



**One
Planet
Cardiff**

Our vision for a **Carbon Neutral City by 2030**



This document is available in Welsh /
Mae'r ddogfen hon ar gael yn Gymraeg



Executive Summary

Climate Change is already shaping our lives; we are living in a climate emergency with stark warnings and evidence globally that urgent action is needed if we are to avert the dangers ahead.

The actions we need to take will be complex and challenging but the central message is very clear: we must reduce our reliance on fossil fuels, become much more efficient in the energy that we use, and build our climate change resilience.

We must:

- Reduce direct energy use in all buildings, commercial and domestic
- Increase renewable energy supply to replace fossil fuels
- Shift to more sustainable methods of transport
- Reduce the amount of greenhouse gas emission from the production and delivery of our purchased goods and services
- Make smarter choices to waste less
- Increase the opportunity to absorb emissions with our green infrastructure
- Increase our resilience to climate change impacts across the city by improving our infrastructure to cope with extreme heat and rainfall.
- Prioritise actions to get the best carbon return for our investments.

As the City Council we want to lead the way, aiming to demonstrate best practice through direct action and intervention, but recognising that the big solutions will require a partnership approach, wide scale public buy-in, and changes from “business-as-usual” for everyone.

As Greenhouse Gas emissions have increased, Cardiff has experienced all of the key symptoms of man-made climate change, including erratic weather patterns, air pollution, flooding, heatwaves and changes in biodiversity. This has also come with associated economic and social costs as businesses and citizens have struggled with issues like flood damage, poor air quality and other interruption to daily life.

The Council has started to take action, with many initiatives over the past 10 years to cut emissions and support a transition towards a low carbon economy, but now we must accelerate and scale up our ambition and action to mitigate a climate change disaster and to ensure that Cardiff can thrive as a resilient, low carbon City.

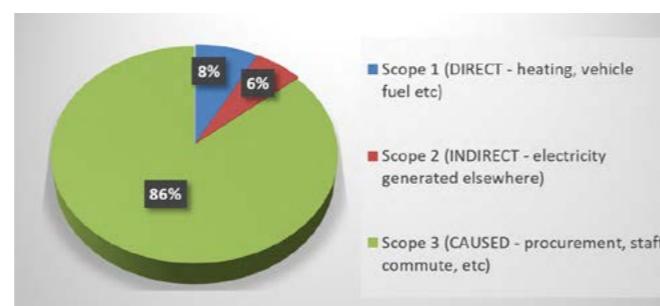
One Planet Cardiff (OPC) presents our response to the climate emergency and sets out our approach across the next decade. It establishes targets for the Council to be **Carbon Neutral** in its activities by 2030, and to work in partnership with stakeholders to develop a pathway for a **Carbon Neutral City** by 2030 too.

In producing the One Planet Cardiff strategy the Council has conducted wide spread consultation with key stakeholders and the public and our plans and proposals have been shaped by the valuable feedback that we've received.

We have also now completed a detailed carbon baselining and impact assessment, based on Welsh Governments carbon reporting framework, and this key milestone has enabled us to understand the current carbon position, both of our own operational direct and caused emission, and also of the wider City as a whole. We have estimated that the total Carbon Emissions Footprint for 2019/20 **Cardiff Council Activities**

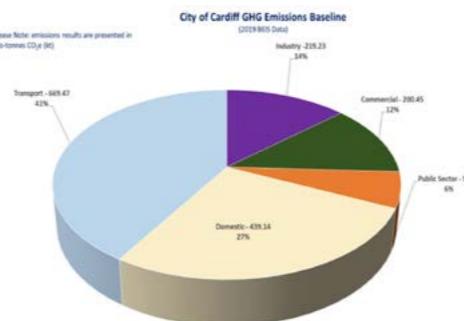
including direct, indirect and “caused” emissions from buildings, operations, procurement and staff commute is:

184,904 tonnes CO₂e per annum



Our current known projects and policies, as set out in the strategy and action plan, will have a significant positive effect on our direct council emissions resulting in approximately a 57% reduction by 2030. However, our carbon study has also now fully quantified the very significant challenges, especially in our “caused” emissions. These make up the vast majority of our overall carbon footprint as an organisation and we know we need to address this urgently. For the City as a whole the total Carbon Emissions Footprint for the City boundary (BEIS 2019 data) is:

1,626,059 tonnes CO₂e per annum



The Council has some major infrastructure projects underway that impact on the city footprint and we estimate that these could remove around 22% of Cardiff's baseline emissions by 2030. However, our analysis shows that we still have a long way to go. We have researched and identified the major areas that we need to work on and set these out in the strategy and action plan. At the city scale success will only be realised with strong collaboration and partnership working with all stakeholders across the city and beyond. OPC details the direct action we're going to take as a Council, and identifies work we'll focus on to influence the City as a whole to achieve a 2030 Carbon Neutral target including Governance structures, Engagement and Behaviour Change and Direct Low Carbon Projects.

We are working on large decarbonisation infrastructure projects to deliver renewable low carbon energy and heat, we are rolling out energy efficiency retrofit and low carbon new-build, implementing sweeping transport transformation and we're preparing to adapt with flood prevention and food strategy measures. We are embedding One Planet Cardiff into the new Welsh

Curriculum for all schools in Cardiff and have engaged the Centre for Climate and Social Transformation (CAST) to help plan a city wide engagement strategy to influence the behaviour change which we know is fundamental to successful delivery of the 2030 Carbon Neutral Targets. We set out how we will lead, govern, engage and work collaboratively with citizens, business and public sector across the city to deliver a green revolution, with a suite of ongoing and planned projects that will be updated annually in our action plan. Alongside One Planet Cardiff are complementary and ambitious local and national policies, not least, the Council's 'Greener, Fairer, Stronger - City Recovery and Renewal Strategy', our Corporate Estate Decarbonisation Strategy and in development, our Procurement Strategy and Local Development Plan renewal. Wales has a national ambition for its public sector to be Carbon Neutral by 2030 and industrial plans to decarbonise grid electricity and gas and utilise alternative fuels such as Hydrogen and Biogas will help achieve this, but we must meet them in the middle by reducing overall demand for energy.

In tackling Climate Change therefore, there is opportunity for Cardiff and the region to emerge as a contemporary, low carbon place for all; a greener, healthier city with more equity across communities as we realise the co-benefits of creating new, sustainable jobs and economic sectors, addressing fuel poverty, improving public transport and active travel provision and providing many more healthy, green spaces and cleaner air that support social wellbeing. The strategy is supported by a One Planet Cardiff Action Plan detailing immediate, medium and longer term priorities for addressing both carbon emissions to mitigate Climate Change and adapting to climate change impacts over the coming years. The Action Plan is a dynamic set of priorities that will be reviewed, monitored and measured annually over the next nine years to 2030.

We have endeavoured to shape an appropriate response in this Strategy; to acknowledge what stakeholders across the city want us prioritise, focus effort on and work collaboratively to make the huge shift to a Carbon Neutral city by 2030 as integral to delivering a post-COVID social, economic and environmental recovery.

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Context

Foreword

Notwithstanding the Covid 19 Pandemic, Climate change remains the defining global challenge of our generation.

The evidence is clear and there is no doubt that the world is facing a climate catastrophe if we don't act now, with urgency and with bold, impactful decision making.

The message could not be clearer; the UN's Intergovernmental Panel on Climate Change (IPCC) report published in August 2021 assessing the impact of global warming to 1.5OC above pre-industrial records has provided the starker warning yet that if we don't act to reduce green house gas emissions immediately the world will be facing climate catastrophe with increasingly extreme heatwaves, droughts and flooding, and a key temperature limit being broken in just over a decade.

Our actions in the coming decade are crucial; they will define the shape and wellbeing of our society and our planet for generations to come.

The global population has demonstrated mass action, and rapid response to the global COVID-19 pandemic and now we must take the same rapid and material action to tackle climate change. We must elevate our actions to secure the planet's well being now and must act for the future of humanity.

As a coastal city, Cardiff is at particular risk and we need to ensure we mitigate and adapt against the impact of rising sea levels, flash floods and extreme heat in the coming years. It is crucial that we reduce and remove the carbon and Green House gas emissions from our activities and adapt the way we live and work.

The challenge is enormous, but there is also opportunity. By tackling climate change in the right way = we can also have a more sustainable, healthy and more equitable society that operates

with consideration to our fellow humans and future generations.

Through the pandemic, we've seen nature reclaiming the streets, clearer skies as pollution levels drop and we've cherished green spaces to exercise and support our wellbeing. We've enjoyed cleaner air and getting back to basics of growing and cooking food, relying on local supply chains, and spending more time with our families. We need to take the best learning from this experience and make sure that the choices we all make from here help to put us firmly on the right path, driving a long-term downward trend in Greenhouse Gas emissions and allowing the city to thrive within acceptable environmental limits.

The Council has prepared the One Planet Cardiff strategy following extensive stakeholder and public consultation and informed by detailed work to understand our carbon position more fully. The strategy sets out our plan of action and priorities that will take us as to a Carbon Neutral 2030.

We don't have all of the answers now and our action plan will evolve rapidly over the coming 9 years, but we are setting out our short, medium and longer term planned actions and ambition to get started with making the changes needed to mitigate the impact of climate change for our city.

One Planet Cardiff
 Cardiff today is a THREE planet city: If everyone in the world consumed natural resources and generated carbon dioxide at the rate we do in Cardiff, we would need three planets to support us. This is not sustainable for us, or Equitable to those we share the planet with.
 Our aspiration is to become a One Planet City, living and thriving within our environmental means.

The Climate Emergency

Our climate is changing. In October 2018 the Intergovernmental Panel on Climate Change (IPCC) released a report detailing the short amount of time we have left to tackle widespread climate breakdown: **we have until 2030 to cut our carbon emissions to a level that limits global warming to a maximum of 1.5°C from pre-industrial levels.**

We are already seeing the consequences of 1°C of global warming in Wales through rising sea levels, more extreme weather and flooding, and the warmest winter on record in Wales in 2019.

The 2020 UK State of the Climate Report prepared by the Met office set out that in the space of 30 years, the UK has become 0.9°C warmer and 6% wetter with 2020 being the third warmest, fifth wettest and eighth sunniest on record—no other year is in the top 10 on all three criteria. In the space of 30 years, the UK has become 0.9°C warmer and 6% wetter.

Warming of 1.5°C or higher increases risks associated with long-lasting or irreversible changes, with devastating impacts locally and globally. It's estimated that the Covid-19 pandemic of 2020 could have resulted in a reduction of global carbon dioxide emissions by around 8% (IEA 2020), the UN Environment Programme estimates that global GHG emissions must fall by 7.6% every year from 2020 to 2030 to keep temperature increases to less than 1.5°C*.

The Welsh Government is committed to a number of national and international policies which aim to tackle climate change:

- The International 2015 Paris Agreement which seeks to keep global temperature increases well below 2°C
- A 2021 target which aims to reach net-zero emissions in Wales by 2050
- The Wellbeing of Future Generations Act 2015 which requires public bodies in Wales to consider the long-term impact of their decisions on future generations
- Welsh Government's ambitions for a Carbon Neutral Public Sector in Wales by 2030

- The UK Government's 2020 policy to eliminate petrol, diesel and hybrid vehicles by 2035
- The upcoming COP26 conference gives Wales a chance to make further commitments to reducing emissions and to showcase its successes in areas such as recycling to other nations.

In 2019 Cardiff Council announced a Climate Change Emergency and in 2020 published a draft One Planet Cardiff strategy for consultation - a strategic vision to mitigate the impacts of Climate Change in Cardiff.

Following city wide consultation, this updated strategy reflects the priorities of city wide stakeholders and our actions to deliver the ambition 2030 Carbon Neutral City and Council target, supporting the ambition to keep global warming to less than 1.5°C.

Climate change is the long-term shift in average weather patterns across the world. Since the mid-1800s, humans have accelerated release of carbon dioxide and other greenhouse gases into the air by burning fossil fuels including oil, gas and coal. This causes global temperatures to rise, resulting in long-term changes to the climate.

Supportive Policy

Tackling Climate Change is at the heart of Cardiff's post-COVID recovery strategy.

Both Cardiff Councils' Corporate Plan and 'Greener, Fairer, Stronger, City Recovery and Renewal Strategy' recognise the unique opportunity to build on the huge shift in the way we work and live that we've had to make in response to COVID-19.

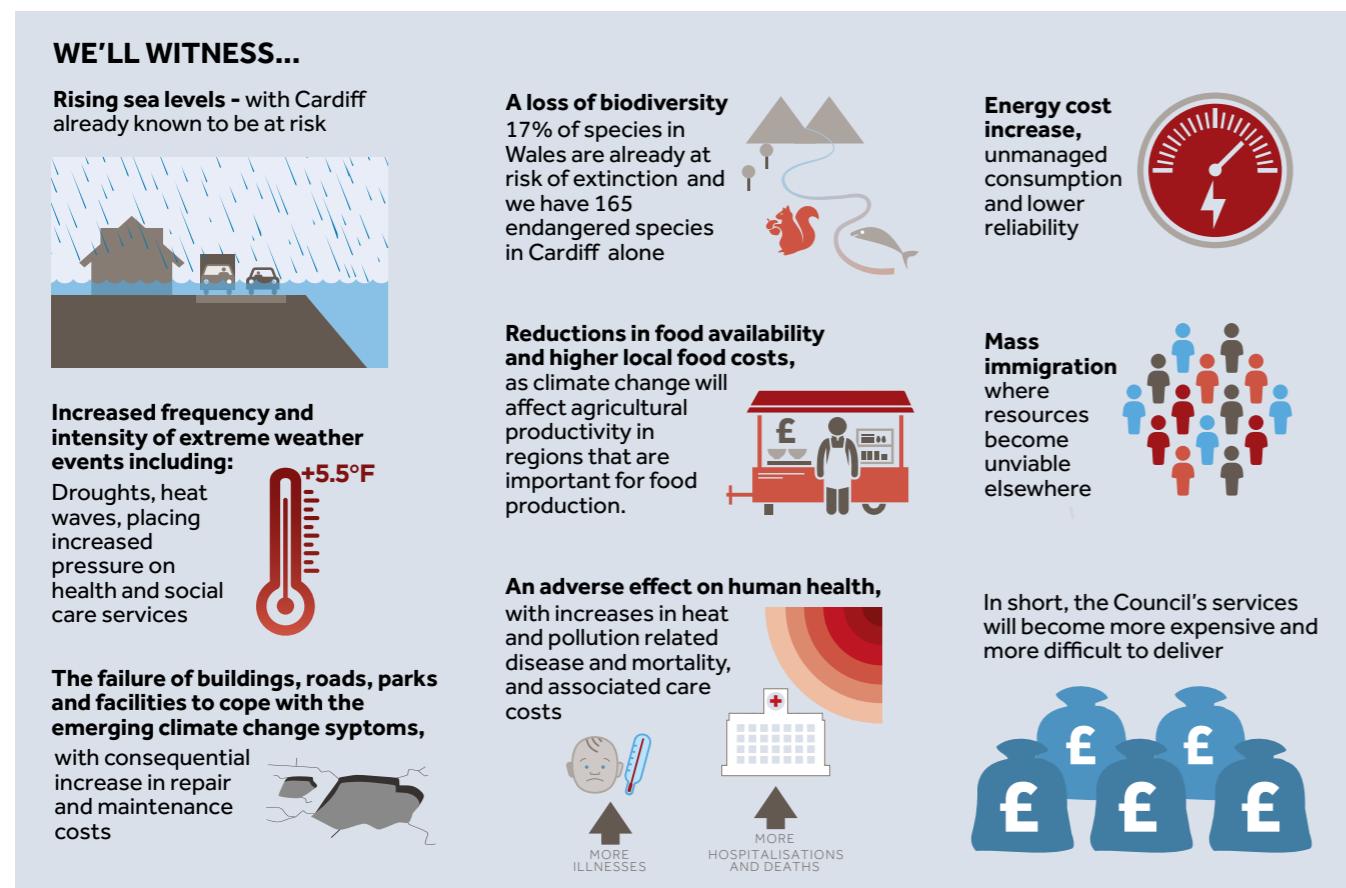
Preserving some of the key environmental gains and shaping our recovery to embed climate resilience across Cardiff, with **equity, wellbeing, sustainability and prosperous green growth for all at its core align directly with the action set out in One Planet Cardiff.**

Central to climate change response policy are three core pieces of legislation;

WELSH LEGISLATION	SUMMARY	HOW IS OPC SUPPORTING THE OBJECTIVES?	OTHER CARDIFF COUNCIL SUPPORTIVE POLICY
Well Being of Future Generations (Wales) Act 2015	The Well-being of Future Generations (WFGA) calls for sustainable cross-sector action based on the principles of long-term, prevention-focused integration, collaboration and involvement. It intends to improve economic, social, environmental and cultural well-being in Wales to ensure the needs of the present are met without compromising the ability of future generations to meet their own needs.	The co-benefits of tackling climate change align with the objectives set out in WFGA. Cross city collaboration will deliver OPC headed by the Public Service Board Climate Emergency Group.	Cardiff Well-Being Plan 2018 - 2023 and Annual Report. Cardiff Corporate Plan 2021 - 2024 sets out priorities for resilient growth.
Environment (Wales) Act 2016	The Act places a duty on Welsh Ministers to set targets for reducing greenhouse emissions and also to set carbon budgets. Statutory targets and a more robust governance framework will allow us to better evaluate progress and provide certainty to help drive investment for a low-carbon Wales.	OPC sets out two ambitious targets; to make the council and City Carbon Neutral by 2030.	Cardiff Corporate Property Strategy 2021-2026 will have a 60% emissions reduction target from our corporate estate. The LDP update will have Climate Change at its core.
The Climate Change (Carbon Budgets) (Wales) Regulations 2018	These Regulations provide for a maximum total amount for the net Welsh emissions account (a carbon budget) for the first two budgetary periods, 2016-2020 and 2021-2025. In March 2021 Senedd Cymru approved a net zero target for 2050.	OPC accelerates the 2050 NetZero target to 2030 for Cardiff as an authority and a city. We need to take decisive action now to mitigate impacts.	Cardiff's corporate building strategy currently in development sets out a 60% emissions reduction target.

Risks & Opportunities

If we do nothing, the threat becomes critical...



but there's potential to achieve economic and climate change goals with a host of co-benefits.

IMAGINE WHAT CARDIFF COULD BE IF WE COMMIT TO THIS AGENDA...

A sustainable, low carbon economy

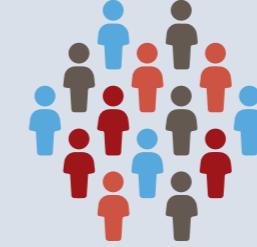
- Accelerating low carbon technology and programmes could create significant numbers of skilled jobs and local wealth around low-carbon technology.



The green economy has consistently **grown at around 5%** over the last 10 years.

We could address inequality

- By improving the quality of existing housing stock and implementing energy efficient measures, we could improve living conditions and help people out of fuel poverty.



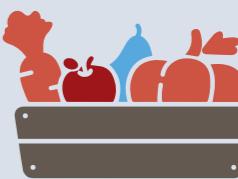
We could make Cardiff greener and healthier

- Through adopting more sustainable travel, reducing air pollution and encouraging active travel; and
- Ensuring resilience in our natural environment by protecting and enhancing crucial biodiversity, re-connecting citizens to nature city-wide.



We could make Cardiff a Climate Resilient City

- By generating our own local energy using natural, renewable means, increasing our resilience from global risks;
- Growing and using food locally; and
- Using Sustainable Urban Drainage to enhance the environment and mitigate flood risk



IF WE DO NOTHING



IF WE ACT NOW



Co-Benefits - How will Cardiff Thrive?

Co-benefits are what happens when by tackling one agenda, we realise significant benefits in other areas. Actions identified in One Planet Cardiff will be fundamental to supporting delivery of Cardiff's strategy for a Greener, Fairer, Stronger: City Recovery and Renewal Strategy which sets out the Council's response to the COVID-19 pandemic, outlining the initial recovery actions we will take to help get the city economy and city life back up on its feet alongside the longer term priorities for renewal aligned to 7 Key Missions.

Immediate Recovery: Protecting Jobs and Businesses will see the extension of support to district's, business and employment support and roll out of active travel, promotion of green spaces and making the city safe for workers and visitors alike.

THE 6 KEY MISSIONS

Mission 1: Reimagine the City Centre

The opportunity for the city centre to be a dynamic, cultural, engaging, and welcoming 'hub' of Cardiff aligns well with One Planet Cardiff, delivering many co-benefits around green spaces, active travel and sustainable transport infrastructure, employment and economic development associated with curating and delivering a contemporary appealing space including a rejuvenated market offering fresh and local produce and a re-instated canal quarter facilitating water management for the city.

Mission 2: A City for Everyone

Overall, economic and health inequalities that existed before the pandemic have widened. Unless concerted action is taken, these gaps between communities will continue to grow with unemployment, deprivation and health issues exacerbated. One Planet Cardiff seeks to address fuel poverty, improve air quality, and create many green jobs through retrofit, renewable and green infrastructure projects across the city. We will work closely with citizens including skills partnerships to re-train and develop the skills to deliver the ambition and embed the principles and benefits of low carbon future in the school curriculum.

Mission 3: A City of Villages

The pandemic has brought to the fore the role of communities, local centres, our parks and the spaces on our doorstep. For the city this means there are opportunities to expand on those good things that happened during the pandemic such as increased active travel and a renewed focus on local economies. In responding we need to take steps to lock in the things that raised the profile of our local centres, whilst also investing in their future. The opportunity to invest in green infrastructure and develop more urban parks, create joined up cycle routes, re-green communities and invest in SUDS, and develop high quality renewable housing in local areas perfectly complements our One Planet Cardiff ambition to transition Cardiff to a low carbon city.

Mission 4: Culture and sport-led renewal

Putting culture at the heart of redevelopment, creating places and spaces that people want to be in and around, and supporting a more creative economy will support regeneration and attract people to Cardiff supported by sustainable infrastructure to allow safe and low impact travel into and around the city.

Mission 5: Tech City

We know data is fundamental to transitioning to a low carbon economy. From monitoring and measuring the impact of our buildings to mitigating the impact of travel by facilitating remote meeting and working. Developing a plan for Cardiff to become a Smart City to manage energy, traffic flows, congestion and air quality will support our transition to a low carbon City alongside tech innovation in monitoring, modelling, and measuring progress of all aspects of the transition to a low carbon city.

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Mission 6: One Planet Recovery

The final mission in our recovery plan is to deliver the objectives of One Planet Cardiff, putting climate change at the heart of a recovery to deliver the One Planet Cardiff Strategy, with the aim of becoming a carbon neutral city by 2030, and adopting 'zero carbon zero poverty' principle as we recover from the pandemic.



It often takes a massive high-impact event to change attitudes to the climate – so let's hope what's been happening recently with extreme weather will raise the will to tackle the problem

Liz Bentley, head of the Royal Meteorological Society July 2021

Beyond Decarbonisation

It's essential we mitigate the impact of Climate Change by reducing Green House Gas Emissions, however, we also need to think holistically how we plan, adapt and mitigate risks associated with rising global temperatures.

We need to develop a robust city wide adaptation strategy that recognises potential risks and opportunities using future scenario planning to ensure we're prepared.

We've identified risks and opportunities and now we need to plan.

Cardiff in particular is vulnerable to coastal flooding and we have a Coastal Risk Management programme to enhance Coastal flood defences.

We're beginning to partner with stakeholders such as University Health Board Wales to consider climate change impacts on health across the city and how we can develop interventions to mitigate impact.

Climate Resilience: How are we preparing?

Alongside the efforts to reduce Green House Gas emissions, we will need to adapt and we are already preparing.

The new flood risk strategy is due for completion in October 2023 based on consultation with local communities and reflecting national climate change policy.

All flooding and sea level rise projects already incorporate climate change at the beginning and as a key factor throughout development.

Cardiff is already investing in flood defences with the first scheme underway developing coastal defences foreshore of Rover Way and the River Rhymney estuary and more are planned.

Sustainable Drainage Systems regulations are ensuring new developments have appropriate water attenuation and drainage scheme such as green roofs or natural drainage systems such as we've implemented in Grangetown.

There are plans for increase tree canopy cover with the collaborative roll out of 'Coed Cardiff' and installation of many more green spaces and pocket parks delivering multiple benefits around water attenuation, cooling islands with shade as temperatures increase.

Climate Change Scenario Planning:

The Council Resilience Unit are engaged in a number of scenario planning exercises and recognise it is a methodology that is core to any realistic response to the climate change emergency. The Unit has worked to convene multiple stakeholders to deliver solutions to water attenuation and management of river catchment areas for example and recognises this collaborative approach is fundamental in the approach to mitigating the impact of climate change on Cardiff's infrastructure.

In addition to individual projects, Climate Change is identified as a key risk on the Council's Corporate Risk Register and is being embodied in all council work practices to engage a workforce that is being confronted by the challenge.

The council is using Carbon Awareness training to upskill the workforce on the impact of future climate change scenario and response planning with the aim of training all employees to be carbon literate and adjust behaviour accordingly, reaching around 14,000 city stakeholders in the process.

Welsh Government have recently published Tan 15 guidance on development and flood risk which will take effect from 1st December 2021.

This technical guidance will form part the appraisal process for all new developments, particularly vulnerable developments such as housing.



Alongside the efforts to reduce Green House Gas emissions, we will need to adapt and we are already preparing. All flooding and sea level rise projects incorporate climate change at the beginning and as a key factor throughout development.



Introduction to The Strategy

One Planet Cardiff strategy sets out the scale of the challenge and the actions that we as a Council and the city more generally need to take to embed and accelerate carbon reduction and reach a Carbon Neutral position.

We set out the position in terms of current levels of carbon emissions for the council and city and planned action to reduce emissions as well as partnership working we need to achieve our goal city wide

As the electricity and gas grids move away from fossil fuel and decarbonise, we need to work hard to reduce our energy consumption, meeting in the middle to facilitate a full shift to a low carbon economy.

We now understand our emissions more clearly and have set out ongoing actions and project proposals as well as our priority commitments to get us to carbon neutral 2030. Some projects are already underway, some are well defined, some are in development and some need to be worked up over the next 9 years but key to all of this is that positive changes and resolve are needed from all stakeholders across the city.

Monitoring and measuring carbon emissions and the effects of carbon compensation is complex, yet crucial to deciding this pathway and meeting our target.

We have established a 2019/20 baseline for Cardiff Council emissions based on the Welsh Government Net Zero Carbon Reporting guidance which covers direct emissions including buildings, fleet, waste in operations and land emissions and indirect including procurement and business travel. BEIS data has been used to evaluate the whole City's emissions focusing on Scope 1 and 2 direct emissions from the combustion of fuel such as gas and oil and use of electricity.

We have also developed a carbon assessment tool to help us understand and model the carbon saving potential of our existing projects and new proposals. Our methodology also considers the social and economic benefits of investment and effort.

We have also recognised the need to continually engage with all city stakeholders to develop shared understanding of the issues and to target areas of change that will be most impactful.

We are prepared to lead, convene and facilitate and monitor action across the city but we can't do it all, - citizens, industry and all city wide stakeholders will need to take action too. The task is monumental but if we come together as a city, we can make a difference.

Fundamental to this is monitoring and measuring our progress both on emissions reduction, but also against a broader spectrum of sustainability and wellbeing metrics.

We intend to review progress annually using globally recognised monitoring and evaluation frameworks to ensure a **dynamic, responsive and evolving action plan that reflects the needs and priorities of the city and citizens**.



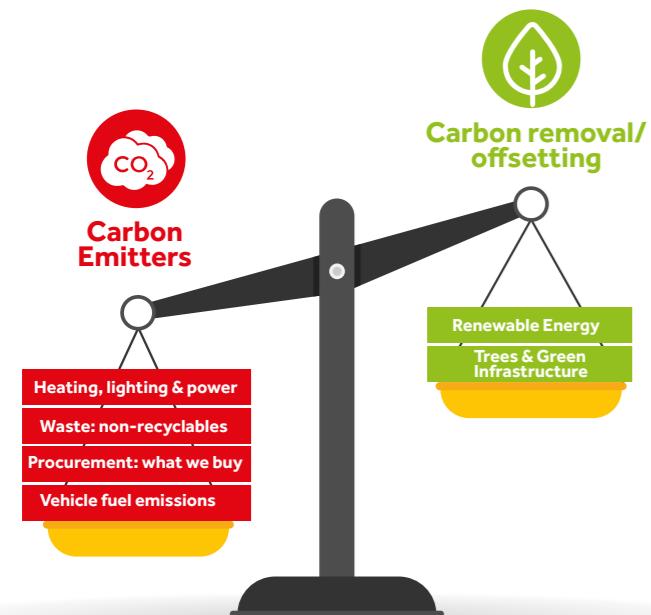
60% of the changes needed to reach UK 'net zero' climate targets involve behaviour change



Carbon Neutral by 2030 - What does that mean?

Carbon neutrality or Net zero means balancing the greenhouse gas emissions we produce with the amount of gases we're removing from the atmosphere.

Currently, the world produces more GHG emissions than it can absorb which is causing global warming and climate change as the gases absorb radiation.



Understanding Carbon

'Welsh Government Carbon Reporting looks at Emissions in 3 categories or "Scopes"

Scope 1 - Direct Emissions are those that occur at source, for example by heating buildings or from the exhaust pipes of vehicles.

Scope 2 - Indirect Emissions are mainly from electricity used in our activities but where generation and associated emissions are elsewhere.

Scope 3 - All Other Indirect "Caused" Emissions
This covers emissions associated with procurement, staff commute and direct waste. It also takes into consideration sequestration - the removal of carbon dioxide from the atmosphere.



The Scale of the Challenge for Cardiff Council and City

We can't underestimate the scale of the challenge to achieve Carbon Neutral Council and City by 2030. It will require monumental effort from all stakeholders to make a material shift. The last decade has seen a general reduction in carbon emissions in Cardiff, and this gives us a good starting position. But it is now clear that we need to do more, we need to do it faster, and we need to bring as many stakeholders and partners as possible on the journey with us.

DEVELOPING A CARBON BASELINE

The Council

Since 2016/17, the Council has managed to reduce total Carbon Emissions from electricity consumed in operations including building and street lighting by around 70%.

While this is partially due to a reduction in the Council estate and staff numbers and a decarbonisation of the national grid, a significant contributory factor is the Council's continued environmental performance to minimise adverse effects on our environment which we need to continue apace.

We still have work to do to reduce gas consumption and to decarbonise heat and we're focused on delivery of our low carbon heat network as well as our corporate buildings strategy to achieve a material reduction.

We're now working to Welsh Government's Net Zero Methodology to achieve Carbon Neutrality by 2030. For this first time, this means that we need to quantify and address our "caused" or Scope 3 emissions, including procurement activities, staff commuting and carbon sequestering opportunities.

The City

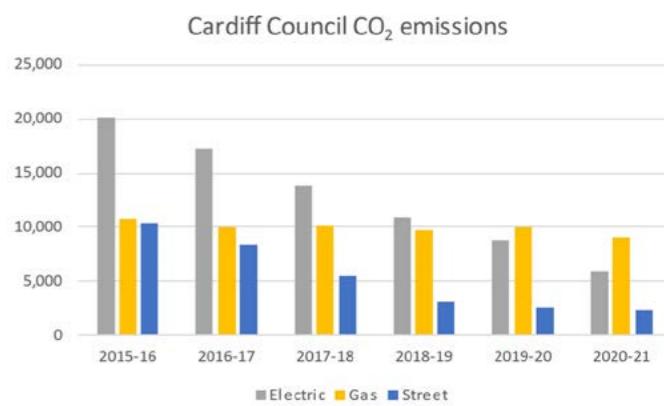
Between 2005 and 2018 Cardiff saw significant decreases in CO₂ emissions.

46% decrease in per capita emissions and 39% decrease in absolute emissions* (an average 3% per year reduction in total emissions)

Industry and commerce have shown the greatest decreases in Cardiff, however there have also been significant decrease in domestic emissions and more modest reductions in road emissions across the city - it is thought that this is mostly due to rising energy costs making residents more energy aware and efficient. Whilst this is positive, it is clearly not enough. We must do more, and faster.

We need to reduce emissions by around 4% per year to limit warming to a 1.5°C limit

*Source: BEIS published 'UK local authority and regional carbon dioxide emissions national statistics: 2005-2018'



What have we achieved to date?

Since 2016/17, the Council has managed to reduce total Carbon Emissions from its operations covering buildings, machinery, street lighting and transport from 23,958 t/CO₂e to 12,800 t/CO₂e - that's an average overall reduction per year over 3 years of 17% per year Scope 1 and 2 Emissions.

Since the draft OPC was launched, we have continued to progress a number of key projects that will support the Council in achieving our Net Zero ambition namely:

- Continued energy efficiency retrofit of our estate.
- Rationalisation of our fleet with the start of a transition to electric vehicles underway.
- Securing of the first phase of a low carbon district heat network serving the Cardiff Bay, due to start on site this autumn/winter;
- Our 9MW solar farm at Lamby Way is operational;
- We've allocated Capital Funding to accelerate number of new projects such as Heat Source Pumps at Rhiwbina Library, Carbon Reduction and Heat Recovery at Thornhill Crematorium, EV Charging Pilot, improved real-time air quality monitoring and improved food composting for 9 schools.
- We've committed to designing all of our forthcoming new build buildings to near zero carbon performance levels from 2024;
- We've established with Public Service Board Partners a Climate Emergency Board to identify and implement mutually beneficial project in partnership and to aggregate the effects of our collective carbon reduction plans, and we've engaged with Centre for Climate Change and Social Transformation (CAST) to develop a wide reaching public engagement and behaviour change Programme;



Carbon Analysis

Using the Welsh Government's Carbon Reporting Framework as a guide we have now developed a very detailed baseline measurement and understanding of the Council's Carbon Emissions. As well as calculating the emissions from our buildings, streetlighting and transport activities, this baseline includes an analysis of our "Caused" or Scope 3 emissions and also estimates the positive effects that the Council's parkland and natural estate have in "sequestering carbon".

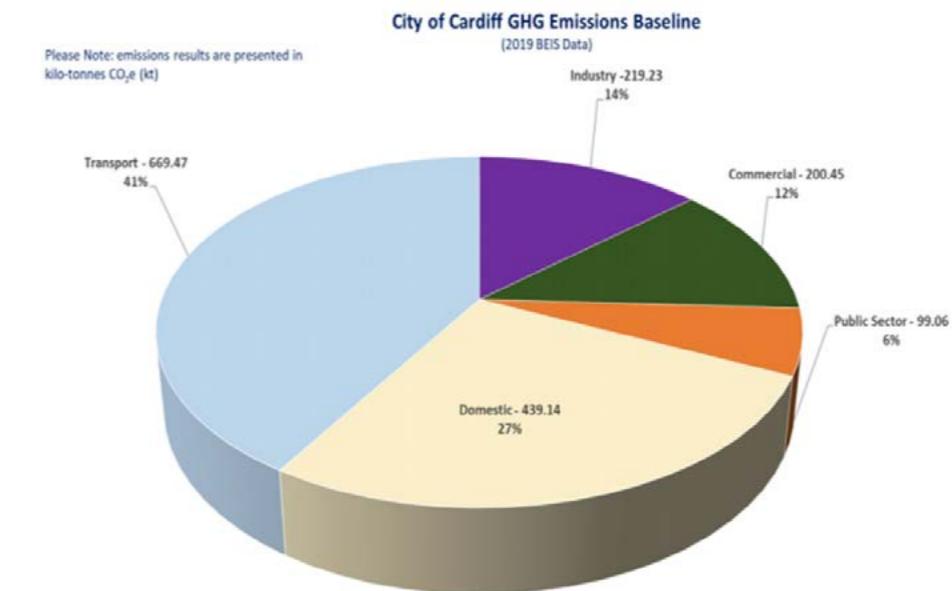
Alongside this we have also used statistics published by the Government's Department for Business, Energy and Industrial Strategy (BEIS) to present the picture for the whole city. Scope 3 "caused" emissions are not calculated specifically in this city-wide dataset. We've chosen 2019/20 as our baseline year for both so that we can avoid the statistical anomalies that have been observed as a result of the pandemic and lockdown in 2020/21. The headline results of this exercise are summarised below.

The City's Carbon Baseline 2019/20

The City's Carbon Baseline 2019/20

Data on the whole City's emissions are published by BEIS. In 2019 it was estimated that the City's (Net) Total Green House Gas Emission stood at 1,626,059

tonnes CO₂e within its boundaries (Scope 1 and 2). The distribution graph below shows that transportation and domestic property were by far the biggest emitters in the city and should therefore be key focus areas in our decarbonisation plans.



*Sourced from BEIS (Department for Business, Energy & Industrial Strategy) figures: <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2019>

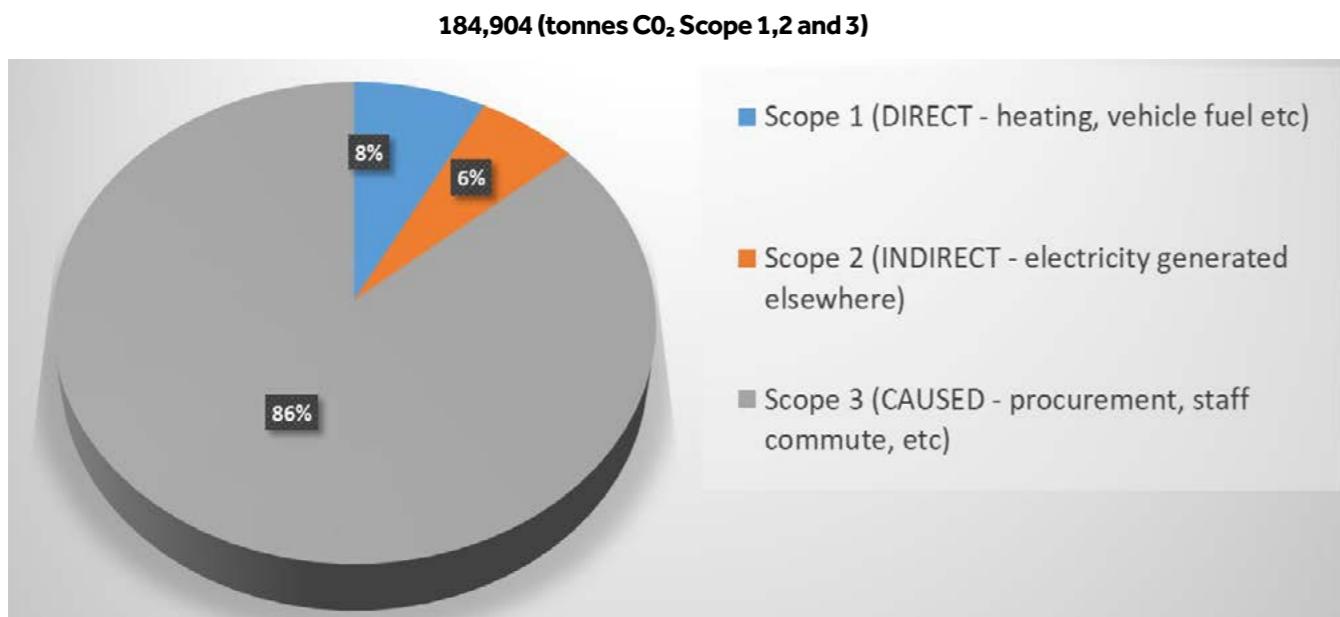
The Council's Carbon Baseline 2019/20

Whilst we anticipated in our draft strategy that our Scope 3 emissions would form the largest single element of our baseline, our analysis has shown just how significant this is, accounting for a massive 86% of our potential emissions.

The baselining exercise has highlighted some significant challenges with the Welsh Government methodology around Scope 3, not least that it uses nationally developed, and relatively old "carbon factors" to apply a standardised estimate of emissions per pound spent on a range of different spend categories.

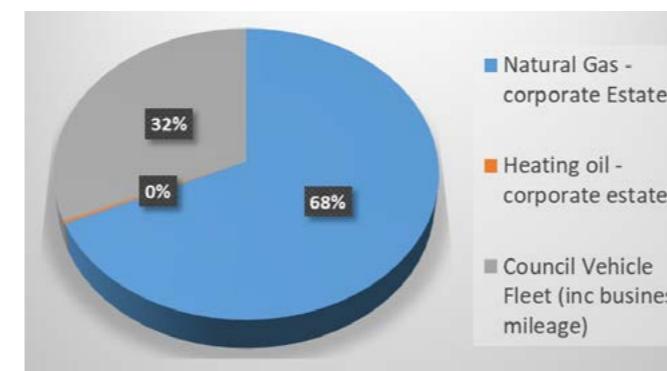
We believe that Cardiff has already managed to move away positively from the national averages in many sectors but it is not possible to accurately judge this difference.

On that basis we have used the methodology but recognise that more work will be needed to bring greater accuracy and clarity to this approach as we work through our delivery and monitoring programme. We are committed to working with Welsh Government on this.



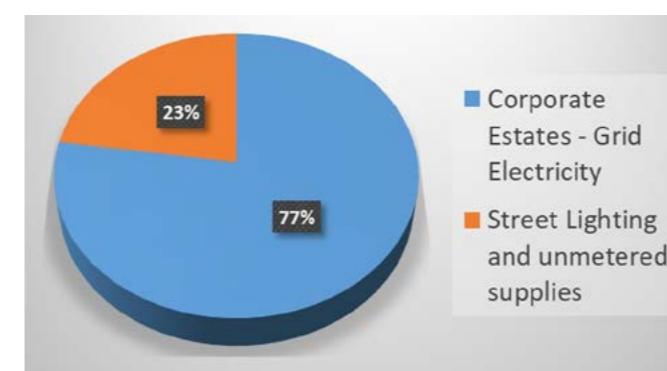
How does the Council Baseline Breakdown?

Scope 1 Direct Emissions: 14,745 (tonnes CO₂e)



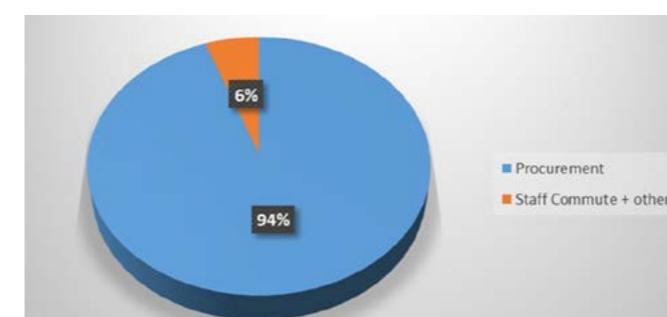
The Council gas heating systems make the most significant contribution to Scope 1 emissions and this has proven to be one of the hardest areas to decarbonise. The Heat Network project will address some elements of this but a more direct strategy for boiler replacement, using air and ground source heat pumps and other low carbon opportunities will need to be developed.

Scope 2 Indirect Emissions: 11,373 (tonnes CO₂e)



The indirect Scope 2 (mainly electrical) emissions have already seen a substantial decrease in the last decade but work to drive further energy efficiency will be needed, alongside the consideration of increased direct energy feed from renewables. The continued national decarbonisation of the electricity grid will also help, but our ambition for a carbon neutral Council by 2030 puts our requirements some years ahead of the national targets.

Scope 3 Caused Emissions: 163,441 (tonnes CO₂e)



The "Caused" or Scope 3 emissions account for an estimated 86% of our total footprint as an authority. Procurement activities are by far the largest element through, staff commute in itself was estimated to have caused around 9,000 tonnes CO₂e in 2019/20. Notwithstanding the limitations in the methodology used to calculate this the overarching message is clear that we need to place renewed focus on our procurement and staff commute activities as part of our response to the climate emergency.

In addition to these emission calculations, it is estimated that 4,654.84 tCO₂ are being sequestered (absorbed) by land on the council's parkland and other Estate, which brings the Net total to 184,904 tonnes CO₂e from Council Activities.

Targets

One Planet Cardiff A strategy for a Carbon Neutral City by 2030

This strategy sets out Cardiff Council response to the Climate Emergency. The Council has consulted stakeholders and incorporated feedback from across the city into this final strategy and accompanying action plan. We are committed to:

- A target for Cardiff Council to be Carbon Neutral by 2030; and
- To work with city-wide partners to develop a road map and action plan for a Carbon Neutral City by 2030.

The journey to becoming a carbon neutral city by 2030 isn't going to be easy. Delivery requires a concerted effort on behalf of all citizens, governmental organisations and business with many challenges including the need for widespread public and institutional behaviour change, financial and technological limitations, and institutional constraints. Delivering this sort of change will require a meaningful shift in social values, attitudes, and behaviours.

We don't underestimate the challenge of this, but recognise that we have already demonstrated how, as a society, we can make fundamental shifts in our behaviour and rapidly adapt during the COVID crisis. Addressing and being mindful of these challenges, in order to encourage constructive shifts, will be a critical part of our response to climate change. We all need to work together to make a difference and to change behaviours.

Although the actions needed will be broad ranging and complex, our carbon analysis, and the feedback from stakeholders and the public, shows that our strong emphasis on decarbonising travel in the city, and greater energy efficiency and clean energy use in the domestic sector is the correct approach.

The rewards will be a cleaner, healthier and more equitable City with a higher quality of life and a thriving, more resilient economy now and for future generations. The do-nothing option is simply not viable.



A target for Cardiff Council to be Carbon Neutral by 2030 and Work has commenced with city-wide partners to develop a road map and action plan for a Carbon Neutral City by 2030.



What are the options?

We need to identify projects that reduce greenhouse gas emissions and sequester any residual emissions whilst also preparing to adapt to and mitigate the impacts of our rapidly changing climate.

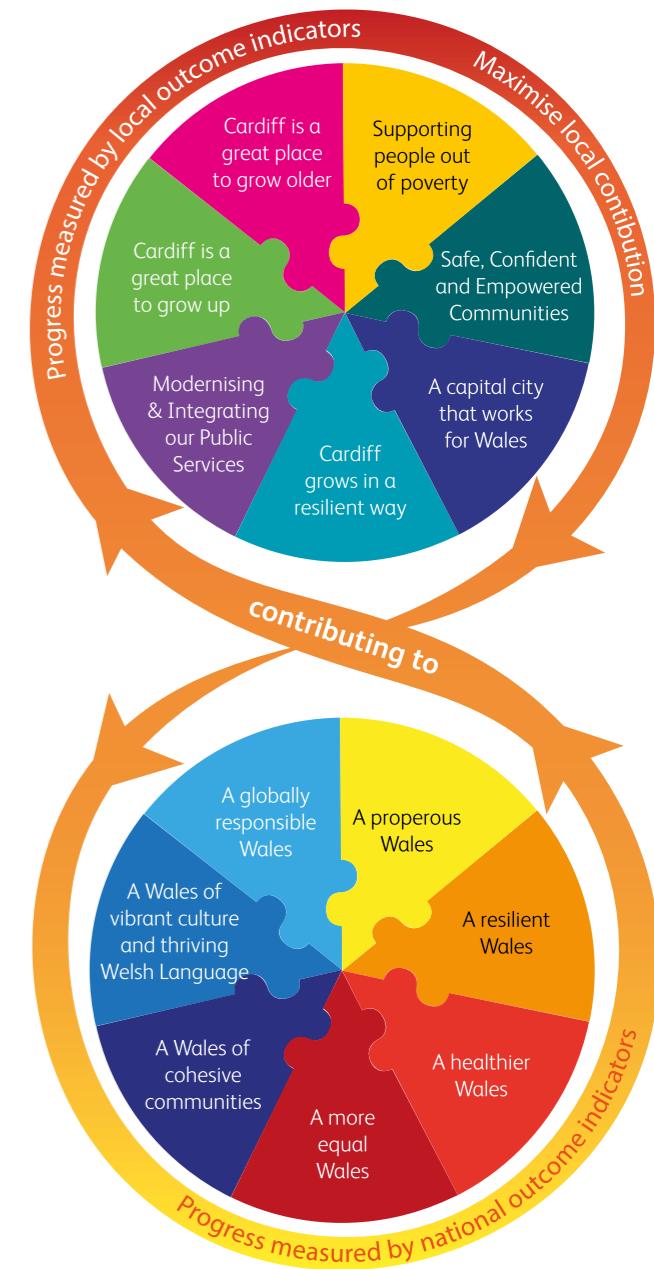
A Carbon Impact Evaluation Tool has been developed and utilised to review a selection of immediate OPC Strategy projects and have taken messages from our carbon baselining exercise to help us prioritise and focus attention on impactful areas of work.

The first tranche of short term projects have been appraised, some are well underway and some are in earlier stages. These are agreed and funded actions with known carbon outcomes.

The tool helps prioritise projects considering both the Carbon and Social Impact against the following assessment indicators;

- Carbon benefit of delivering the proposed project (Pre/post carbon emissions impact evaluation)
- Supporting people out of poverty (includes fuel poverty)
- Cardiff grows in a resilient way
- Cardiff is a great place to grow older
- Safe, coherent and empowered communities
- A capital city that works for Wales
- Modernising and integrating our Public Services

The annual carbon savings and lifetime carbon savings of projects can be compared side-by-side in a Summary Dashboard. Using this, projects can then be evaluated and prioritised for greatest contribution to the OPC Strategy.



Council Emissions Scope 1 & 2: Impact of agreed projects

Using our carbon modelling tool the contribution of our known and imminent carbon reduction projects has been evaluated. These include the Estate Decarbonisation Strategy, which has a target to remove 60% of our building related emissions by 2030, the Low Emission Fleet Strategy, our Low Carbon District Heat Network Project (where it connects to Council Buildings), and the Streetlighting Efficiency Strategy. The table below shows that, on completion of these projects, the scope 1 and 2 emissions will be reduced by 57%

This is very positive, however there will still be 43% of emissions to tackle over the coming nine years to 2030.

Based on our carbon analysis and understanding of our targets and corporate priorities we believe that positive action in the following key areas will collectively assist in us closing this gap by 2030:

- Commitment to commissioning all council future new build to near zero energy standards and to make carbon central to the decision making on the estate relinquishment programme

(Estate retrofit and rationalisation, Heat Network, Low Emission Fleet, LED street Lighting)

	19/20 Baseline GHG Emissions	Emissions removed (tCO2e)	Residual (tCO2e)	Percentage Reduction (%)
Heating (corporate estate)	10,105	6,063	4,042	60% *
Electricity (corporate estate)	8,795	5,277	3,518	60% *
Council fleet & business travel	4,640	2,747	1,893	59%
Street Lighting	2,578	753	1,825	29%
Total	26,118	14,840	11,278	57%

* presumed reductions to be included in Estates Decarbonisation Strategy 2021

Scope 3 Emissions: Procurement

The Council spends over £480m annually buying goods, services and works. 70% of this spend directly benefits the Welsh economy and £245m sits with SMEs.

Up until now, Scope 3 emissions have not been routinely measured but our study suggests that collectively, they cause over 80% of the Council's total emissions

We're working with Welsh Government to review the procurement Carbon Footprint methodology so it not only reflects spend £, but the impact of low carbon choices we can make to reduce emissions from our procurement activities.



Analysis suggests that some of the highest areas of impact of our procurement emissions are in delivering Council waste activities, transport funding, delivery of social care and road and building construction and repair. However, all of the Council's external spend has a carbon consequence that needs to be understood and reduced.

Care needs to be taken in this area to ensure that our actions both deliver the carbon reduction required whilst continuing to support the local economy and to help it, in turn, decarbonise its activities. This Strategy aims to:

- Commence a Root and branch review of what we purchase, identifying the high carbon areas, alternatives & quick wins;
- Put in place training for specifiers in the Council that will help deliver smarter, more carbon and climate responsive specification and embed Circular Economy thinking in our work;
- Encourage and favour lower carbon supplies in tender evaluations; and
- Investigate opportunities for Public sector collaboration and market engagement to signal changed requirements from suppliers.

A forthcoming review of the Council's Socially Responsible Procurement Strategy will fully investigate and include these opportunities and we will put in place procedures to measure the impacts of strategy annually over the period to 2030.

Scope 3 Emissions: The Impact of Staff Commute

Though small compared to the Procurement sector the Council's staff commute in 2019/20 caused around 9,000 tonnes of greenhouse gas emissions. This is comparable to the electricity (scope 2) emissions from all of our buildings in the same year. The pandemic has changed this pattern dramatically with large numbers of staff working from home for a long period, but as the lockdown and Covid restrictions lift the commute related emissions will undoubtedly rise again.

The Council is, however, in the process of developing a "Hybrid" working policy which will see many staff continuing to work from home for at least part of the week on a permanent basis. The carbon effects of this will need to be monitored closely but are likely to reduce associated emissions.

Alongside this we will also be looking at other behaviour change measures, linking closely with our Transport White Paper plans, which will encourage people to use modes of travel other than the car for staff commute where possible. Schemes like the existing salary sacrifice scheme to encourage cycling will be retained and options to extend this towards EV car purchase are also under consideration.

Progress will be monitored on this element of the strategy annually to gain understanding and proactively respond to the issues and challenges in delivering our targets as they arise.



The Council is developing a "Hybrid" working policy which will see many staff continuing to work from home

Behaviour Change

Almost all of the above actions will rely on good communication with staff, training and encouragement around behaviour change.

The need to continually engage with staff and stakeholders was very clearly referenced in the consultation exercise on the draft OPC and so we have ensured that this area is centrally embedded in our strategy. To assist the Council engaged the Centre for Climate Change and Social Transformation (CAST) to support the development of a toolkit and monitoring instruments to enable carbon-neutral thinking to be embedded across the all areas.

Responding to this we will be instigating a rolling programme of consultation and engagement, singling out specific topic areas and prioritising areas that are shown to potentially have the highest impacts

Central to this we have also established a strong link with our Schools service who are now developing methods to engage more fully with the youth of Cardiff on this agenda. This follows the very successful schools consultation process that the Cardiff Youth Council hosted on the draft One Planet Cardiff Strategy. The ambition is to embed climate change learning into the new school curriculum and to encourage individual schools to consider developing their own One Planet School approach, supported and championed by students.

We will be putting in place clear methods to gauge and monitor the impacts of these interventions and will report on them annually.

City Emissions: The Council's Direct Impact

The decarbonisation challenge at the city scale is significant and can only be tackled with strong partnership action and leadership alongside action at the national level.

For the Council's part however, we do have a strong suite of infrastructure projects planned that will have a direct impact on City Wide Emissions.

These include:

- Cardiff Heat Network which will bring low carbon heat to both council and non-council owned buildings in the Bay;
- Our Major Renewable Energy Projects which help to decarbonise the local electricity grid and the local waste water plant;
- Cardiff's Urban Forest (Coed Caerdydd) which has a target of 30% canopy coverage across the city by 2030 and will increase the city's carbon sequestration (absorption) capacity;

- Private Housing and Council Housing Retrofit projects, and
- The Transport White Paper which is making sustainable travel choices more accessible through cycling, walking and public transport interventions.

We have modelled the potential Carbon Impact of these projects and if fully implemented they could reduce the baseline emission for the city by around 22%. The table below gives details.

Collaboration is key to tackling city wide emissions. To make a material impact on the City's emissions we all need to work together to make a difference.

We must reduce our energy consumption and develop more renewables to accelerate that decarbonisation journey and 'meet in the middle'.

2019 GHG Emissions Baseline (tCO ₂ e - BEIS Reporting)	Cardiff Heat Network	Major Renewables	Coed Caerdydd	Private Housing Retrofit	Council Housing Retrofit	Transport White Paper	LULUCF Sequestration	Post Implementation GHG Emissions	GHG Emissions Reduction (Modelled)	
	GHG Emissions Savings (tCO ₂ e)	GHG Emissions Savings (tCO ₂ e)	GHG Emissions Sequestration (tCO ₂ e)	GHG Emissions Savings (tCO ₂ e)	GHG Emissions Savings (tCO ₂ e)	GHG Emissions Savings (tCO ₂ e)	GHG Emissions per Annum (tCO ₂ e)		GHG Emissions Reductions (Per annum)	Percentage Reduction (%)
1,626,059	9,046	2,977	13,372	2,546	2,455	328,576	-1,277	1,265,809	360,250	-22%



Collaboration is key to tackling city wide emissions. To make a material impact on the City's emissions we all need to work together to make a difference.



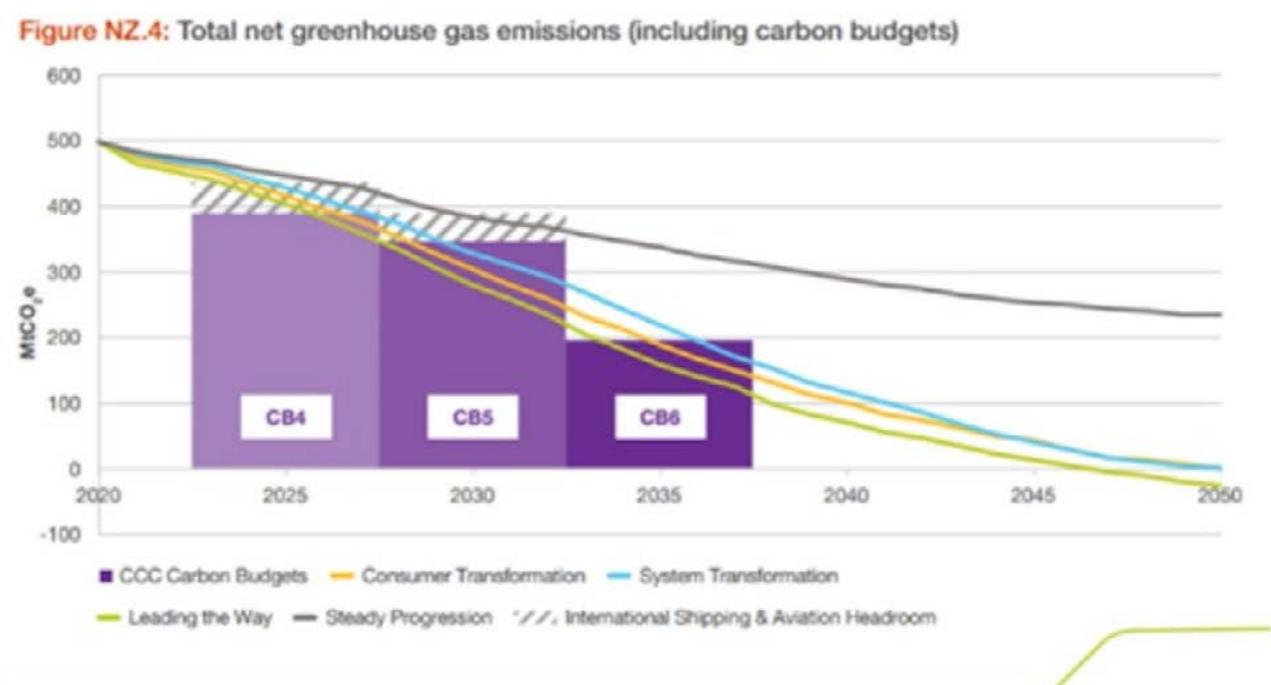
City Emissions: The Council's Direct Impact

The most significant reductions that are forecasted are from the implementation of the Transport White Paper provided it meets its ambition to reduce GHG emissions from road travel by 50% across the city. It is important to acknowledge that along with the implementation of decarbonisation and sequestration

projects, there will be a 'natural' decarbonisation process through the implementation of a number of national policies to meet national decarbonisation targets and we'll be monitoring the progress and impact of this as we progress through the delivery of One Planet Cardiff.

National Grid Future Energy Scenarios

National Grid projections for decarbonisation of the National Grid (Electricity and Gas)



Sourced from the National Grid's Future Energy Scenarios 21 (FES) Summary Report – details the overall modelled impact of different scenarios for decarbonisation of the National Grid (both electricity and natural gas), compared against the UK's national carbon budgets (labelled CB in chart below). Accessed via: <https://www.nationalgrideso.com/document/202851/download>

Further Medium/Long Term Commitments Needed

The Council's direct impact on City Wide emissions is significant but the remaining gap is wide and challenging. The Council has offered to take a central, coordinating role to help shape and steer the collective action that will be needed. However it is clear that strong collaboration, institutional commitment from major players, and widespread behaviour change will be needed to meet the goals. The carbon data analysis has clearly identified transportation and domestic property as the most urgent target areas for action, along with a need for more greening of the City to support biodiversity and carbon sequestration.

Transportation

The Council has already set in place a strong and proactive strategy for transport decarbonisation in its Transport White Paper. The findings of the carbon study underline the importance of delivering the key Transport White Paper projects in order to address the climate emergency, namely;

- Expanding on the Metro plans for new tram-train routes and stations, including a city cross rail;
- Introducing the new Bus Rapid Transit services, Park and Ride sites and making bus travel far cheaper to double the number of journeys made;
- Re-prioritisation of our streets to give more space to people walking and cycling to encourage the cleanest and mostly sustainable forms of transport; and
- Supporting and facilitating the transition to electric/zero emissions vehicles.

Domestic Property

The Council's direct reach in this area is limited to the upgrade of our Council housing stock and to our activities for retrofit in private sector housing, which are largely limited by grant funding. The impact of this work is not insignificant and similar retrofit work is being carried out by Housing Associations in the city. However, our analysis confirms that much more work is needed to stimulate a stronger interest and uptake of energy efficiency retrofit in private sector housing in the city. The Council is therefore committed to working in partnership with the City region to understand the

opportunities more fully and to develop a pathway to address this major issue.

In the first instance we will work to compile a detailed study to identify the current constraints, barriers and opportunities in the domestic retrofit field. Where possible we will do this with the City Region as a whole. This work will then need to explore external funding opportunities and present the case for continued and up scaled financial support from energy companies and government. Whilst the Council is unlikely to be able to directly deliver a project of the scale necessary we believe that we are in a strong central position to push for a robust regional level response, and to act as a central point to promote retrofit as the right thing to do, to connect homeowners to appropriate delivery mechanisms, and to monitor the impacts of this work.

More than any other OPC project, this area holds the potential for very significant co-benefits for the city and region, delivering carbon reduction whilst also increasing quality of life and social equity for citizens and providing new training and job opportunities to address the increased level of installation and manufacture required to service an increased demand. The current gas price crisis also brings into sharp focus benefits of fuel-efficient building stock. Alongside this we must do all we can to ensure that new build housing in the city doesn't make our carbon problem worse. Welsh Government's planning policy and building regulations already require very high energy efficiency standards and the Council will ensure that these policies are upheld in new development through its regulatory processes.

Carbon Sequestration

The re-greening of the city will also be a crucial element of our work and this will be steered through the approved Coed Caerdydd project. This seeks to increase the council's tree canopy by 25% and to instil land management techniques that stimulate and support biodiversity and carbon capture. The target will require more land than the council has direct control over and so once again partnership is key.

Collaboration and Engagement

Across all of our OPC activities the need for cross sector collaboration and continuous engagement with stakeholders is clear. This point was very strongly echoed in the responses to our consultation on the OPC strategy and so we have worked to embed these principles in the final strategy and action plan.

We are already working in partnership with the other major public sector organisations in the city on this agenda. The Cardiff Public Services Board has established a Climate Emergency sub-group which is now also attended by the major utility companies and Cardiff University. We are working on a collaborative agenda that will help us to model potential reach of all of the collective Public Sector Carbon Neutral Strategies, and have identified a list of projects with potential for strong collaboration benefits within the group. These include:

- An investigation of how we could collectively decarbonise our fleet vehicles and bring additional EV charging infrastructure to the city;
- Work to identify parts of our corporate estate on which to expand tree planting and implement more sustainable land management; and
- Work to share best practice on lower carbon procurement strategies.

We are also preparing to undertake a comprehensive **Energy Masterplanning** exercise with support from Welsh Government. This will look in detail at the energy demand and supply landscape in the city. It will give a much clearer and localised understanding of the major causes of our carbon emissions and will help to add detail to our target areas and action planning as we move forward. It will also no doubt provide a focus to broaden our partnership working as we identify in more detail the key emitters and potential solutions in the city.



Engagement and behaviour change

Engagement and behaviour change are essential to achieving a One Planet Cardiff.

We have engaged expert advice¹ to guide us in this area, and are developing a detailed and long term strategy for ongoing engagement to convey key messages, to encourage the uptake of more climate responsive choices, and to monitor the impacts of our efforts. Engagement means ensuring residents (including young people), businesses, and other city stakeholders are involved in decisions about how to cut emissions, while also improving wellbeing for communities and ensuring a vibrant local economy.

Engagement in decision-making is important at city level to co-construct an overarching vision; while neighbourhood and organisational engagement is essential for co-designing specific, tailored measures with residents and local employers.

Engagement also means everyone across the city being involved in delivering the actions required to reach net zero through changing our behaviour at home, at work, and in our communities. Around 60% of changes needed to achieve net zero will involve consumer behaviour change, while the remaining 40% will likely require behaviour change in workplaces and communities.

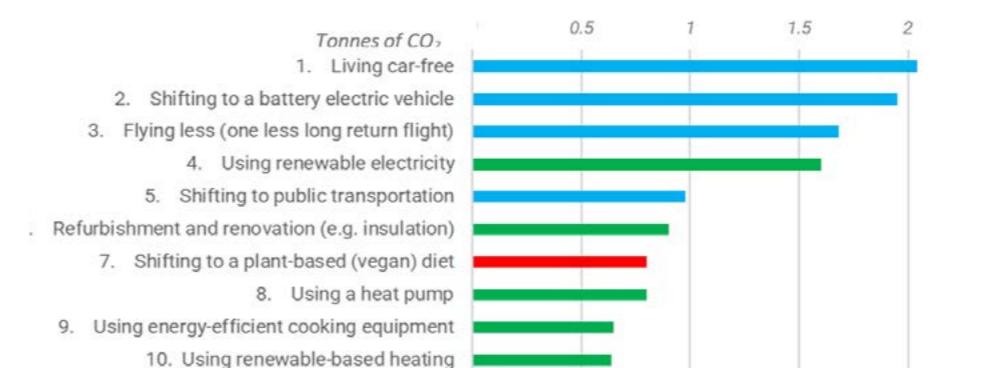
Behaviour change to reach net zero means travelling, eating, shopping, working and playing in new ways. Some of these changes we have already started to make. But the scale of the climate challenge means we

need to accelerate progress and think beyond small-scale actions – this is about a fundamental change in lifestyles. Importantly, though, these behavioural changes will not make us worse off – in fact, they could improve our health and wellbeing, save us money, and strengthen communities.

The top ten actions people can take to reduce their carbon footprint have been researched and are shown here. They include several transport (blue) and energy use (green) actions, as well as dietary change (red). Cutting down on driving and flying, using green products and technologies, and eating a healthier diet, make the biggest difference.

Despite wanting to cut their carbon footprint, many people face barriers to taking these actions. Evidence shows that policies and other measures are required to make it easier, cheaper, more attractive and the ‘natural choice’ to take low-carbon action. Better information may help educate people about which choice is lower carbon and highlight the wider benefits of action (e.g., that walking and cycling can improve physical and mental health); but economic, social, institutional and infrastructural measures are also required to translate people’s good intentions into actual behaviour change.

Some of these measures can be taken by Cardiff Council, and others by Welsh or UK governments, businesses and other organisations. Crucially, they should be co-designed with those who will be affected by them to ensure they are workable and supported.



¹The Centre for Climate Change & Social Transformations (CAST) brings together the latest evidence of what works to engage people with climate change and how to change behaviour to reach net zero.

Development of One Planet Cardiff Behaviour Change

Our expert advisors have identified nine steps towards developing a One Planet Cardiff Behaviour Change & Engagement Strategy that comprise (a) engagement in decision-making, (b) trialling communication and behaviour change interventions, and (c) monitoring and evaluation. We will be using this advice to design an ongoing strategy of engagement, starting first with our own staff and exploring opportunities to encourage our public sector partners to do the same.

We will be using the advisory report to create tailored engagement exercises through the duration of the OPC delivery programme. Wherever possible we will focus on those areas where we see that the highest impacts could be made, and will aim to provide simple, well researched and compelling information to help

stakeholder and Citizens make smarter carbon and climate responsive choices.

The youth of Cardiff will form a key focus on this activity and our Schools service is already exploring ways to embed Climate Change issues into the new schools curriculum. It is the youth of Cardiff who will be affected most by the Climate Emergency and it is right that their voice is heard now. Our aim is to encourage all schools to consider a site specific One Planet approach and to better equip our youth community to understand the issues, and act as champions for the behaviour change that is needed.

Suggested workstreams to engage schools with the One Planet agenda:



Engagement

Autumn 2021

Map the Key themes of the One Planet Strategy to the four purposes of the Curriculum for Wales 2022 and identify opportunities to link with the Areas of Learning and Experience.
Host a child friendly 'One Planet' launch with School Eco-committees.
Run a Minecraft competition – Build what 'One Planet' mean to children and young people.
Work with creative partners to run summer workshops with young people considering the development of a promotional characters to champion environment, sustainability and the overarching One Planet agenda.
Engage with schools to co-construct a vision of how the 'One Planet' agenda can be realised within their school.



Development

Spring – Summer 2022

Work with up to three Secondary school clusters to pilot the co-construction of the curriculum, based on the school's vision.
Develop a One Planet ambassador network with schools.
Identify and co-construct pilot experiences for schools based on at least two of the seven themes of the One Planet strategy, with the ambassador network.



Implementation

From Summer 2022

One Planet ambassador schools host 'show and tell' event to showcase the work that they have developed and the experiences available to schools.
Work towards an agreed target of schools pledging to embed the One Planet agenda into their curriculum design.
Co-construct support and guidance for schools to enable the promotion of career pathways for pupils, which support the realisation of the seven key themes of the One Planet Strategy.

Next Steps: Introduction to the OPC Action Plan

In order to control and implement the commitments of the One Planet Cardiff Strategy, we have developed an action plan approach that sets out clearly the short-term projects and initiatives that we've already committed to, and details the medium to long term actions that we know we need to develop and progress in the journey to 2030.

It is the intention to report annually on our progress both on the implementation of our committed actions, and also on the business case development and subsequent approval of any new and emerging initiatives over each 12 month period.

The Action Plan will use the Carbon Impact Evaluation tool to monitor outcomes and to appraise proposed projects. It will clearly identify carbon statistics and identify the benefactor (city or council) and indicate the level of economic and social benefit potential of each project. We will also use the Action Plan to report on progress towards the Council and City Zero Carbon Targets as required by Welsh Government.

This action plan is a 'living' document, which will evolve as we progress, recognising national and regional level changes and responding to our successes and lessons learned as we move towards 2030. It has been, and will continue to be closely informed by our detailed analysis of the seven key action area themes that we identified in our draft strategy, and by the feedback that we received from the public, school children and other stakeholders in our consultation process.

Projects will be broadly categorised into short/ immediate actions, medium term actions and long terms actions.

- **Short term:** agreed/funded actions with known carbon outcomes;
- **Medium term:** detailed propositions with modelled carbon and business case analysis; and
- **Long term:** developing strategies to address gaps and challenges.

Annual Monitoring and Evaluation

We will monitor the impact of our actions by calculating annually;

- The Council's Carbon Emissions using and developing the Welsh Government framework for calculating emissions covering Scope 1, 2 and 3;
- The City's Carbon Emissions using BEIS data;
- The carbon and other Impacts of proposed projects using our Carbon Impact Evaluation Tool.

We will evaluate progress by regularly updating the OPC Action Plan setting out progress against our Carbon Neutral by 2030 targets and engaging with City Wide stakeholders in line with our developing engagement and behaviour change strategy.

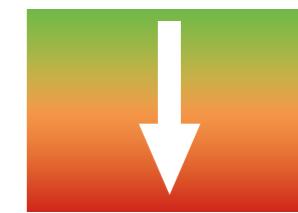
We also plan to build on our current annual report to the Carbon Disclosure Project to report annually the progress our City is making towards both adaptation and mitigation.

Carbon Disclosure Project (CDP)

CDP provides the global platform for cities to measure, manage and disclose their environmental data. Nearly 1/5th global greenhouse emissions are reported via CDP with over 8,000 organisations including 550 cities and 100 US States using the framework to report.

Cardiff Council already report to CDP and we believe we can build on existing work and utilise the framework to demonstrate our progress and activities around climate change mitigation and adaptation. CDP has been adopted by the Cardiff Capital Region as a framework to monitor and evaluate the region's performance against its decarbonisation strategy.

CO₂ Baseline 2019/20



CO₂ Neutral 2030/31

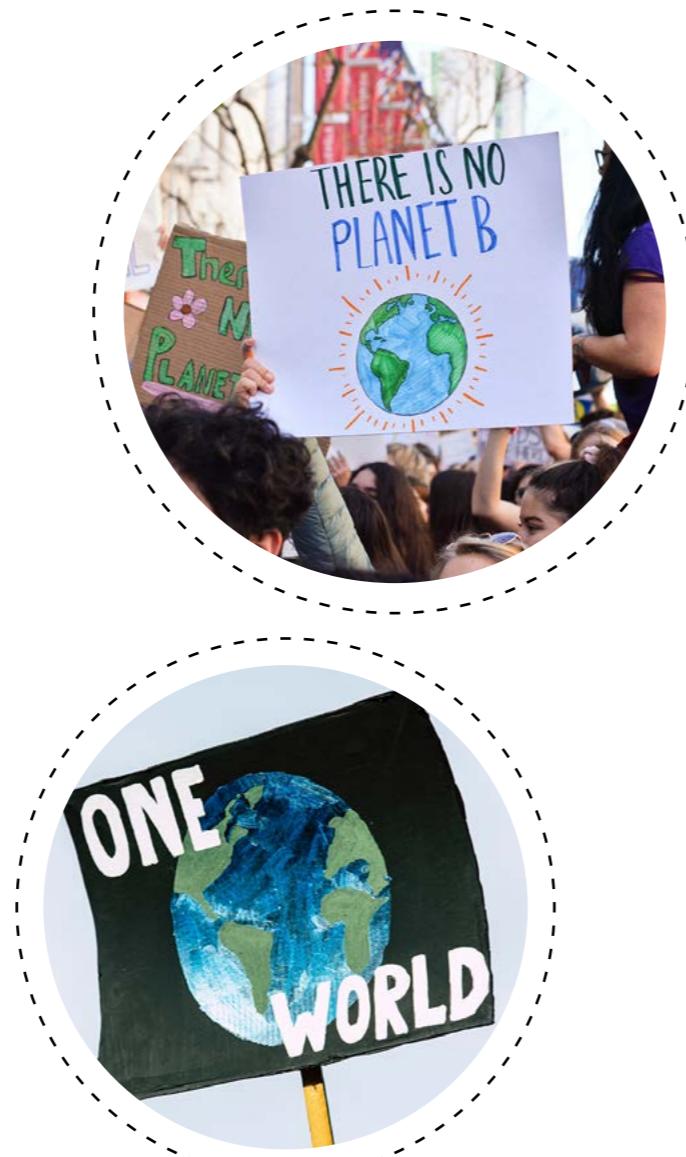
| Governance

We have established a One Planet Steering Board to oversee the development and implementation of the Strategy.

This Board consists of key Cabinet Members and lead officers and meets monthly to monitor progress. The Board has authority to steer the direction of travel for the ongoing work and has powers to agree how some limited capital and revenue budgets can be allocated in-year to address emerging issues and opportunities. In this regard, a recurring Capital Fund has been allocated to help deliver smaller OPC projects and 'quick win' projects. Revenue has also been allocated to assist with feasibility and impact studies to support project analysis and prioritisation.

Any major new project or policy initiatives that emerge will be guided by this Board but will be subject to the Council's normal authorisation processes, meaning that business cases will be approved at Cabinet level and any subsequent financial decisions made through the Council's budget framework process.

Alongside this Steering Board we have also established a Climate Emergency Board consisting of our Public Sector Partners in the City and also including the major utility companies and Cardiff University. This Board will consider and recommend the collective and partnership activities that we feel will best address our common issues and seek to monitor and measure the impact of these on City Wide emissions. In turn, this Board reports to the Cardiff Public Services Board which can itself authorise certain actions or seek the individual authority of partner organisations to participate in identified initiatives.



The scale and Challenge of the Climate Emergency is clear. In developing the One Planet Cardiff Strategy we have conducted an extremely broad investigation of the issues that are contributing to the climate emergency in the city and the potential solutions that will help change our course. We have identified and been led by international best practice and have been closely informed by widespread stakeholder feedback. Crucially, we have also now undertaken a detailed analysis of our carbon position and have a clear picture of the challenges that we face.

This strategy is honest about the scale of the challenge, and that we do not yet have all of the answers. But it also commits to very clear and ambitious targets for the Council to become carbon neutral in its activities by 2030, in line with Welsh Government ambitions, and for us to work in partnership with key stakeholders to develop a pathway for a Carbon Neutral City over the same time period.

The range and complexity of the issues to be addressed is huge but almost all of them lead back to the fundamental need for us to be more efficient in the energy we use and to move the creation of this energy away from fossil fuels. We've demonstrated that we have a good starting position for this challenge, and willing partners to work with.

Our action planning approach to implementation means that we can regularly report on, review our progress, and frame our ongoing decision making against this progress and the lessons learned.

We have strong governance and control processes to help steer the strategy and a solid basis for the partnership working and stakeholder engagement that will be crucial for delivery.

The table overleaf summarises our initial action plan and provides a holistic overview of the actions that we now need to take.



We have strong governance and control processes to help steer the strategy and a solid basis for the partnership working and stakeholder engagement that will be crucial for delivery.

| Summary and Key Actions

Immediate/Short Term Actions

PROJECT TITLE	PROJECT DETAILS
Transport white paper	Continue to implement the approved Transport White Paper projects with a target to reduce GHG emissions from road travel by 50% across the City.
Energy Efficiency Retrofit in the Council Estate	A new Corporate Property Strategy 2021-26 to be published in November 2021 which will outline how the Council will reduce the carbon output of its operational and schools estate, and off-set with new renewable energy sources, targeting a 60% reduction by 2030
Heat Network Delivery of Phase 1	Begin construction of Phase 1 of the Cardiff Heat Network by winter 2021
Council Fleet Transition Low Emission Transport	Develop and Implement Council Vehicle Replacement Strategy in line with the Low Emission Strategy to deliver a Low Carbon Fleet ensuring that a minimum of 90 Council vehicles are replaced by EVs by 2022.
Coed Caerdydd Cardiff's Urban Forest	Development of a holistic programme approach to tree planting and land management city wide to increase biodiversity and expand the city's tree canopy by 25%
Low Carbon New Build for Council Housing Estate	The Council has implemented a large housing development programme delivering ~2,700 new council homes over the next 6-7 years. Over 2,000 council home new builds (planned over 10 year programme) will meet higher standards. Around 500 already built out or in construction will exceed the previous building regs standard (SAP B+).
Energy Efficiency Retrofit for Council Housing Estate	Energy Retrofit Scheme for low rise public housing blocks. The programme will be phased to tackle the worst performing blocks first over a 10-year period which eventually should see over 700+ low rise blocks improved
LED Street Lighting	Continued implementation of LED replacement and dimming measures
Cardiff Food Strategy	Promote healthy, local and low-carbon food by delivering the Cardiff Food Strategy by 2024. This includes the development of a strategy for a carbon responsive, holistic approach to food in schools across Cardiff, measures to address food deserts in the city and initiatives to increase sustainable local growing
Schools engagement and action plan	Establish a curriculum integrated climate emergency education programme to stimulate the creation and implementation of school specific action plans
City wide behaviour change programme	Roll out an ongoing programme of engagement with citizens, businesses and workers, targeting high impact areas of behaviour change, and set in place a systematic methodology for measuring and monitoring impacts

Medium/Longer Term Actions

PROJECT TITLE	PROJECT DETAILS
New Build in the Council's Corporate and Schools Estate	To ensure delivery of the One Planet Cardiff carbon reduction targets, within both the Education and Corporate estate, it is proposed that by 2024 any Council procured new build development will be Carbon Neutral, exceeding current Building Regulations standards.
Major Renewable Energy Projects	Develop a pipeline of potential renewable energy generation projects for subsequent approval and implementation from 2022
Single Use Plastic Position Statement & Action Plan	Develop a strategy with a focus on procurement. All council procurement activities need to be considered for sustainable alternatives to single use plastics. Provision of re-useable refuse sacks to reduce single use plastics. Currently at a trial stage with a view towards future implementation.
Low Energy Private Housing Retrofit	Develop a co-ordinated partnership strategy to promote an upscale in housing energy efficiency retrofit across all tenures of housing targeting up to 2,000 houses per year by 2024
Business travel initiatives	Develop a strategy to reduce emissions from grey fleet and business travel by facilitating a low carbon pool car/car club approach, reviewing mileage claim policies and considering the introduction of salary Sacrifice schemes for EV
Low Carbon/Circular Economy Procurement Strategy	Develop and publish a revised procurement strategy to assist in lower carbon specification, to favour low carbon supply activities and to embed circular economy principles where possible
Staff Commute Initiatives	Promote opportunities to reduce the carbon impact of staff commute by progressing hybrid working opportunities, promoting a shift to sustainable forms of travel and considering a Salary Sacrifice scheme for EV
Public Sector Partnership working	Collate total impact of collective carbon reduction strategies in the city and identify opportunities for acceleration through collaboration