our annual reports must now include:

- The body's target date for achieving zero direct emissions of greenhouse gases, or such other targets that demonstrate how the body is contributing to Scotland achieving its emissions reduction targets;
- Where applicable, targets for reducing indirect (Scope 3) emissions of greenhouse gases;
- How the body will align its spending plans and use of resources to contribute to reducing emissions and delivering its emissions reduction targets;
- How the body will publish, or otherwise make available, its progress to achieving its emissions reduction targets; and
- Where applicable, what contribution the body has made to helping deliver Scotland's Climate Change Adaptation Programme.

Climate Emergency Declaration

In June 2019 Dundee City Council declared a Climate Emergency recognising the serious and accelerating environmental, social and economic challenges faced by climate change and aligning our targets with the Scottish Governments targets of net zero by 2045 or sooner.

Dundee Climate Action Plan

The city-wide Dundee Climate Action plan, launched in December 2019, was informed by our Baseline emissions Inventory, Risk and Vulnerability Assessment, Strategic Environmental Assessment and public consultation, resulted in 64 actions across the themes of Energy, Transport, Waste and Climate Resilience codesigned with public, private and community organisations across the city.



Pledges and Declarations

In August 2021, Dundee City Council signed the C40 Cities: Race to Net Zero Pledge; The Edinburgh Declaration and the Glasgow Food and Climate Declaration.

Our **Race to Net Zero Pledge** publicly highlights the message that the city of Dundee recognises the global climate emergency and will reduce the cities emissions to net zero by 2045 at the latest. This will be led by partnership working to deliver the Dundee Climate Action Plan.

By signing the **Edinburgh Declaration**, Dundee City Council is committed to halting biodiversity loss and acknowledges it as a powerful driver of climate change and the Climate Emergency. It will continue to fulfil its biodiversity duty under the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2011 and work on actions set out within Dundee's Biodiversity Action Plan 2020-2030 and Dundee's Climate Action Plan.

Signing the **Glasgow Food and Climate Declaration** commits Dundee City Council to accelerate climate action by building and facilitating sustainable food systems transformation, by:

- Developing and implementing integrated food policies and strategies, for example building on Dundee's Local Food Growing Strategy;
- Reducing greenhouse gas emissions from urban and regional food systems;
- Calling on national governments to establish supportive and enabling policy frameworks and multi-level and multi-actor governance mechanisms.

In March 2018, Dundee City Council signed up to the **Global Covenant of Mayors for Climate and Energy**, requiring us to commit to 40% reduction in city wide carbon emissions by 2030 and produce a Climate Action and Adaptation Plan.

Our Emissions

This plan sets out how we will achieve our organisational goal of net zero emissions by 2038 by reducing emissions across these sectors: -

- Stationary Energy – Buildings and streetlighting
- Transport – Fleet, business and service travel
- Waste – Dundee City Council waste (all waste produced by the Council internally and not waste collected as part of domestic or commercial services provided by regulation)

Carbon accounting will also commence for the Council and each of its Services to help identify emissions reduction targets annually. This will help us to work towards setting a carbon budget, which sets a fixed amount of carbon that each Service is allowed to emit over a set period.

Since 2011, Dundee City Council has been required under the Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Act to report its progress in emissions reduction from its own operations with around 50% of emissions reduction achieved since the reporting began.

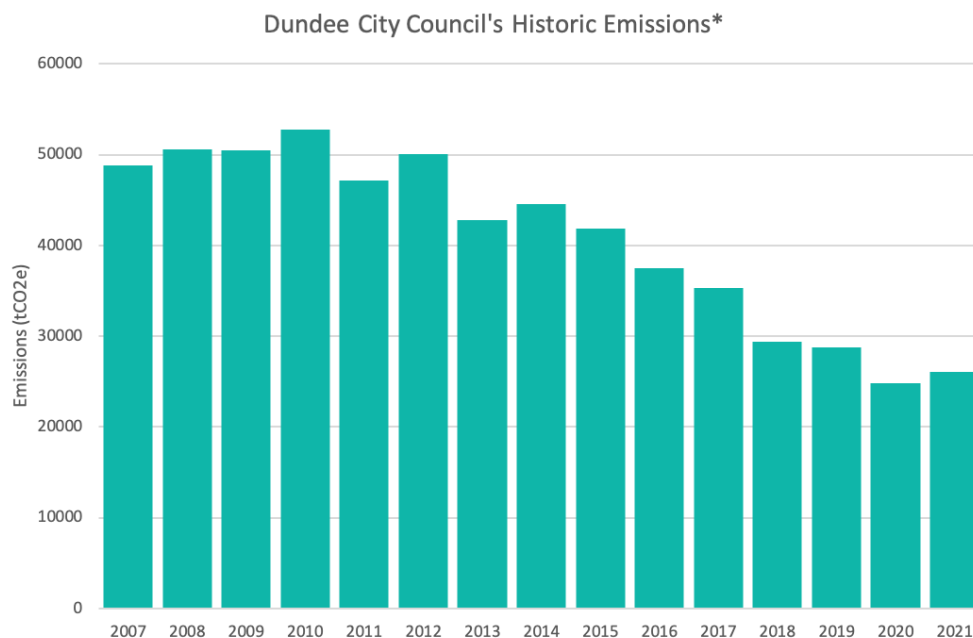


Figure 2: Dundee City Council's Historic Emissions

Figure 2 includes the emissions from the Dundee City Council (buildings, other stationary, fleet, business travel and Dundee City Council waste) and excludes municipal waste.

Figure 3 shows that the emissions are is divided into the following three main sectors and five sub-sectors;

1. Stationary

- i. Buildings
- ii. Other Stationary

2. Transport

- i. Fleet
- ii. Business Travel

3. Waste

- i. Dundee City Council Waste

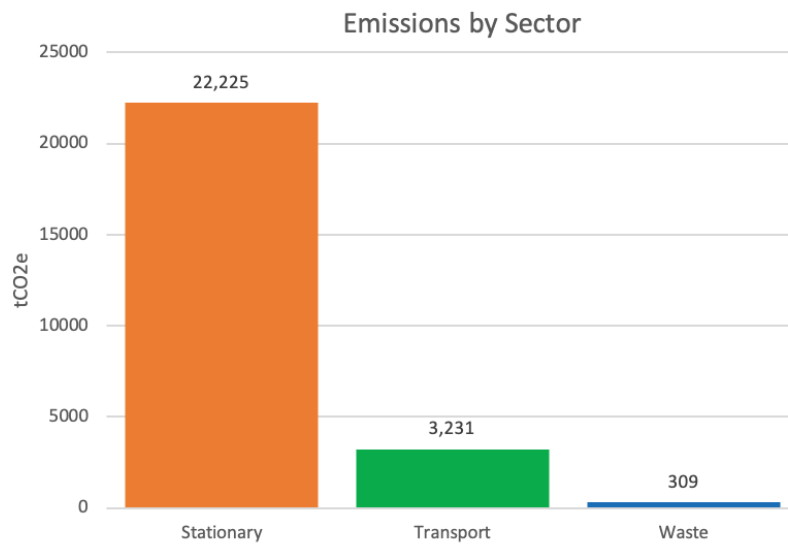


Figure 3: Emissions by Sector

Buildings

The Buildings sub-sector accounted for 79% of total emissions. The emissions from the building subsector mainly comes from the schools, sports and leisure facilities, offices, libraries, sheltered housing, museums and galleries, and community complexes. In terms of activity the natural gas use (Scope 1 emissions) for space and water heating and electricity use (Scope 2 emissions) for lighting and appliances contribute to building sub-sector’s emissions.



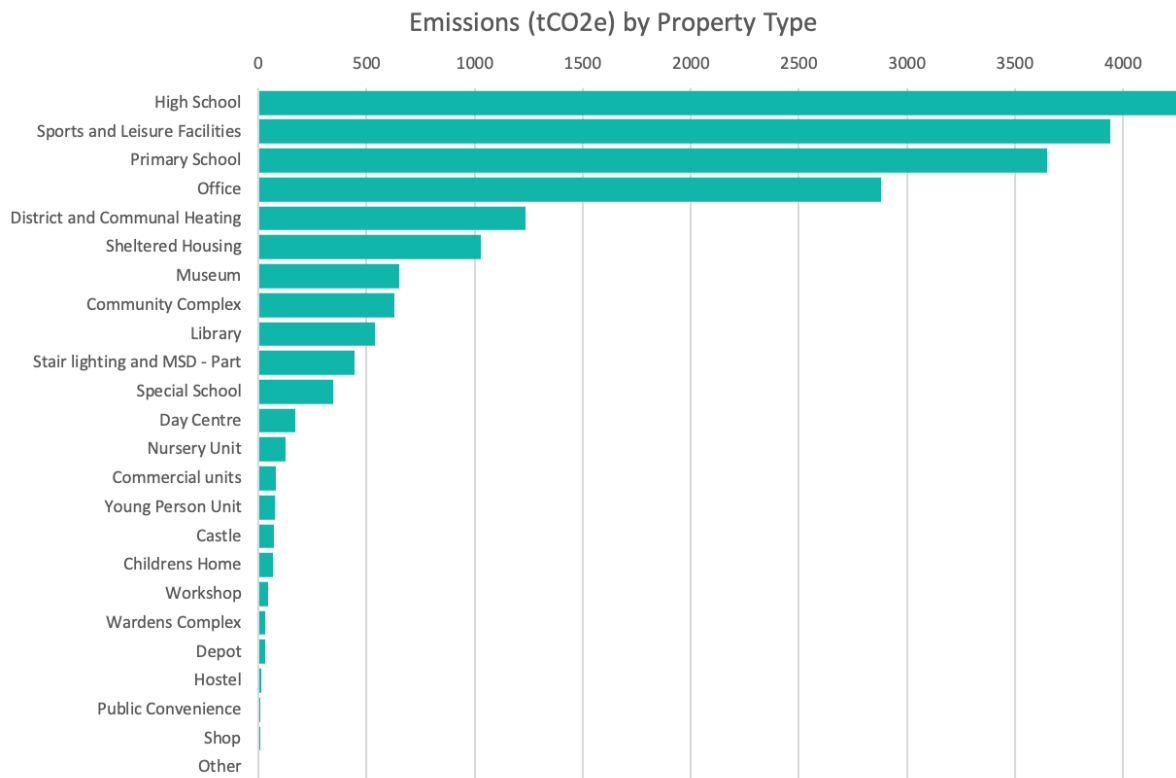


Figure 4: Emissions by Property Type

Buildings With A High Carbon Footprint

- High schools have the highest accumulated emissions footprint mainly because some of them are multi-purpose buildings and have gym, sports and swimming facilities which are used by public.
- The size (floor area) of high schools contributes to their higher emissions. This is seen when we compare the energy consumption with floor area. Although schools have the highest emissions footprint collectively, the median heat intensity of high schools was 135.83 kWh/m²/year which is one of the lowest heat intensities compared to other Council buildings. This suggests that although high schools have a high carbon footprint, the buildings themselves may not necessarily be inefficient, compared to other Council buildings.
- Like the schools, Council offices have collectively large carbon footprints, but they sit in middle in terms of efficiency with median heat intensity of 171.63 kWh/m²/year.

Buildings With High Carbon Footprint, High Heat Intensity And High Energy Bill Relative To Size

- The Council buildings with highest heat intensity (heat demand per meter square per year) are Children's Homes and Sheltered Housing (Residential Homes for Elderly people), Day Centres and Sports and Leisure Facilities suggesting that these buildings require more energy to heat per meter square of floor area than other Council buildings.
- On average this group of buildings' heat intensity was 282 kWh/m²/year while the median heat intensity for all Council buildings was 161 kWh/m²/year. These buildings are also among the buildings with highest emissions footprint meaning they contribute to a large proportion of Council emissions.
- The same group of buildings also have the highest energy cost per meter square per year (£/m²) which suggests that these buildings also have high energy bills. This data suggests that these buildings are likely to be less efficient and need to be prioritised for any energy efficiency and/or decarbonisation plans.

Other Stationary

Other sub-sector accounted for 7% of total emissions. Emissions from Other Stationary sector comes primarily from streetlighting, and Council owned EV charging points. Among Other Stationary sub-sector, Streetlighting accounted for 5% of total emissions. Small amounts of emissions come from cemetery, gardens, CCTV monitors, Air Quality Monitors etc. In terms of activity, grid electricity (Scope 2 emissions) is used for streetlighting and EV charging; natural gas (Scope 1 emissions) is used for certain appliances contributing to 'Other Stationary' sub sector's emissions.

Fleet

The fleet sub-sector accounted for 10% of total emissions. Fuel use by Council owned ICE vehicles is reported as fleet emissions and in terms of activity is classed as Scope 1 emissions. The Council owns various fleet such as vans, refuse trucks, mini-buses, cars, construction plants and various machineries which contribute to the fleet emissions.



Business Travel

Business Travel accounted for 3% of total emissions. Mileage and fuel cost claimed by Council staff for work-related travel are referred to as Business Travel. These are indirect emissions that come from Council employee business travel when they use different modes of public transport such as bus, taxi, train and air travel. Business travel is classed as Scope 3 emissions.

Waste

Waste accounted for 1% of total emissions. Emissions from waste generated by the Council is separated from emissions from total waste collected as part of domestic or commercial services provided by regulation using the proportion of number of employees working for the Council in Dundee City. Waste is classed as Scope 3 emissions.

Emissions by Scope

Greenhouse gas emissions are classed as into three Scopes; **Scope 1, Scope 2 and Scope 3**, and reported separately to delineate direct and indirect emissions sources and improve transparency. Defining Scopes of emissions also helps the Council to relate the climate actions with different types of climate policies. For example, Scope 1 or direct emissions are primarily related to the Council's own policies and actions, Scope 2 emissions are largely dependent on national policies and external factors such as decarbonisation of national electricity grid and Scope 3 emissions are largely dependent on the market, Council's suppliers, contractors, employee behaviour etc.

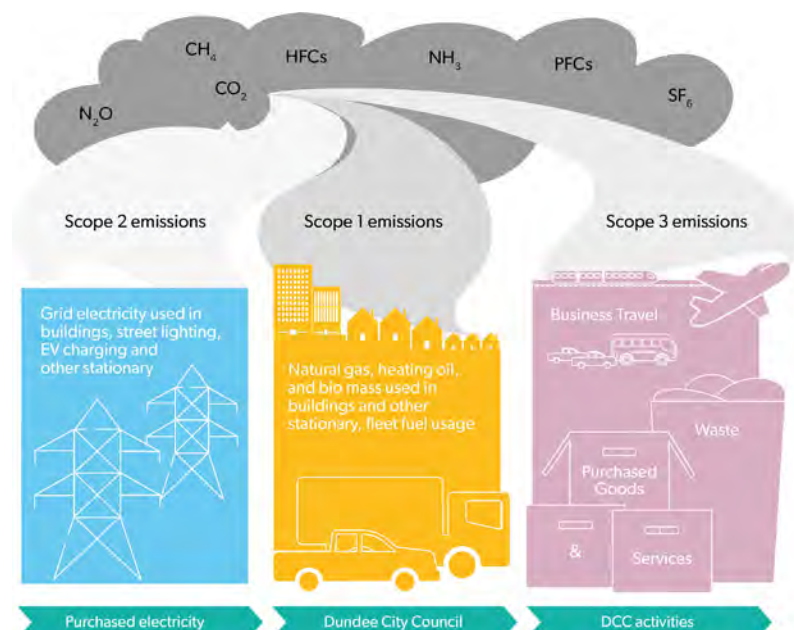


Figure 5: Illustration Of Scope 1, Scope 2 And Scope 3 Emissions Accounted In This Report.

Scope 1 Emissions

Emissions from sources owned or controlled by Dundee City Council are reported as Scope 1 emissions and include the following activities:

- Direct fuel use (natural gas, heating oil and biomass used for heat) in Council buildings
- Direct fuel use (natural gas, heating oil and biomass) in 'Other Stationary' sector
- Direct fuel use (diesel, petrol and gas oil) in Dundee City Council fleet

There is a small proportion of biomass and heating oil used in buildings, this is incorporated in natural gas use in buildings.

Scope 2 Emissions

Emissions from the generation of purchased electricity that is consumed in the Council's owned, or controlled buildings or operations are reported as Scope 2 emissions. They include the following activities:

- Electricity used in Council buildings
- Electricity used in streetlighting and any other stationary Council assets that are not accounted under buildings

Scope 3 Emissions

Scope 3 emissions are often referred to as supply-chain emissions or procurement emissions. Any other indirect emissions that is not accounted in Scope 1 and Scope 2 emissions are reported as Scope 3 emissions. It is usually an optional exercise as normally the Council's Scope 3 emissions would be someone else's Scope 1 emissions. For example, if a Council staff member travels by taxi owned by company A, for business purposes it is Scope 3 emissions for Dundee City Council but for company A the emissions from that travel is Scope 1 emissions.

Dundee City Council is a CDP 'A' List city and takes pride in climate leadership. For transparency and to encourage our suppliers and contractors to take climate actions, we will be reporting more on Scope 3 emissions in the future. In this reporting, based on the availability of data we have reported on the following Scope 3 emissions:

- Grid Electricity Transmission and Distribution Losses
- Staff Business Travel
- Waste

Less than 1% of emissions come from water use and water treatment. This activity is incorporated in electricity use in buildings.

Target

The plan sets a target for Net Zero Dundee City Council by 2038. The following figure shows the pathways to reaching net zero by 2038. We assume that we will reduce 90% of our emissions by 2038 from 2020 level and will offset the remaining 10% emissions.

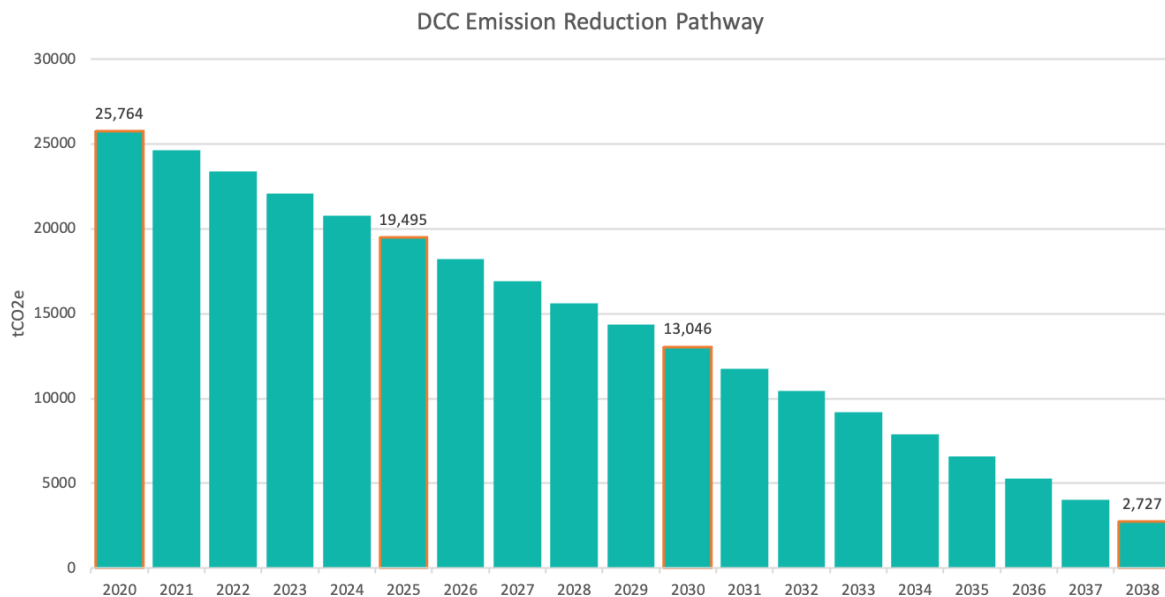


Figure 6: Dundee City Council Emissions Reduction Pathway

Based on the historic trend (see PBCCD report, figure 2) the Council can be fairly confident in an average of 5% emissions reduction per year to reach the target of 90% emissions reduction by 2038 from the 2020 level. We recognise that the decarbonisation of heat in our buildings will play major role in our success of meeting the 2038 target, therefore we are developing a 'Heat decarbonisation plan for Dundee City Council owned non-domestic buildings' to supplement this plan. The heat decarbonisation plan will identify a costed heat decarbonisation pathway for the Council owned non-domestic buildings.

Rationale for Setting a 2038 Target

Local and organisational climate targets are set to align our activities with the global climate ambition, to comply with the Scottish and UK climate change targets and regulations and more importantly to set a pathway that can lead to a desired goal.

The Climate Change Act 2008 sets a target of reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050 in the UK. In Scotland the Climate Change (Scotland) Act 2009 and its subsequent amendment, the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, has set net-zero emissions by 2045 with an interim target of a 75% reduction in emissions by 2030, relative to 1990 levels.

There is therefore a statutory duty for the Scottish public sector to align and support the Scottish Government's target of net zero by 2045 or sooner.

The Heat in Buildings Strategy sets targets for all buildings. This includes a target to make public sector non-domestic buildings net zero direct emissions by 2038 and a goal for the large majority of buildings to achieve a good level of energy efficiency, where technically and legally feasible, by 2030.

The Scottish Government also plans to introduce regulations in 2025 to reduce greenhouse gas emissions from heat in non-domestic buildings in line with the legally binding target to achieve net zero greenhouse gas emissions by 2045.

The direct emissions (heating) from the buildings sub-sector accounted for 54% of total Dundee City Council emissions in 2020. By achieving net zero direct emissions from buildings means Dundee City Council will have reduced 54% of emissions by 2038 from its 2020 level.

Electricity use in the building subsector accounted for 25% of total emissions. We assume that there will be a continued reduction in grid electricity emissions factor which will reduce our electricity emissions continuously, even in the BAU scenario.

2038 is an achievable, science-based target which is aligned with the Paris Agreement and the Scottish Government target, however all actions are dependent on continued support and funding from the Scottish and UK Governments.

Interim Target

An interim target is set for 50% emissions reduction by 2030 from the 2020 level. The plan will be reviewed every two years.



Our Approach

Methodology

The Plan follows the key principle of the Greenhouse Gas Protocol Corporate Reporting Standard and the Scottish Government's Public Sector Leadership on the Global Climate Emergency Guidance. Figure 7 shows the methodology framework applied to develop the Net Zero Transition Plan.

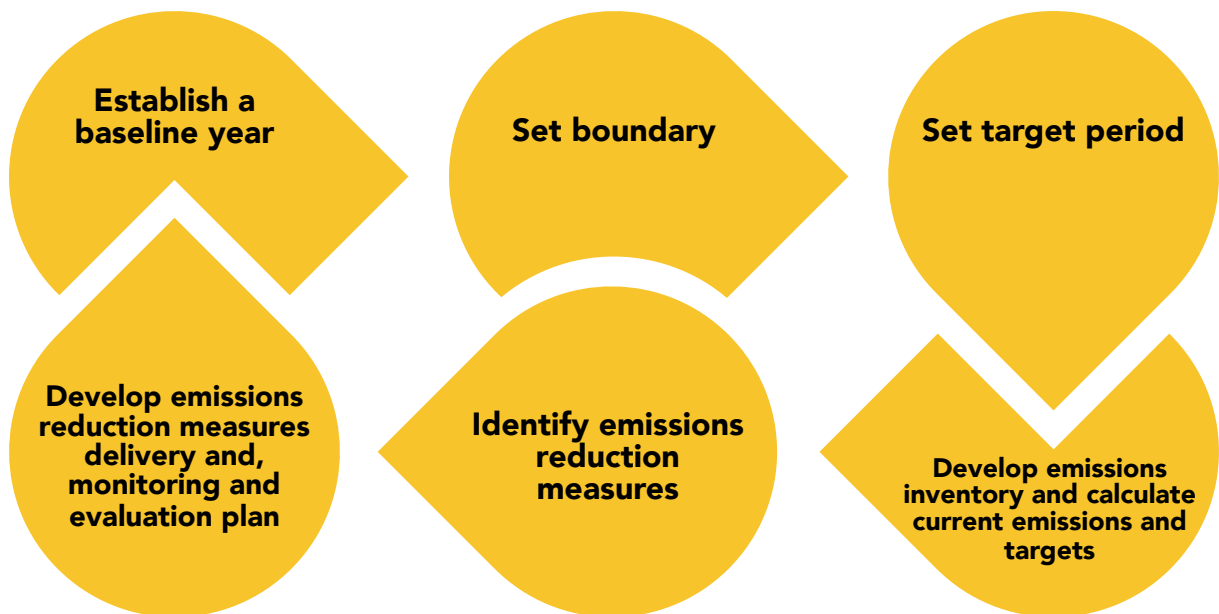


Figure 7: NZTP Methodology Framework

Baseline Year

The baseline year is used as a basis for setting and tracking progress towards a Greenhouse gas target and the year 2020/2021 is chosen as a baseline year for this purpose.

From the comparison of these two years of the COVID19 pandemic, and considering the Council's formal adoption of hybrid working practices, we can see that our emissions have fluctuated but haven't significantly exceeded past trends. Therefore, we are confident that **2020/21** represents our normal year and will be taken as the baseline year for our calculations.

Organisational Boundary

It is difficult to establish an organisational boundary of a local authority for greenhouse gas emissions if we are going to account for all of the Scope 1, Scope 2 and Scope 3 emissions, due to its wider influence on emissions. Therefore, as a first step the plan accounts for the greenhouse gas emissions from **operations over which the Council has control**. This includes all our Scope 1 and 2 emissions and some of our Scope 3 emissions. The plan does not account for greenhouse gas emissions from operations in which the Council owns an interest but has no control.

On this basis, the Council’s operational boundary can be defined as the activities and operations of services operating in the Council’s physical boundary. It is important to note that the Council does not have the full authority to introduce and implement all operating policies at the operation of two of its services - Dundee Health and Social Care Partnership and Leisure and Culture Dundee. In such case, the plan only accounts for emissions from a source over which the Council has direct operational control.

Operational Boundary

After setting an organisational boundary we are able to determine our operational boundary, which refers to the Council’s operations and activities that are responsible for emissions and which emissions have been accounted for in the plan.

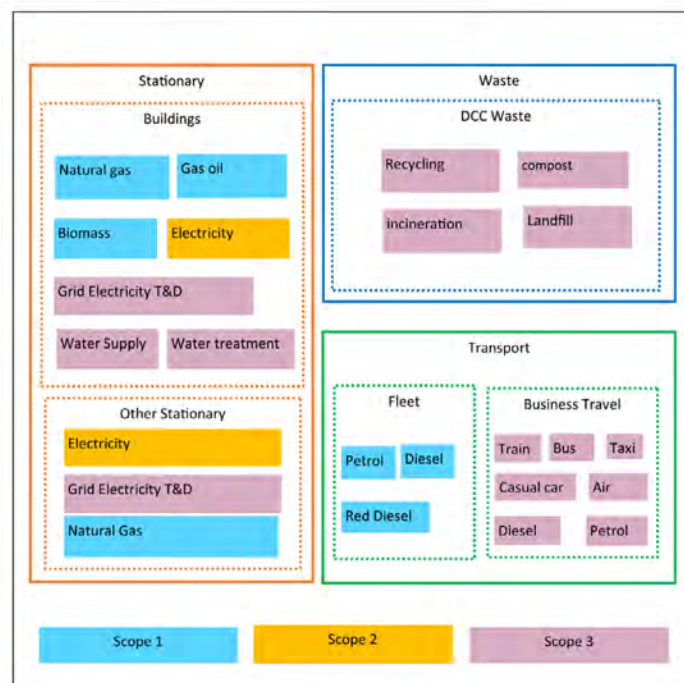


Figure 8: Operational Boundary

Service Workshops

Workshops were held with each Service Management Team to inform the Net Zero Transition Plan, providing the initial steps in co-designing actions. They took the form of brief presentations, audit and discussion of Service contribution to Climate Vision, Awareness and Training, Performance Management and Improvement, Actions, Partnership Working/Stakeholder Engagement, Governance and Accountability. They provided valuable insight into the challenges faced by each Service to contribute to the Net Zero target, as well as innovative solutions and collaborative opportunities to overcoming these. The Sustainability and Climate Change team collated and refined the actions to produce a draft high-level sectoral list of Net Zero Transition Plan (NZTP) actions and more detailed service level actions for the carbon accounting.

Exclusions/Limitations

Housing

- In this carbon accounting, only emissions sources over which the Council has direct operational control has been accounted.
- The Council owned social housing sector has not been accounted, because the tenants have direct control over the operation of those dwellings. We recognise that the Council ultimately has the responsibility to make sure that the Council owned social housing are as carbon neutral as reasonably possible.
- Currently the Council is working towards decarbonising, improving fabric and thermal efficiency and tackling fuel poverty in the Council's social housing stock through various programmes such the Home Energy Efficiency Programme : Area Based Schemes (HEEPS:ABS) and the Energy Efficiency Standard for Social Housing (ESSH2). The aim is to look in detail and present a separate plan for decarbonisation of the Council's social housing stock following completion of the review of ESSH2 next year, which will inform the requirements for the sector.

Procurement

- Supply chain / procurement emissions and construction emissions have not been accounted in this report due to the lack of data. It is acknowledged that the supply chain emissions can account for the biggest proportion of the Council's emissions and the Council has a responsibility to remove and or reduce its supply chain emissions as far as reasonably possible.
- An action has been set for the Council to collect data on its supply chain and construction activities, identify emissions reduction action plans and include those emissions and emissions reduction actions when the current NZTP is reviewed.
- Fugitive emissions such as the equipment leaks from joints, seals, packing, and gaskets; methane emissions from venting; hydrofluorocarbon (HFC) emissions during the use of refrigeration and air conditioning equipment; and methane leakages from gas transport have not been accounted in this report. It is our intention to capture such emissions in the next accounting.

Mitigation Actions We Will Take

Mitigation means reducing the climate change by either reducing the sources of greenhouse gas emissions or by enhancing the greenhouse gas sinks. These actions are subject to availability of funding and support from the Scottish and UK Governments. Appropriate teams will identify funding opportunities as they become available.

Reducing Emissions Sources

We have identified the following activities as sources of Council emissions:

1. Heat in Buildings: Direct fuel use (natural gas, heating oil and biomass used for heat) in Council buildings
2. Direct fuel use (natural gas, heating oil and biomass) in 'Other Stationary' sector
3. Direct fuel use (diesel, petrol and gas oil) in Council fleet
4. Electricity used in Dundee City Council buildings
5. Electricity used in Other Stationary - streetlighting, EV charging and any other stationary Council assets that is not accounted under buildings
6. Staff Business Travel
7. Waste

The above seven sources are categorised as 'Activities' and a separate emissions reduction pathway and target is set for each Activity, to reach net zero.

One more source of emissions is accounted in this report.

1. Grid Electricity Transmission and Distribution Losses

This source is accounted and included in activities 'electricity used in buildings and electricity used in other stationary', however, a separate pathway or emissions reduction target is not set for this because this is not under the control of the Council.

Enhancing the Greenhouse Gas Sinks / Offsetting

This plan acknowledges that not all emissions sources can be reduced or removed completely, therefore a certain amount of Council emissions must be compensated by enhancing the greenhouse gas sinks that accumulate and store these emissions. Examples of greenhouse gas sinks are forests, wetlands, rivers, sea, peatlands etc. By enhancing the greenhouse gas sinks we can remove the emissions from atmosphere and lock-in carbon in different forms such as in forest in the form of timber. The process of enhancing greenhouse gas sink is referred to as offsetting in this plan.

In this plan an emissions reduction target and an offsetting target for each Activity is set below.

Due to lack of data and resource, full offsetting plans and pathways have not been developed in this plan. A full offsetting plan identifying the offsetting opportunities (greenhouse gas sinks) in or near Dundee, commercial and regulatory issues etc will be developed in the next plan.

Stationary

The mitigation plan for the stationary sector has been divided into the following activities:

1. Heat in Buildings
2. Electricity in Buildings
3. Natural Gas in Other Stationary
4. Electricity in Other Stationary

Heat in Buildings

Heat in building generally refers to the natural gas used for space and water heating in the Council buildings. This is the Scope 1 (direct) emissions and the biggest single emissions source for the Council accounting for 54% of total emissions. There is a small proportion of gas oil and biomass used for heating some Council buildings which is merged in this activity. Apart from direct fuel use, the communal heating systems accounting for 4.6% of total emissions (see figure 4, emissions by property type) are also accounted in this activity. As most of the communal combined heat and power (CHP) plants are new, we expect them to run until around 2038, therefore we assume that the ~5% emissions from communal and district heating will remain in 2038 and will have to be compensated by carbon offsetting or insetting.

Target	Net Zero Direct emissions(Heating) by 2038
Current natural gas (heating) emissions	13,893 tCO ₂ e
Emissions reduction target	95 % reduction by 2038 from 2020 level
Yearly reduction required	-5.3%

Heat in Buildings – Organisational Actions

Action	Heat in Buildings	Responsible
OH1	Develop a fully costed heat decarbonisation plan considering the retrofit, heating systems, renewables, management and storage opportunities for the Council owned and operated non-domestic buildings.	Energy Management, City Development
OH2	Continue to improve the fabric and thermal energy efficiency of the Council buildings through energy efficiency retrofit.	
OH3	Replace existing natural gas, coal and oil heating systems with low or zero carbon heating system (heat pumps, solar thermal and hybrid or combined systems).	
OH4	Continue to connect the Council buildings to existing or new heat networks.	
OH5	Install smart and flexible heating systems combining energy storage (battery and thermal storage) and on-site renewables	
OH6	Continue to identify and implement appropriate smart thermal control, energy management and behaviour change in the buildings.	
OH7	Consider the outputs of the Local Heat and Energy Efficiency Strategy (LHEES) and Local Area Energy plan (LAEP) to identify and pinpoint the Council buildings suitable for connecting to larger (city-wide) heat networks.	
OH8	Establish the local leadership for the management of heating systems in multi-purpose, multi-occupancy and PPP buildings.	

Electricity in Buildings



Electricity in building refers to the use of grid electricity in Council buildings. This is Scope 2 (indirect) emissions and the second biggest source of emissions, accounting for 25.2% of the total emissions. The increased renewable electricity UK generation, primarily from wind, is resulting in an average annual decrease of ~7% in the electricity grid emissions factor in the last decade and we can assume this trend will continue in future. Considering the grid decarbonisation trend and the actions below, we assume that the Council will reduce emissions from electricity in buildings by 95% by 2038 from 2020 level.

Target	Net Zero Direct emissions(Heating) by 2038
Current electricity emissions	6,534 tCO ₂ e
Emissions reduction target	95 % reduction by 2038 from 2020 level
Yearly linear reduction required	-5.3%

Electricity in Buildings - Actions

Action	Electricity in Buildings	Responsible
OE1	Advance the energy intensive appliances' energy efficiency in the Council buildings through energy efficiency upgrades, maintenance and replacement where applicable.	Energy Management, City Development
OE2	Extend appropriate smart lighting and appliance control, energy management and behaviour change in the buildings.	
OE3	Establish the local leadership for the management of appliances and lighting in multi-purpose, multi-occupancy and PPP buildings.	
OE4	Install on-site renewables (solar PV) and energy storage (batteries and thermal storage) in the buildings where feasible.	
OE5	Continue to replace existing inefficient appliances and products with higher energy rating appliances and products where possible.	

Other Stationary Sector Decarbonisation Pathways

Other Stationary Sector - Natural Gas

Around 1% of the total Council emissions comes from natural gas used in 'Other Stationary' sector. The activities include certain appliances that can't be classed as or related to buildings, occasional water pumps, odd plants, cemetery etc. This activity is classed as Scope 1 (direct) emissions.

Target	Net Zero Other Stationary Direct (Natural Gas) emissions by 2038
Current emissions	137 tCO ₂ e
Emissions reduction target	95 % reduction by 2038 from 2020 level
Yearly reduction required	-5.3%

Other Stationary Sector - Electricity

The electricity emissions from 'Other Stationary' sector accounts for 6.7% of total Council emissions. This activity is classed as Scope 2 emissions and comes primarily from Streetlighting and EV charging. The Council has almost completed the Streetlighting upgrading with the latest available technology and there is virtually no emissions reduction possible from further projects. On the other hand we assume that the emissions from EV charging will grow in the coming years. We also consider that there will be a continued decrease in grid electricity emissions factor in future. Based on these three assumptions we can predict that although some of our EV charging related emissions increase and existing streetlighting emissions will be compensated by decrease in grid emissions factor, there will still be around 78% emissions remaining by 2038 which needs to be offset.

Target	Net Zero Other Stationary (Electricity) emissions by 2038
Current emissions	1,729 tCO ₂ e
Emissions reduction target	22% reduction by 2038 from 2020 level
Yearly reduction required	-1.2%

Other Stationary Sector – Actions

Action	Other Stationary Sector	Responsible
OS1	Continue to install smart and flexible systems combining energy storage and onsite renewables in car parks and EV charging hubs.	Energy Management, City Development
OS2	Replace existing natural gas, coal and oil system with low or zero carbon system where possible.	
OS3	Continue to identify and implement appropriate smart control, energy management and behaviour change.	
OS4	Continue to upgrade lighting with more efficient lighting system, where appropriate.	

Transport



The mitigation plan for Transport sector has been divided into the following activities

1. Fleet
2. Business Travel

Fleet Decarbonisation Pathways

Fuel use by Council owned ICE vehicles is reported as fleet emissions and in terms of activity is classed as Scope 1 emissions. Fuel use by the Council fleet is the third largest source of emissions accounting for 10% of the total Council emissions. The Council has made a significant progress in its aim to have all small vans and cars EV. Currently 73% of cars (80 out of 109 cars), and 14% of vans (72 out of 494 vans) are EV. Based on the fleet decarbonisation plans we have set a target to remove 95% of emissions from fleet. This target is, dependant on the electric HGVs and construction plant costs reducing to competitive levels.

Target	Net Zero direct (fleet) emissions by 2038
Current total emissions	2,489 tCO ₂ e
Emissions reduction target	22% reduction by 2038 from 2020 level
Yearly reduction required	-5.3%

Business Travel Emissions Reduction Pathway

Mileage and fuel costs claimed by Council staff for work-related travel are referred to as Business Travel. This activity is classed as Scope 3 (indirect) emissions and accounted for 2.9% of total Council emissions. Decarbonisation of this activity is largely dependent on external factors such as public EV ownership, decarbonisation of public transport, employee behaviour change, incentives etc. The Sustainable Transport and Roads team at the Council forecast that the public EV ownership will be 43% in 2030, 72% in 2035, 91% in 2040 and 100% in 2045. Public EV ownership should correlate to the same emissions reductions from employees' vehicles used for business use therefore we have set a target of 80% emissions reduction by 2038 from this activity.

Target	Net Zero business travel emissions by 2038
Current emissions(tCO ₂ e)	674
Emissions reduction target	80% reduction by 2038 from 2020 level
Yearly reduction required	-4.4%

Actions: Transport Sector

Action	Other Stationary Sector	Responsible
OT1	Continue to replace existing ICE cars and vans, diesel refuse trucks and minibuses with low emissions vehicles.	Fleet Manager, City Development
OT2	Expand EV infrastructures to support the increasing numbers of EV fleet.	
OT3	Expand active travel infrastructure throughout the City.	Senior Manager – Transportation, City Development
OT4	Incentivise the use of public transport.	
OT5	Domestic flights for business travel only when no other options possible.	

Waste Emissions Reduction Pathway

Although waste currently accounts for around 1% of total Dundee City Council emissions, decreasing waste can have a significant wider influence in reducing procurement and supply chain emissions, construction emissions and embedding a circular economy. We aim to reduce 70% of emissions from this activity. But due to lack of data the confidence on this target is low. We have acknowledged this factor and aim to improve the waste data and reset the target in future.

Target	Net Zero Waste emissions by 2038
Current waste emissions(tCO ₂ e)	309
Emissions reduction target	70% reduction by 2038 from 2020 level
Yearly linear reduction required	-3.9%

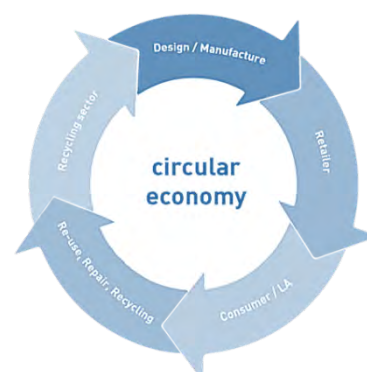
Actions: Waste

Action	Waste	Responsible
OW1	Identify further opportunities for reducing the generation of waste in Council facilities/buildings/premises.	Waste team, Neighbourhood Services
OW2	Extend waste awareness campaigns across schools, businesses, universities and communities.	
OW3	Identify baseline data for Council waste production.	
OW4	Reduce food waste in food provision services in partnership with Tayside Contracts.	
OW5	Ensure full recycling facilities are available in all Council buildings.	



Procurement/Circular Economy

Our current linear economic model (take, make and dispose) is inherently unsustainable, leading to price volatility, reduced access to finite raw materials and rising waste disposal costs. In Scotland, 80% carbon footprint comes from goods and services we consume. This includes the heat and energy required to grow, make, process, transport and provide them.



The circular economy offers an alternative model based on responsible production where businesses which supply products and services get the maximum life and value from the natural resources used to make them through design, recovery and regeneration. The goal of a circular economy is to design out waste.

Local Authorities have a key role to play in enabling the transition to a Circular Economy both internally and externally with their responsibility in delivering public services across sectors; in particular:

- Responsibility for the needs of residents, visitors and businesses
- Local employment
- Investment and access to funding streams
- Procurement
- Embedding local strategy and policy levers
- Existing local stakeholder networks
- Climate emergency declarations, net zero agenda
- Influence over consumers

Procurement is one of the biggest areas we can influence this transition; by asking different questions, suppliers can be encouraged to redesign their products and closed loop value chains can arise. In turn, this can result in efficiency and cost savings for the Council as well as a reduction in our indirect (Scope 3) emissions associated with our purchasing of goods and services.

How does Circular Economy link to Carbon and Net Zero?

The Circularity Gap Report 2021 states that a business-as-usual approach will result in **65 billion tonnes** of GHG emissions in 2030, leading towards a **3°C** rise in global temperature; globally, we are using **100 billion tonnes** of materials/year. However, by doubling global circularity from 9% to 17% there is potential to reduce global emissions by **32%** by 2032 and help ensure we steer well **below a 2°C** temperature rise.

The bulk of most organisation's carbon emissions are in their supply chain. Currently, these emissions relating to procurement are currently not captured or reported, however under the new PBCCD reporting guidelines, this is now a requirement. We therefore must try to estimate our Scope 3 emissions related to purchasing.

This carbon accounting exercise will involve scrutinising processes, holdings and supply chains to work out where they are being most wasteful with carbon, then taking action to reduce this carbon. This should lead to significant reductions in carbon pollution from businesses activities, and potentially significant cash savings.

Circular Strategies

There are nine recognised strategies to help develop and integrate the circular economy:



A carbon accounting exercise will help to identify opportunities to embed these strategies across services and realise the benefits of doing so.

Opportunities of a Circular Approach

The benefits of a circular approach are far reaching, creating fair, sustainable employment, reducing waste and enhancing communities. Specific benefits of embedding circular principles across services include:

- Reuse existing assets - saving costs on disposal
- Reduced cost through equipment re-use and sharing
- Lower building operating costs by considering long term management at the design stage
- Reduced costs around rationalisation of building assets
- Reduced costs through life extension of materials and products
- Alleviate potential raw material supply risks
- Innovation - new products, technologies and services; business opportunities
- Creates new jobs
- Environmental benefits - reduced waste and pollution

Circular Procurement Actions We Will Take

Action	Circular Procurement	Responsible
OP1	Map procurement activities through a carbon accounting exercise to identify Scope 3 emissions and carbon hotspots in key spend areas.	Procurement Team, Corporate Services
OP2	Establish a Corporate Procurement Strategy Group (CPSG) that will lead on work on Scope 3 emissions in line with the Net Zero Transition Plan.	
OP3	Implement policies to ensure sustainable materials and design in construction i.e., a whole life costing approach.	
OP4	Develop tender process to include net zero criteria for companies bidding.	
OP5	<p>Deliver the Council’s Community Wealth Building Action Plan to “use public procurement to shape the market around improved sustainability and low carbon”</p> <ul style="list-style-type: none"> • Provide the Procurement team training in Sustainable Procurement policy and practice. • Explore opportunity to incorporate an environmental weighting into Council contracts at scale alongside support for generative zero or low carbon suppliers in the city. 	

Carbon Accounting by Service

The Council will begin a process of carbon accounting for each service over the next two years with the aim of working towards setting an annual target for reducing our carbon emissions for each service in order to reach the Net Zero target by 2038. This **carbon budget** will work as a governance system to drive effective implementation of actions to deliver the Council's targets in the Net Zero Transition Plan.

Carbon Accounting Summary

By recommending emissions reduction actions for each Service and measuring the carbon emissions annually, we will gain a better understanding of how the pathway to Net Zero will progress.

When in place, Dundee City Council's Carbon Budget will restrict the total amount of greenhouse gases that can be emitted by the Council and its Services annually from an agreed date. The carbon budget will be disaggregated by the Council's seven Services and by the emissions sources and activities.

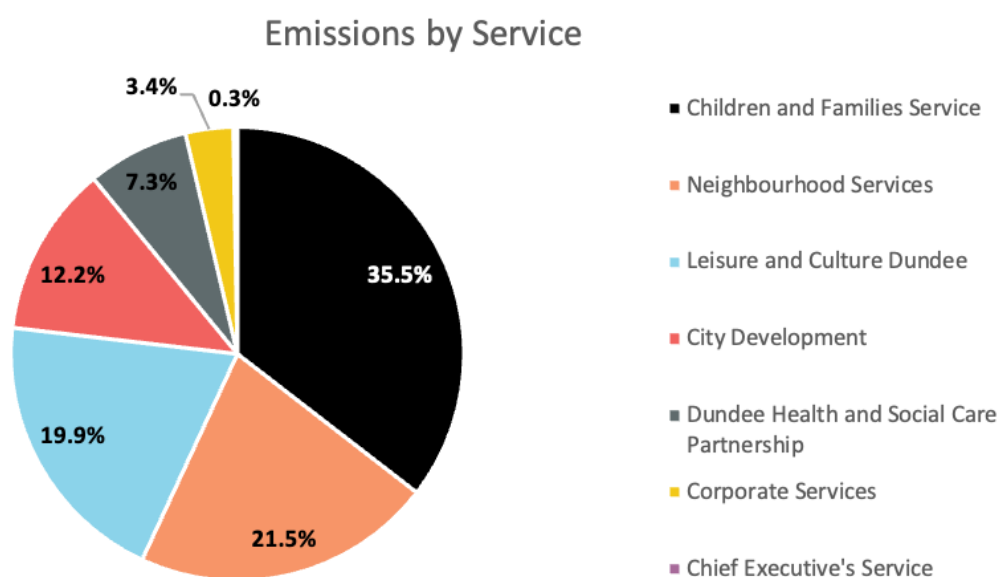


Figure 9: Percentage Of Emissions by DCC Service

To begin this process, each Service is provided with the baseline accounting of the amount of CO₂e each Sector, Sub-sector and Activity under their operational control is attributed. A pathway of emissions reduction is suggested for each Service by each emissions source. Then a list of actions to reduce emissions to remain under the allocated annual carbon budget is recommended.

The Scope of the Council Carbon Accounting includes:

1. Annual reviews to track progress and adjust figures as carbon accounting evolves.
2. After a set period, align the Council’s annual carbon budget with its annual financial budget.
3. Provide a governance structure to the organisational climate actions.
4. Allocate a fair responsibility to Council Services based on their contribution to the organisation’s total emissions and their operational power and influence.
5. Encourage Services to align their financial spending to their own carbon budget.

It is worth noting that although we can calculate the total emissions by source of emissions for each Service and provide the pathways and required action for reaching net zero by each source, in this carbon account, we have not been able to calculate the emissions saving from each of the proposed actions.

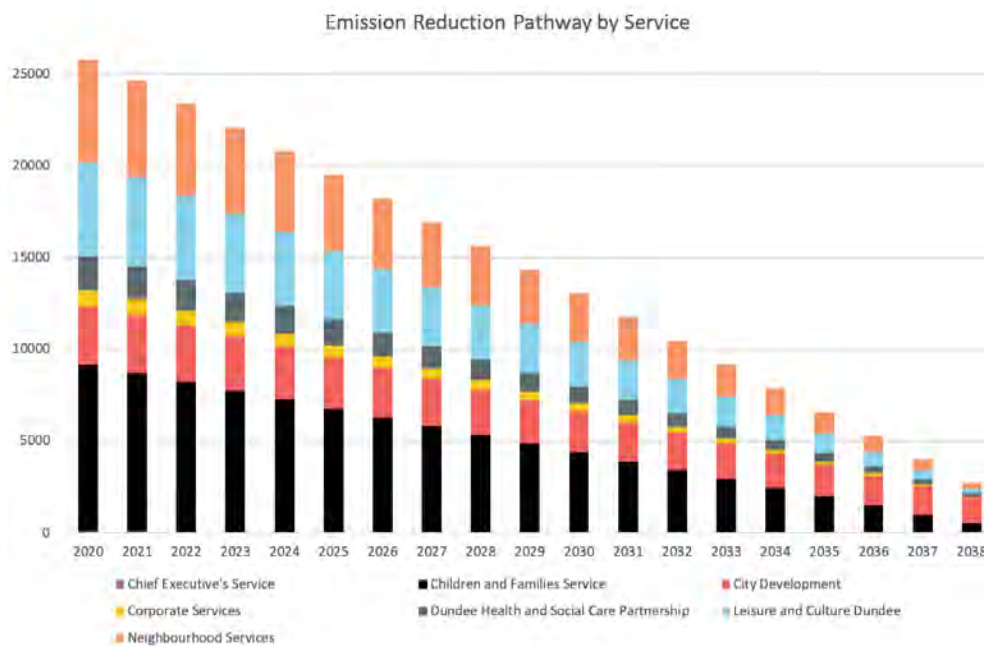


Figure 10: Proposed annual carbon budget by Dundee City Council Services

For recommended actions for each Service, please see Appendix A.

Building Our Climate Resilience

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. The increased temperatures, rainfall and number of intense storms that will be experienced in Dundee will impact service delivery, buildings, infrastructure, communities and the natural environment. Embedding climate resilience strategies across the organisation will reduce risks and vulnerability to these unavoidable impacts as well as provide many benefits, including business continuity, improved health and wellbeing, enhancing biodiversity and protecting our natural environment, cleaner air, food security and many new employment opportunities.

As well as the desire to avoid the excessive costs of the impacts of climate change on our organisation, the local economy, our communities and our environment, the Council has a commitment under the EU Covenant of Mayors for Climate and Energy to develop an action plan that encompasses adaptation and a statutory duty under the Climate Change (Scotland) Act to deliver and report on our adaptation programme.



Image: Broughty Ferry Flood Protection Scheme and Active Travel Scheme

Climate Risk and Vulnerability Assessment (CRVA)

To estimate how this changing climate would impact the Council and wider city a Risk and Vulnerability Assessment was carried out in 2018 that involved a series of sector specific workshops in a multi-agency approach with public, private and community organisations that focussed on the impacts on 10 policy sectors shown below.

<p>Buildings</p>  <p>Increased costs for cooling, insulation, repair and maintenance.</p>	<p>Transport</p>  <p>Damage to infrastructure, higher maintenance cost, impact on mobility.</p>	<p>Energy</p>  <p>Damage to infrastructure and power generating facilities.</p>	<p>Water</p>  <p>Water scarcity, drought, water pollution, impacts on flora and fauna.</p>	<p>Waste</p>  <p>Damage to waste management infrastructure. Site access and service disruption. Resource Scarcity.</p>
<p>Land Use Planning</p>  <p>Urban heat island effect, floods, surface water and coastal.</p>	<p>Environment & Biodiversity</p>  <p>Ecosystem degradation, species migration, insect infestation, habitat loss, access to food.</p>	<p>Health</p>  <p>Increased disease, injury, heat related illness, vulnerability during extreme weather.</p>	<p>Civil Protection & Emergency</p>  <p>Increased number of disasters/deployments, increased insurance costs.</p>	<p>Tourism</p>  <p>Closure of attractions, increased maintenance costs, resource scarcity and supply chain issues.</p>

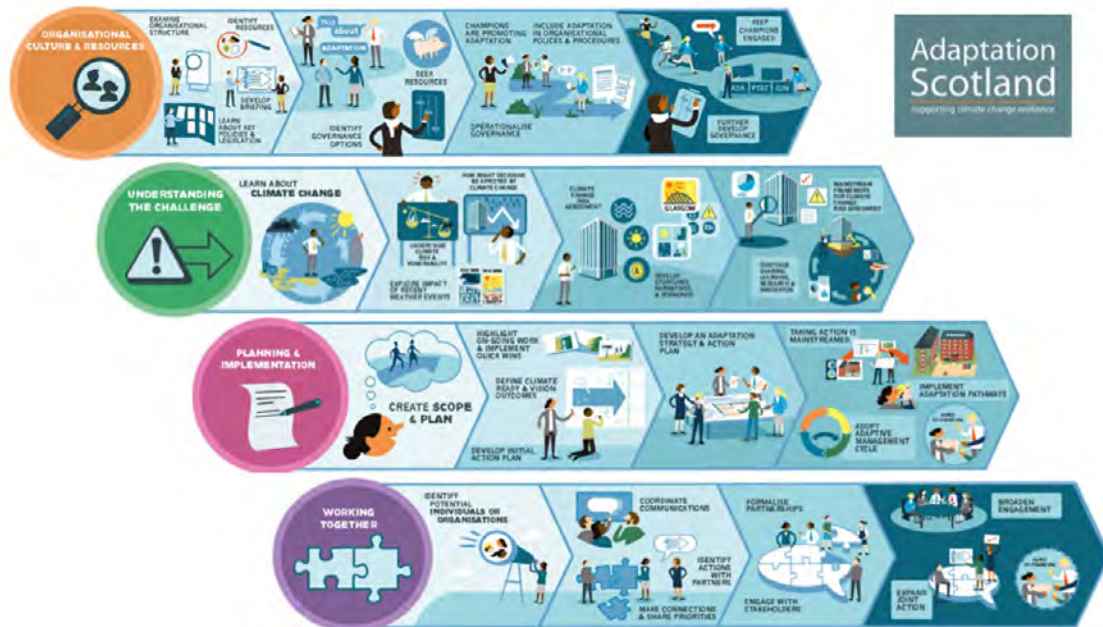
The output from this 2018 CRVA was captured and translated into the Dundee Climate Action Plan and with 21 actions including the Biodiversity Action Plan, Food Growing Strategy, Green infrastructure Projects, fabric improvements in buildings and local health and well-being as well as food security.

Embedding Climate Resilience Across Our Organisation

With the organisational focus of this Plan, there is an opportunity to embed climate resilience of people, land, infrastructure, and buildings across all our Services. To achieve this, we will refresh the Climate Risk and Vulnerability Assessment to reflect:

- a) our increased understanding of risk since the COVID-19 epidemic;
- b) the increased urgency of the climate emergency;
- c) the broader expertise we now have access to through our expanded networks and partnership working as well as new tools that are available.

To refresh the Climate Risk and Vulnerability Assessment we will utilise support offered by Adaptation Scotland, a programme funded by the Scottish Government offering research, tools and resources. The Adaptation Capability Framework, (diagram below) will be used as a guide to increase our adaptation response.



The Framework describes several tasks to develop these capabilities over four stages from starting to mature to help guide public bodies in embedding adaptation across services. We have conducted a Benchmarking exercise with internal officers to understand where we are on the Framework and identified several steps to help us progress through the capabilities



Nature-Based Solutions

Nature-based solutions (NBS) will be at the heart of our adaptation response, encompassing actions to protect, sustainably manage, or restore natural ecosystems, through planting and landscaping.

The Broughty Ferry Dune Restoration is a prime example of an NBS, where natural measures to improve flooding also enhances biodiversity.

In March 2023, a Natural Capital Baseline Assessment of Dundee was carried out as a starting point to future adaptation planning. This provided a full account of the ecosystem services and biodiversity in the city’s green space, helping to identify opportunities for carbon storage and sequestration, soil erosion prevention, flood risk reduction, important areas for pollinators, important biodiversity habitats and potential connectivity.

This will inform “Liveable Neighbourhoods” in Planning, where areas are co-designed with communities to be more people-centred and more ‘liveable’; safe, healthy, inclusive, attractive places with clean air, quality green spaces that are easy to get to without a car and community focussed.



Resilience Actions We Will Take

Action	Resilience	Responsible
R1	Identify a lead from each Service Area to form a Climate Resilience Working Group and provide the necessary training to allow them to apply adaptation in their service.	Sustainability and Climate Change Team, City Development
R2	Undertake a follow up Natural Capital Baseline Assessment in March 2026 to monitor the impact of interventions on ecosystem services in Dundee.	
R3	Update the Climate Risk and Vulnerability Assessment, identify priorities for action and refresh the adaptation plan.	
R4	Apply Adaptation Scotland’s Workplace Toolkit across All Service Areas.	
R5	Work with regional partners to develop Tayside Adapts – a regional approach to adaptation.	

Just Transition

The effects of climate change disproportionately affect vulnerable groups in society and can exacerbate economic and other social inequalities. As a public sector organisation, we have a responsibility to ensure that our Net Zero Transition Plan reflects how we will take account of its implications for people, including employees and the wider community.

This plan endeavours to be fully inclusive and benefit the most vulnerable by anticipating, assessing and addressing the social risks of the transition; identifying and enabling the social opportunities of the transition; and ensuring meaningful dialogue and participation in net zero planning.

Climate Change will have a greater impact on the more vulnerable members of society as shown on Dundee's flooding vulnerability map below.

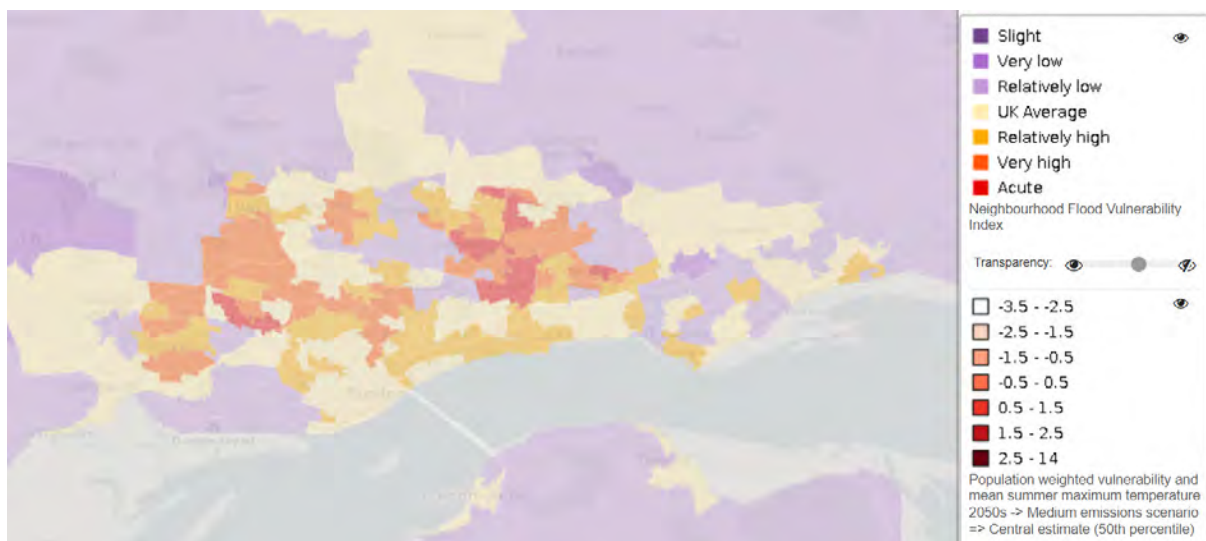


Figure 11: Dundee's Flood Vulnerability Map, taken from www.climatejust.org.uk.

The neighbourhoods with high flood vulnerability, map quite tightly onto Dundee's SIMD (Scottish Index for Multiple Deprivation) areas and most of Dundee will be affected similar or worse to the UK average. These households tend to be less prepared and without the necessary resources to fix damage caused or deal with large weather events. There are also issues around physical and mental health, plus contamination, infection, and other hazards such as mould if dampness is not addressed.

In addition, many of the jobs and skills that exist today will be redundant in the future as technologies change, for example, increased renewables, electric vehicles and digitisation of services. It is therefore vital to ensure that the current and future workforce have access to green skills training.

The current cost-of-living crisis has been exacerbated by rising energy costs; a just energy sector transition will provide a fairer energy system for all. Low carbon renewable energy production and/or export must benefit local communities.

A Just Transition, where we build economic, health and wellbeing resilience amongst the entire population must be at the core of the Net Zero Transition Plan.

Just Transition Actions We Will Take

Action	Just Transition	Responsible
JT1	Explore how participatory budgeting could align with community wealth building.	Procurement, Corporate Services Communities, Neighbourhood Services
JT2	Monitoring the impact of just transition in support of socio-economic gaps.	Chief Executive Services
JT3	Delivery of City Plan and Council Plan recognise just transition.	Chief Executive Services
JT4	Fairness Leadership Panel – unite Just Transition and Fairness Agenda.	Chief Executive Services
JT5	Identify opportunities e.g., MSIP, for future employability skills and retraining the workforce.	Economic Development, City Development
JT6	Consider accessibility of climate related options e.g. adapted bikes.	Sustainability and Climate Change team, City Development

Engaging Our Staff, Communities and Partners

This Net Zero Transition Plan is aimed at Council staff and our organisational ability to influence the wider community.

Research by the Climate Change Committee estimates that more than 60% of emissions reductions will need to come from societal change in order to meet the Net Zero challenge. The latest results from the Scottish Household Survey show that 68% of adults in Scotland now agree that climate change is an immediate and urgent problem, up from 46% in 2013. However, this concern is not matched by an increase in people acting on climate change. The challenge is to normalise behaviour that reduces climate change.

The Council will commit to its local outreach and engagement efforts to support local projects and develop local behavioural change campaigns to engage communities and organisations to participate on the cities path to net zero.

Our Staff

Through climate literacy training and associated workshops, climate change and sustainability will become embedded throughout the organisation so that every employee incorporates sustainable practices into their day-to-day. New staff will have sustainability embedded within their job descriptions from the beginning. The integration of green and sustainable skills within job descriptions will be critical moving forward to ensure that the new workforce is equipped to help move the organisation towards a net zero future, and ensure it remains there.



Tracking and Celebrating Progress

A new Carbon Dashboard tool will be developed to share the Council's carbon accounts on the intranet page. The new dashboard will be linked to the Power BI data used to calculate the Council's carbon emissions and will allow staff to see the Council's progress made for reaching net zero. This tool will help to make the carbon data easily accessible to all, so that services can monitor their progress and work towards their reduction targets. It will also link to the actions laid out in this plan, to make them easily accessible.

Climate Literacy

To deliver these objectives, it is essential that Council staff understand the challenge we face from climate change and what we can do about it. To this end, mandatory Climate Literacy Training was developed on the eLearning website. The mandatory eLearning was launched alongside COP26, where managers Grade 13 and above had the opportunity to partake in a bespoke Keep Scotland Beautiful Carbon Literacy training. Approximately 50% of senior managers completed this training and are now carbon certified. For those unable to participate or new to the Council, the eLearning platform will form the basis of their Climate Literacy training going forward. The Council aims to have a carbon literate workforce where all employees have completed their carbon literacy training and feels empowered to act.

To enable Dundee citizens to become climate literate, the Sustainable Dundee website (www.sustainabledundee.co.uk) has been developed. The website contains information for organisations, schools, the public and a community group funding finder. The website was designed to share information on what climate change is, how it will affect Dundee and what we can all do, including inspirational case studies from across the city.

sustainable DUNDEE

About Us Take Action Resources Sustainable Dundee Map Emissions Dashboard Events Case Studies

**Dundee's resource and information hub
to help empower you on your journey to Net Zero**

Organisations Schools Public

Welcome to Dundee's journey to Net Zero

Click on one of the icons above to get started!

An interactive Sustainable Dundee Goals map, linking the UN Sustainable Development Goals to Dundee based initiatives, is embedded within the website.

SUSTAINABLE DUNDEE MAP

The United Nations Sustainable Development Goals (SDG's) are an urgent call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. The 17 Goals are connected, which means that action in on area will affect outcomes in others. Sustainable Dundee is a city-wide initiative to tackle the Climate Emergency locally and is fully aligned with the UN SDG's.

This map gives an overview of local initiatives in relation the UN SDG's

Select a goal on the left to learn about Dundee initiatives.

Our interactive Dundee emissions dashboard can also be accessed, demonstrating the emissions and pathway to Net Zero by 2045, the City-wide target.

Transition plan for Dundee

Emissions 2020
840 kt

100%
of total emissions 2020

Breakdown of emissions 2020
840 kt

Buildings energy use	254 kt
Transportation	232 kt
Unaddressed emissions	204 kt
Energy system	130 kt

Transition pathway 2020-2045
The emissions will decrease from 840 kt (2020) to 376 kt (2045) according to the plan

About

Dundee on the path to net zero

Cities play a vital part in reducing global greenhouse emissions and making a more sustainable future. Our efforts will help meet the shared goal of avoiding the most dangerous climate change by limiting global temperature rise this century below 1.5 degrees Celsius. Our community's shared ambition is to work together and make Dundee one of the world's first climate ready cities.



Staff Travel

To reduce travel emissions an updated Staff Travel Plan has been developed to guide staff on sustainable travel behaviours. The hierarchy prioritises walking followed by cycling, public transport and then the use of electric vehicles.

By facilitating active travel within selected services, the Council will be working on long-term, sustainable practices, which will not only have a positive benefit on emissions but also staff health and well-being.



Schools

Schools act as role models. By engaging pupils in active environmental learning, recycling, circular economy, sustainable IT, energy efficiency, growing projects, and by prioritising active travel not just pupils, but also their parents will be empowered to participate and learn new skills and practices.

Eco-Schools refers to the whole school, pupil-led approach to Learning for Sustainability led by Keep Scotland Beautiful. Many schools in Dundee participate in Eco-Schools and although the vision is to engage all Dundee schools in the Eco-Schools programme, the main emphasis is supporting schools to adopt sustainability in their learning and practices.

A Dundee specific schools resource pack has been created to help schools access local support and information around climate change. Additionally, various activities will take place aligned with national and local events which involve schools to continuously engage those in climate action. For example, during COP26 four Dundee schools were actively involved in beach cleans and workshops to create Moby the Whale; unveiled at the COP26 Hub Fest. Moby the Whale now floats the heights of the Wellgate Shopping Centre as a permanent installation.



It is an aim of this Net Zero Transition Plan that Dundee Schools will become Net Zero Schools, through the adoption of sustainable practices, for example, renewable energy, retrofitting, sustainable food, eco-friendly cleaning practices, zero waste and circular economy.

Schools will also play a critical part in the Just Transition from the perspective of employment potential of future generations. Through changes in the curriculum schools will equip pupils with the skills to partake in the green economy and developing green technology.

Our Communities and Partners

Sustainable Dundee

Sustainable Dundee is the branding for Dundee’s collaborative response to the Climate Emergency; encouraging low carbon living and enhancing nature to help the city achieve its target of net zero emissions before 2045.

The Dundee Climate Leadership Group will provide active leadership on Dundee's Net-Zero challenge, leveraging expertise from across the city to engage and inspire collective ownership and a shared commitment to tackling climate change.



The Sustainable Dundee Network was established following a successful programme of partnership events in Dundee for COP26. The group is a partnership of organisations from across the city and is chaired by the Dundee City Council's Sustainability and Climate Change Team. The purpose of the group is to coordinate and collaborate on public engagement, events and projects that build on the City's Climate Action Plan.

Both networks will continue to expand overtime to ensure city-wide partnership working.

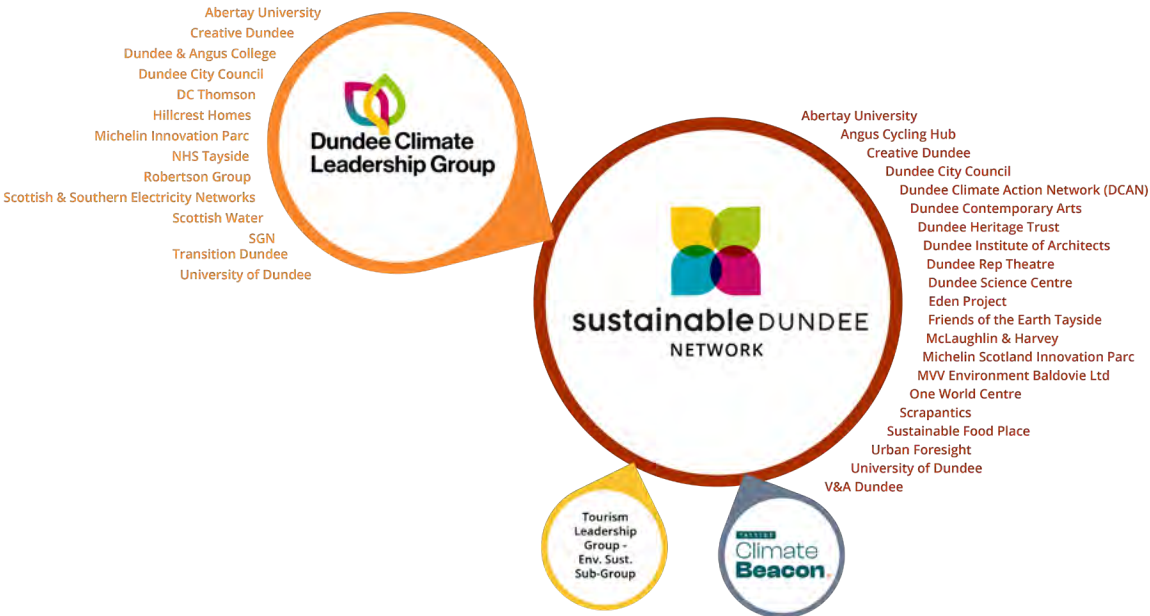


Figure 12: Dundee Partnership Diagram 4.12.2023

Campaigns and Initiatives

The Council events will be held in the most sustainable way possible to lead by example. Events provide a key opportunity to engage visitors in sustainable practices, inspire change and provide opportunities to showcase best practice.

The Council will develop a Sustainable Events Policy which will include sustainable event practices for events of all sizes, which is to be adhered to by all events happening within the Council boundary. This will span across the following categories: energy, water, waste and cleansing, food and drink traders, production, travel, marketing and merchandise, local communities and economy, and work practices.

To continue raising awareness the Council will align city events with national and international events, such as COP26 and Scottish Climate Week as well as local campaigns such as the successful Take Pride in Your City campaign covering local environment quality, recycling, City Centre and Business and Communications. Awareness raising can take place across channels depending on size, such as social media, in-person, online or hybrid events. To increase engagement the Sustainable Dundee Network will support and collaborate. Internally, dedicated staff resources will be developed and shared.



Engagement Actions We Will Take

Action	Engagement	Responsible
E1	Communicate the Net Zero Transition Plan across Council and wider community.	Sustainability and Climate Change Team, City Development.
E2	Maximise opportunities to use the Dundee Climate Fund in support of deliverables for the plan.	
E3	Develop a Sustainable Events Policy for the City.	
E4	Develop topical sustainability awareness campaigns across schools, businesses, universities and communities.	
E5	Facilitate participation in sustainability programmes and campaigns e.g. Take Pride in Your City, Eco-Schools, MSIP Skills Academy and Earth Hour Week.	
E6	Monitor uptake of mandatory climate literacy e-learning for staff, promote topical ad-hoc training courses from external partners to relevant staff.	
E7	Provide opportunities and tools for staff to engage in sustainable living so that all staff are equipped to signpost others.	
E8	Promote Staff Travel plan and integrate staff travel plan on intranet page to improve visibility and usage.	
E9	Develop Carbon Dashboard for intranet pages.	
E10	Continuously update and promote the Sustainable Dundee resources.	
E11	Update the Dundee City Council webpage to integrate Sustainability & Climate Change information on the homepage, linking to the Sustainable Dundee Website.	

Governance, Monitoring and Reporting

Governance

The Council will establish a Net Zero Transition Board to monitor and drive progress in implementing the plan. The Board will comprise senior officers, with other Council officers co-opted as and when required.

The Board will be supported by the Sustainability and Climate Change team, with regular progress reports and emissions dashboard being provided. The Board will in turn report to the Council Committee.

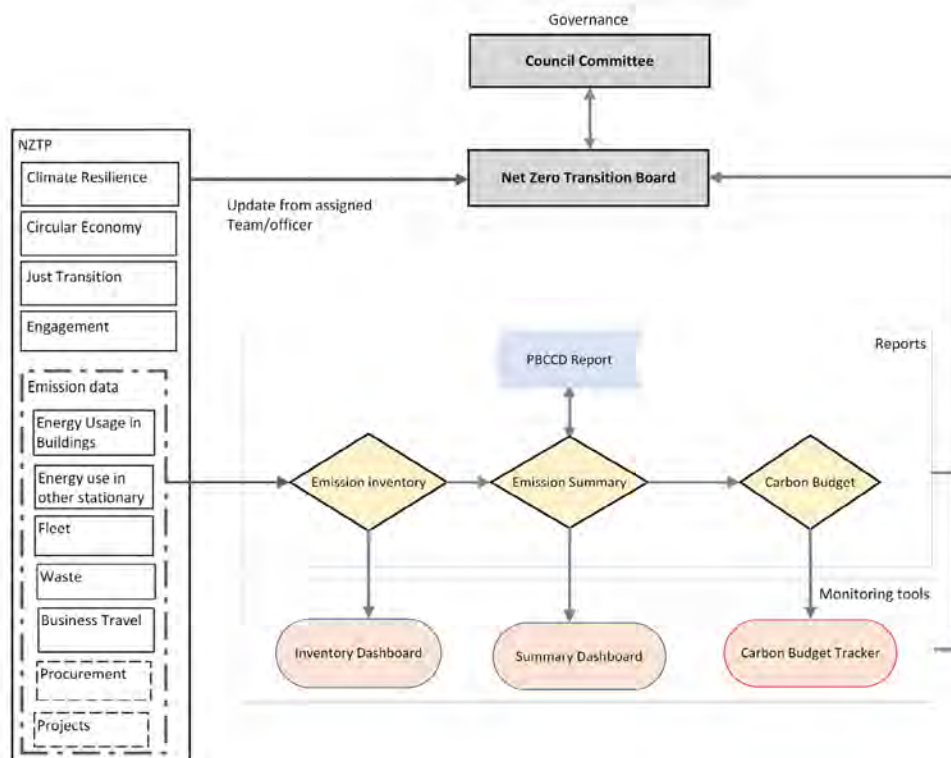


Figure 13: NZTP Governance, Monitoring and Reporting Framework

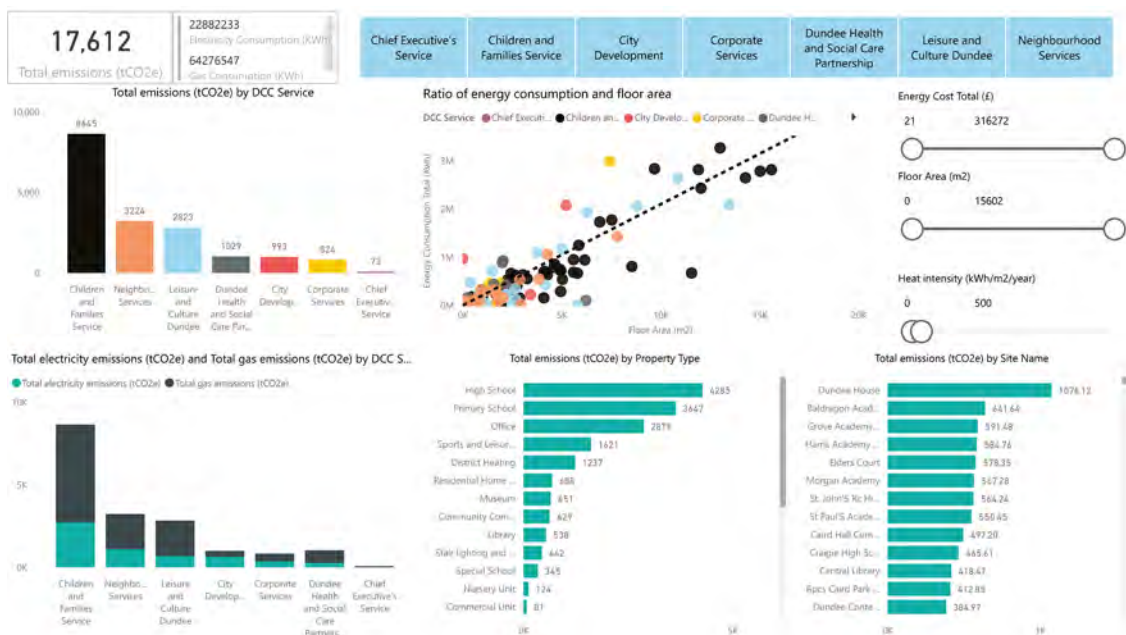
Monitoring and Reporting

PBI dashboard is used to help the effective governance of quantifiable climate actions. For example, relevant teams can instantly identify the office with highest heat intensity in a PBI integrated Web-GIS map and come up with an action to reduce heat demand. A Service Manager can track their progress in the Tracking Carbon Account dashboard. If a team is responsible for providing emissions data, they can also use PBI dashboard to give feedback, spot errors or anomalies.

Emissions Inventory

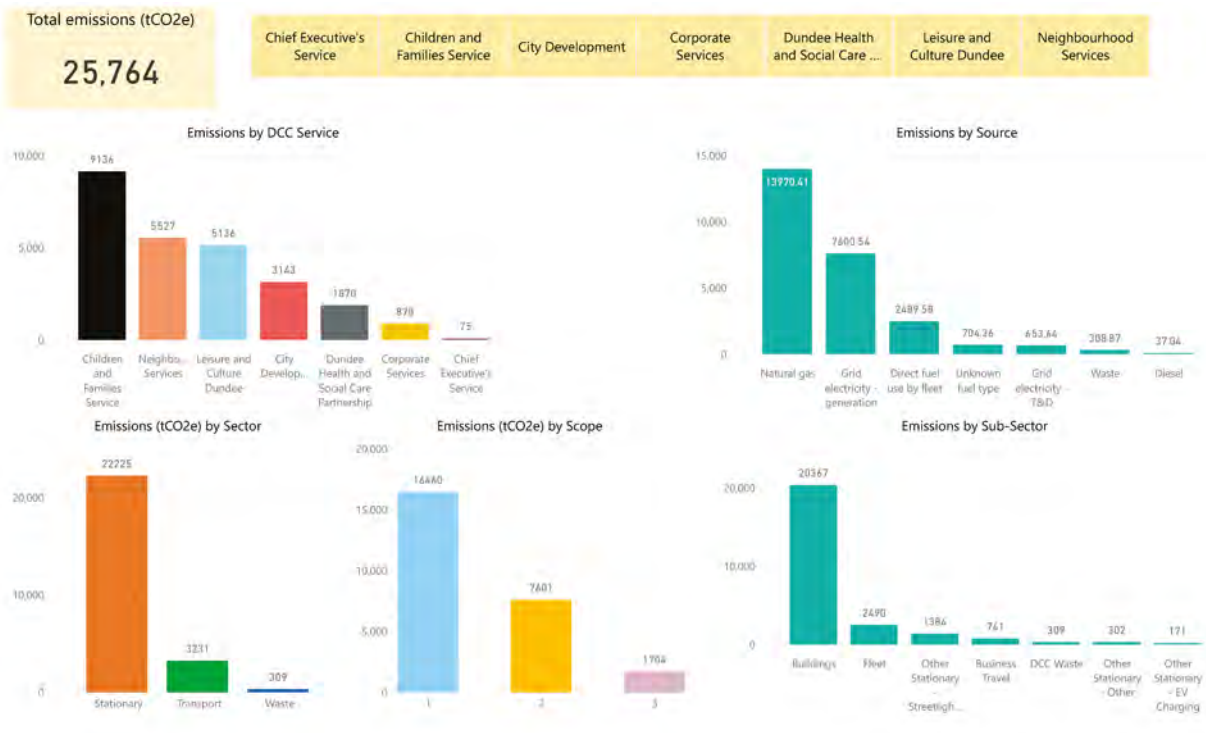
An emissions inventory is created based on the defined organisational and operational boundary. The inventory contains emissions data for the Council in its original form, as received from relevant team and/or service. The data is analysed using selected methodology; the final result is published in an online PBI dashboard, available internally only as this contains the most detailed, raw data.

Procurement and projects data are not included in the current/first emissions Inventory due to lack of data. Emissions Inventory will be evolving and changing as new data and reliable calculation methodologies become available in the future.



Emissions Summary

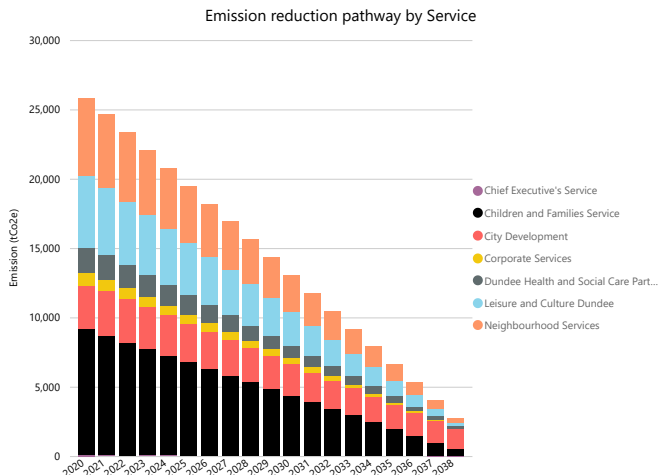
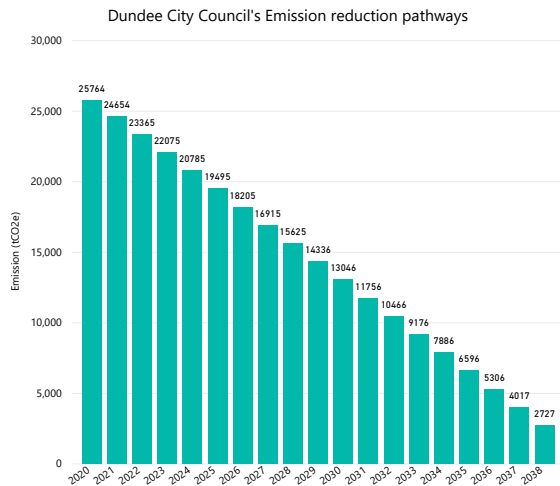
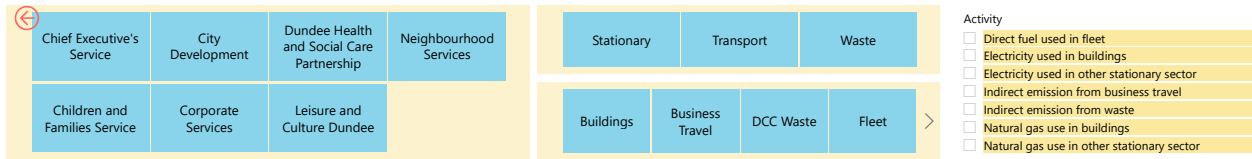
In the next stage the data from inventory is compared and adjusted to align with the statutory PBCCD report. At this stage necessary modelling and additional analysis is carried out to set a new target, adjust figures to accommodate new and/or expanded boundary, and explain trends. The final analysis is summarised in an emissions Summary, and a Summary Dashboard is published online using PBI.



Carbon Account Tracker

Carbon Accounting is the primary tool for governing the Council's organisational climate actions. Each action is assigned to a Service and team, which will be tracked by collecting quantitative (emissions) and qualitative data. Quantitative data will be used to produce an online tracking dashboard.

Based on the emissions Summary the annual carbon accounts will be calculated and published online using PBI. This dashboard is used to track progress of Dundee City Council as an organisation and the progress of each Council Service. It is also used to track progress in different Sectors, Sub-sectors and Activities.



Online Dashboards

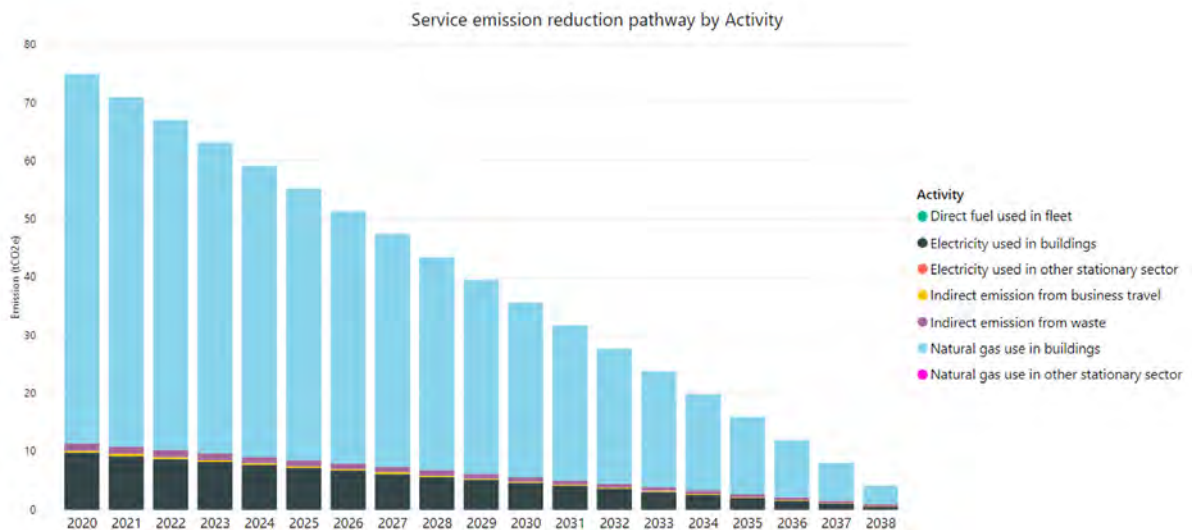
All three dashboards are published online internally. These interactive PBI dashboards can be used by relevant officers/managers for monitoring their progress, extracting emissions data and for decision-making. All dashboards are refreshed at least once a year.



Appendix A Net Zero Transition Plan Actions By Service

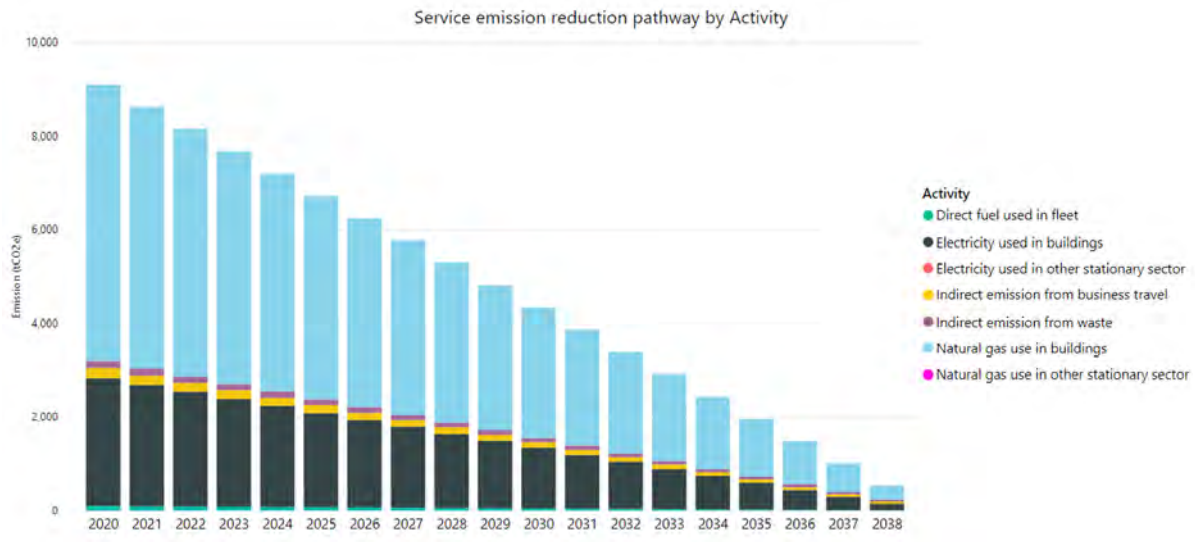
Chief Executive

These actions are subject to funding and resources. Appropriate teams will identify funding opportunities as they become available.



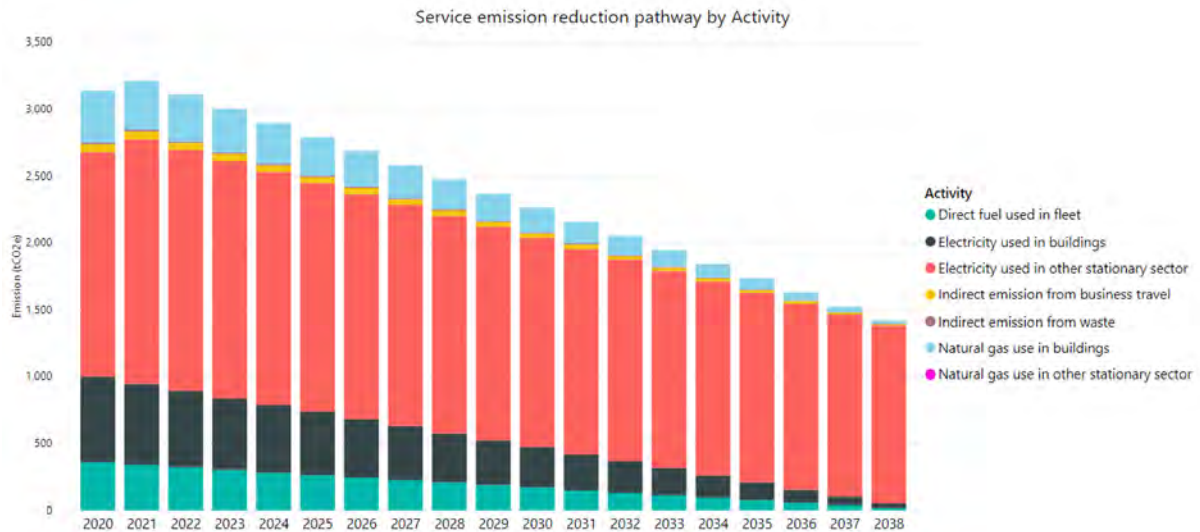
Action	Chief Executive
CE1	Communicate the Net Zero Transition Plan across the Council and wider community.
CE2	Reflect just transition in the next iteration of the Dundee Child Poverty and Fairness Action Plan.
CE3	Include Climate Change and just transition in Budget Consultation.
CE4	Support Fairtrade Forum to ensure the wider sustainability agenda and just transition are reflected.
CE5	Continued promotion of Council reuse hub and other initiatives such as the community wardrobes.
CE6	Integrate Net Zero Transition actions and progress into intranet permanently (For example, PBI Dashboard).

Children and Families Service



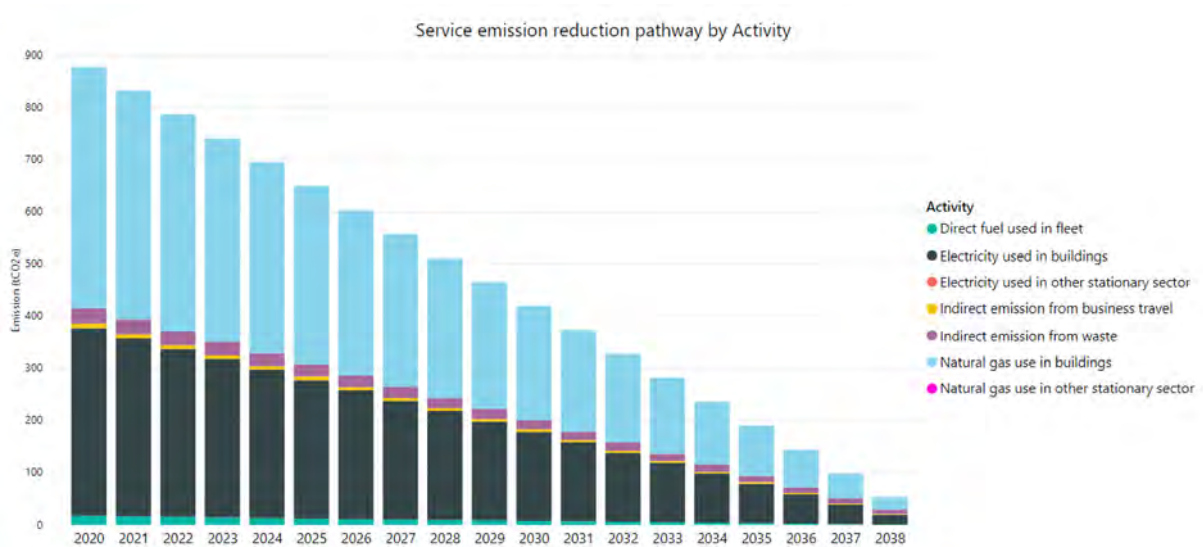
Action	Children & Families Service
CF1	Increase promotion of efficient energy use and heating control in school buildings in partnership with Leisure and Culture Dundee, building managers, Energy Management team and PPP contractors.
CF2	Identify potential reductions in teachers and staff travel by car.
CF3	Implement revised waste education strategy in schools across Dundee to promote waste awareness and positive recycling messages.
CF4	Identify and eliminate single use practices left over from COVID hygiene restrictions.
CF5	Ensure schools have access to sustainable procurement options and training to eliminate unsustainable purchasing practices.
CF6	Promote participation in sustainability programmes and campaigns e.g., Eco Schools, MSIP Skills Academy and Earth Hour week.
CF7	Identify further opportunities to enhance biodiversity and green space in schools including growing opportunities and other nature-based solutions.

City Development



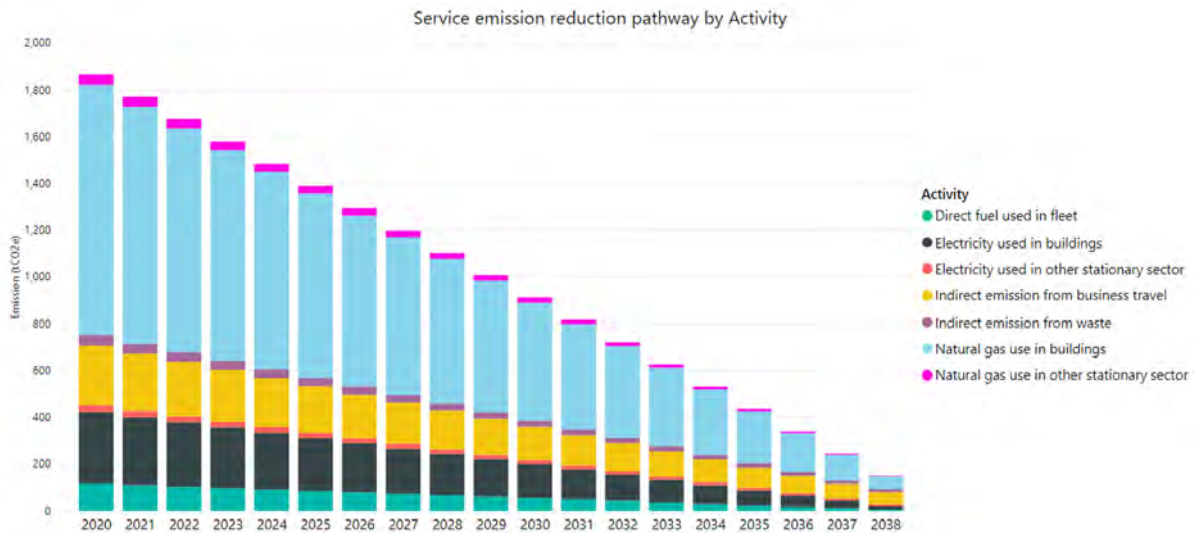
Action	City Development
CD1	Continue to promote efficient energy use and heating control in school buildings in partnership with Leisure and Culture Dundee, building managers, Energy Management team and PPP contractors.
CD2	Identify potential reductions in teachers and staff travel by car.
CD3	Identify schools' procurement purchasing activities for scope 3 emissions calculations.
CD4	Continue to facilitate participation in sustainability programmes and campaigns e.g., Eco Schools, MSIP Skills Academy and Earth Hour week.
CD5	Transition Dundee City Council's fleet of vehicles to zero emission by 2038.
CD6	Create a new Sustainable Transport Delivery Plan that focuses on interventions that reduce carbon emissions and improve sustainability.
CD7	Simplify staff bus travel - digitise ticketing system.
CD8	Develop a Climate Change Adaptation Plan using the 'Adaptation Capability Framework' developed by Adaptation Scotland
CD9	Consider climate hazards in Options Appraisal - embedding climate hazard criteria in our capital projects options appraisals.
CD10	Identify further opportunities for green and blue infrastructure across the city.
CD11	Establish officer Net Zero Transition Group.
CD12	Implement council carbon budget through a staged process beginning with carbon accounting, with a goal of aligning the council's financial budget with the carbon budget.
CD13	Maximise opportunities to use the Dundee Climate Fund in support of deliverables for the NZTP.
CD14	Ensure that the Local Housing Strategy and National Planning Framework 4 (NPF4) are considered in the development of the city's Local Heat and Energy Efficiency Strategy (LHEES) and Local Area Energy Plan (LAEP) and that the Local Development Plan takes into account the LHEES.
CD15	The Councils' Local Development Plan will incorporate measures to address climate change and biodiversity as required by National Planning Framework 4 (NPF4).

Corporate Services



Action	Corporate Services
CS1	Identify and implement appropriate corporate wide policies to support the Council’s net zero target.
CS2	Develop targeted campaign to encourage employees to switch off appliances when not in use and investigate possibility of shutting down specific servers overnight.
CS3	Map procurement activities in key spend areas to identify Scope 3 emissions and identify carbon hotspots. Identify actions to reduce carbon footprint of supply chain.
CS4	Consider tender process to include net zero criteria for companies bidding in line with public procurement rules.
CS5	Reuse/refurbishment of IT equipment, including schools’ devices.
CS6	Extend services of Fuel Well Dundee to provide information to households that are not eligible for fuel poverty benefits.
CS7	Investigate how more services can be digitised and unnecessary data removed to improve efficiency and reduce waste and carbon emissions.

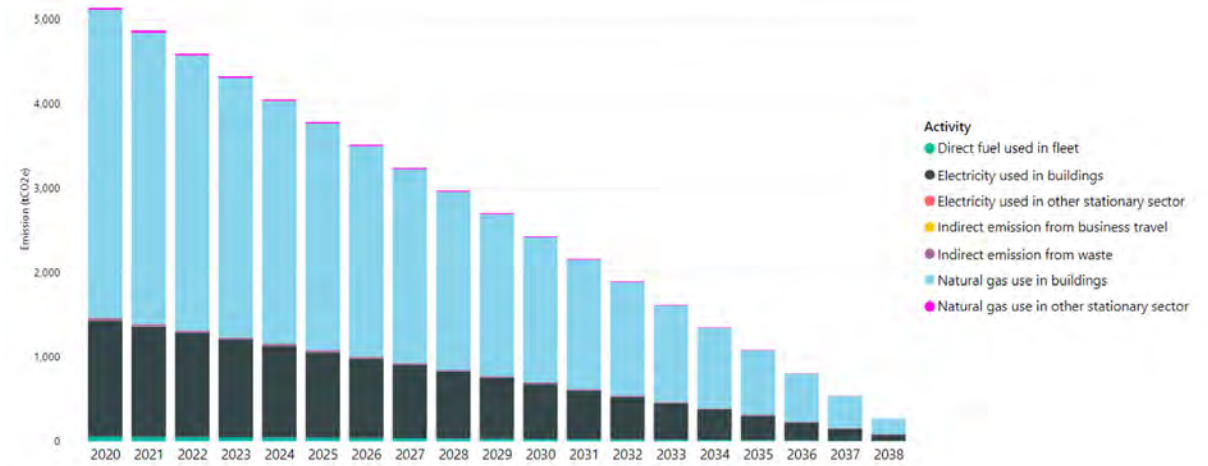
Dundee Health and Social Care Partnership



Action	Dundee Health & Social Care Partnership
HS1	Work with City Development to improve energy efficiency and reduce heat demand in buildings used by Dundee Health and Social Care Partnership.
HS2	Investigate further opportunities for staff to travel more sustainably including walking, cycling and using public transport.
HS3	Work with City Development to increase availability of EV infrastructure for staff usage.
HS4	Work with Tayside contracts and procurement and ZWS to identify food waste and single use item reduction opportunities during meal provision.
HS5	Investigate opportunities to reduce PPE waste at procurement stage.
HS6	Develop staff support for extreme weather events including preparation, response and recovery procedures.
HS7	Engage with communities to link sustainability and cost of living, promote Sustainable Dundee Website and map.

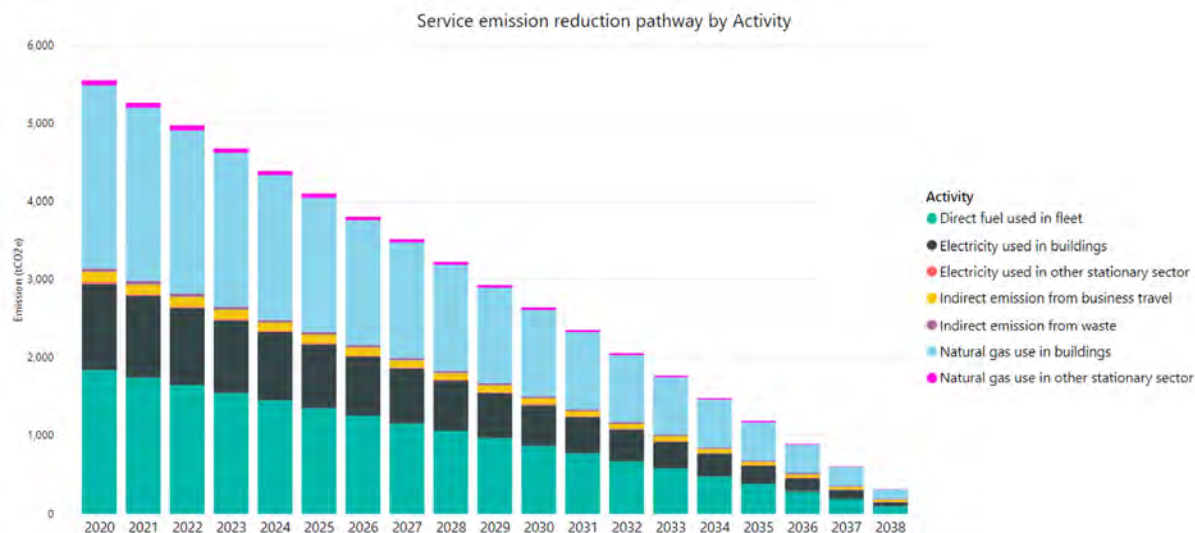
Leisure and Culture Dundee

Service emission reduction pathway by Activity



Action	Leisure & Culture Dundee
LC1	Work with City Development to identify and improve the energy efficiency measure in Sports and Leisure Facilities. Similarly work with City Development and Children and Families Services to identify and implement the energy efficiency measures in multi-purpose school buildings.
LC2	Work with relevant teams to reinstate water fountains in all facilities, ensure full recycling facilities are available in visitor centres.
LC3	Provide opportunities for sharing sports equipment and accessing second hand sports gear, clothes and books etc.
LC4	Identify further opportunities for Nature-Based Solutions on land at L&CD sites e.g., increase biodiversity, tree planting, SUDS etc.
LC5	Encourage and support maintenance, energy efficiency retrofit and protection for city buildings; and historic and cultural environments using guidance available from Historic Environment Scotland.
LC6	Consider accessibility in relation to sustainability e.g., walking and wheeling paths, secure bike parking facilities, EV charging points, etc. at libraries, museums, galleries, parks, and sports and leisure centres.
LC7	Develop skills around protecting cultural assets and built environment from the impacts of climate change.

Neighbourhood Services



Action	Neighbourhood Services
NS1	Investigate further opportunities to maximise existing District Heating Schemes and other low and zero carbon heating within housing stock.
NS2	Continue investment in housing stock to meet Energy Efficiency Standard for Social Housing (EESH2).
NS3	Consider the output from the Local Heat and Energy Efficiency Strategy (LHEES) in Local Housing Strategy.
NS4	Work with the Sustainability and Climate Change team and partners to develop with expand waste awareness campaigns across schools, businesses, universities and communities.
NS5	Increase recycling facilities for Council's offices and schools.
NS6	Develop a reliable and repeatable methodology to calculate baseline data for Council waste generation
NS7	Identify further opportunities for rationalization of fleet. Work with relevant team to transition from fossil fuel / ICE vehicle to EVs.
NS8	Introduce route optimisation software and in-cab devices to all of Dundee City Council's waste management fleet.
NS9	Implement policies to ensure sustainable materials and design in construction i.e., a whole life costing approach.
NS10	Identify further opportunities to increase tree cover and planting.
NS11	Support Community Food Networks, reduce stigma of accessing food.
NS12	Identify further opportunities for Nature-Based Solutions on Council land e.g., increase biodiversity, tree planting, SUDS etc.

Glossary

Adaptation	The adjustment in economic, social or natural systems in response to actual or expected climatic change, to limit harmful consequences and exploit beneficial opportunities.
BEI Baseline emissions Inventory	Identifies and quantifies the main sources of greenhouse gas emissions in a starting year.
Biodiversity	The variety plant and animal life on the planet and the surroundings they live in.
Carbon capture and storage	A process of capturing waste carbon dioxide usually from large point sources, such as a cement factory or biomass power plant, transporting it to a storage site, and depositing it where it will not enter the atmosphere, normally an underground geological formation. The aim is to prevent the release of large quantities of carbon dioxide into the atmosphere from heavy industry.
Carbon footprint	A measure of the carbon emissions produced as a result of an organisation's or service's activities.
Carbon intensity	The emissions per unit of electricity generated (often given in grams of CO ₂ per kWh).
Carbon neutral	Achieved when CO ₂ emissions are balanced by CO ₂ removals over a specified period.
Committee on Climate Change	An independent, statutory body established under the Climate Change Act 2008 to advise the UK Government and Devolved Administrations on emissions targets and report to Parliament on progress made in reducing greenhouse gas emissions and preparing for climate change.
CHP	Combined Heat and Power.
Circular economy	An alternative to a traditional linear economy (make, use, dispose) in which resources are kept in use for as long as possible, the maximum value is extracted from them whilst in use, then products and materials are recovered at the end of each service life.
Climate change	Any change in climate over time, whether due to natural variability or as a result of human activity.
Covenant of Mayors for Climate and Energy	An international alliance of cities and local governments with a shared commitment to accelerate ambitious, measurable climate and energy initiatives that lead to a low-emissions and climate resilient future, helping to meet and exceed the Paris Agreement objectives.

Adaptation	The adjustment in economic, social or natural systems in response to actual or expected climatic change, to limit harmful consequences and exploit beneficial opportunities.
CO₂ Carbon Dioxide	The most common greenhouse gas contributing to human made climate change.
CO₂e	Carbon Dioxide equivalent. A commonly used way of presenting total greenhouse gas emissions as an equivalent amount of CO ₂ . Most typically, the CO ₂ e emissions is obtained by multiplying the emissions of a greenhouse gas by its global warming potential (GWP) for a 100-year time horizon.
Decarbonisation	The reduction or removal of carbon dioxide form energy sources.
Ecosystem	A biological community of interacting organisms and their physical environment.
EfW	Energy from Waste.
Emissions factor	A measurement of CO ₂ emissions intensity per unit of electricity generation in the grid system.
EPC Energy Performance Certificate	Shows the current energy rating and potential energy rating of a property.
EV	Electric Vehicle.
Fossil fuel	Non-renewable energy sources formed from fossilised plants and animals over millions of years such as coals, oil and gas.
ghg	Greenhouse gas that enhances the greenhouse effect and thus climate change.
Heat island effect	Also referred to as the urban heat island effect, whereby the average temperature of an area is higher than nearby rural areas. It is mostly caused by the fact that the materials in urban areas, like concrete, absorb and retain much more heat energy from the sun and then takes much longer to dissipate.
IPCC	International Panel on Climate Change. A United Nations body which evaluates climate change science.
KWh Kilowatt Hour	A unit of energy equivalent to one kilowatt of power expended for one hour of time (1,000KWh = 1MWh). Commonly used in energy use billing.
Net Zero	The balance between the amount of greenhouse gas produced and the amount removed from the atmosphere. We reach net zero when the amount we add is no more than the amount taken away.

