NETZERO
PERTH AND KINROSS

Interim Climate Emergency
Report and Action plan

PERTH &
KINROSS
COUNCIL

Towards a zero carbon and climate resilient Perth and Kinross

December 2019

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Introduction by Leader of the Council and Chief Executive

> *"My generation has failed in its responsibility to protect our planet – that must change. The climate emergency is a race we are losing, but it is a race we can win. The climate crisis is caused by us and the solutions must come from us".*

UN Secretary-General António Guterres at the opening of the Climate Action Summit, September 2019

Introduction by Leader of the Council and the Chief Executive

Overwhelming scientific evidence has prompted local and national governments to declare climate emergencies, and this urgency has been given extra impetus by emerging movements globally and locally - raising awareness of the catastrophic consequences of inaction. In June this year the Council declared our support for the Scottish Government and UK Parliaments' climate emergency statements.

We must turn this intent into practice, and this interim report sets out our next steps, outlining the initial route map to take us to a net zero carbon and climate resilient Perth & Kinross.

This report builds on the substantial work that the Council and its partners have already taken to address the climate challenge. However, we recognise the scale of this challenge, if we are to achieve the significant societal and technological shifts to move us from a carbon-based economy, to a carbon free and resilient future.

All of us in the Council need to contribute to addressing climate change locally. We recognise that we will need to tap into greater levels of innovation, including new technology, new ways of working, and new ways of engaging with our communities.

The Council`s activities only account for 3% of emissions produced in Perth & Kinross. Most of the emissions come from the way we all produce and consume energy - from heating our buildings, driving our cars, buying consumer goods, and disposing our waste - so we all have a part to play.

Therefore, the Council will use its community leadership and influencing role to work with other public agencies, businesses, communities and citizens to develop a shared vision, and strategy to address the climate emergency. This will be a central part of the emerging Perth & Kinross Offer, where we will work together across all parts of our community, to identify what we can all do locally, to address this major global challenge.

We believe that a resource efficient and climate resilient area will not only be a better place to live, it will also be fairer, more competitive and better placed to ride out future climate and economic shocks.

Together we can make these vital changes. We have to - we owe it to our future generations.

Murray Lyle   Karen Reid
Council Leader   Chief Executive

1	**Setting Out the Challenge**

a)   **Interim Report and Action Plan - Purpose**

In June 2019 Perth & Kinross Council acknowledged its responsibilities, by unanimously passing a Motion (Appendix 1), which committed the Council to lead by example in accelerating the transformational change required to address the climate emergency. The Chief Executive was tasked with setting out a route map to deliver through co-production with citizens and other stakeholders, a low carbon Perth & Kinross.

This report is the first stage in that journey. It is deliberately an interim document and forms the basis to start the conversation with our national and local elected representatives, our partners and our communities, over the next few months (as detailed in part 2 below) - giving all partners and all citizens a chance to play a part in delivering a low carbon and climate resilient Perth & Kinross. This report sets out our current status, and our current thinking, by highlighting:

1)   the size and complexity of the challenge as it relates to the Council as an organisation, and the wider Perth and Kinross area.

2)   the increasing range of international, national and local policies, targets, and legislation; and how they will direct and influence our activities over the next decades.

3)   our proposals for taking forward comprehensive engagements on climate change, to develop a shared vision, strategy and actions, which will be essential for the entire Perth and Kinross area to achieve a net zero carbon future.

4)   the extensive activity the Council and partners are already carrying out, to address climate change mitigation and adaptation; as well as detailing short, medium, and long term actions, and options, which demonstrates our commitment to accelerating progress on climate change.

5)   our commitment to "just transitions", to ensure that climate change actions progress hand in hand with fairness and equality; and that no one in a vulnerable situation is disadvantaged by climate change transformation.

6)   how we are currently organised to work together, and how that close working can evolve to ensure our future climate change activities remain unified, focussed and effective.

b)   **The Challenge and Our Response**

i)   *The Climate Emergency*

Whilst for some time, there has been almost universal recognition that climate change is one of the biggest risks facing our planet, the urgency of action was brought sharply into focus in 2018 by the [Intergovernmental Panel on Climate Change](#) (IPCC), which stated that we must limit global warming to 1.5°C. Even with a rise of 1.5°C, IPCC reported that there would be risks to health, livelihoods, food security, water supply, human security and economic growth. A rise of 2°C would be even more catastrophic (see Figure 1).

The IPCC warns that **we only have a limited period left (2030) to take the decisive and serious action** required to avert this crisis and avoid the worst impacts.

Figure 1 Impacts of Different Climate Change Scenarios

Climate change is here today:
- The frequency of heatwaves has increased around the world. Many extreme events are being made more likely due to climate change.
- Sensitive ecosystems such as coral reefs, are being damaged due to extreme heat.
- Animals on the land and the ocean are shifting their territories in response to climate change.

Unchecked emissions growth would lead to very severe and widespread climate change at 4°C or more by 2100.

Damaging climate impacts are already being felt today at 1°C of warming.

Damaging climate impacts are already being felt today. Reducing global emissions faster will hold warming to lower levels. Every degree matters.

The world is moving towards a low-carbon future, reducing some risks. We are currently on track for around 3°C of warming by 2100.

Keeping below 1.5°C would limit many important risks further, helping to protect key ecosystems and reducing impacts on poorer people around the world.

4°C 1°C

3°C 1.5°C

2°C

The world has committed to reduce emissions faster to keep warming 'well below' 2°C. This would help limit the most damaging effects of climate change.

Adapted from the UK Committee on Climate Change Infographic

In May 2019 the UK Parliament declared a climate change emergency. This was followed by the Climate Change Secretary's statement to the Scottish Parliament on 14 May 2019.

"There is a global climate emergency. The evidence is irrefutable. The science is clear. And people have been clear: they expect action. The Intergovernmental Panel on Climate Change issued a stark warning last year: the world must act now."

ii) *Mitigation and Adaptation*

Addressing climate change is complex and challenging. Actions centre around two main areas of work:

1. **Mitigation**- this is what we need to do to reduce our greenhouse gas emissions. This can be achieved by making our homes, businesses and transport more energy efficient, or switching to carbon neutral energy sources. It can also involve positive actions to enhance our ability to absorb or capture Carbon Dioxide (CO_2) such as increasing our woodland cover, or the restoration of peatlands.

2. **Adaptation** - the actions we need to take to make adjustments to deal with the impacts of climate change. This could include making changes to our buildings, so they keep cool during hotter summers, or are less at risk of being flooded. It could be using scarce water resources more efficiently, or making changes to the crops we grow, or trees we plant in our forests, so that they are less vulnerable to new pests and diseases, or to storms or wild fires (see part 9 of this report).

iii) *Greenhouse Gas Emissions*

Whilst much of the public attention has centred on carbon emissions, if climate change is to be mitigated, it is essential that we minimise the emissions of all greenhouse gases. The key gases vary depending on the sector - for example while the focus in the domestic sector may be carbon dioxide; for the agricultural sector, addressing methane emissions also has a prominent role.

To date the Council mitigation focus has been on reducing its own emissions. Recent Scottish climate change legislation however, gives a clear role for the Council to work with its partners, citizens and businesses to ensure that the **whole Perth & Kinross area becomes a net zero carbon place by 2045 at the latest**. This means that we must reduce the carbon emissions to a level which are equal to or less than the ability of our natural ecosystems (i.e. our woodlands and peatlands) to absorb and retain carbon.

Figure 2 The Journey to Zero Carbon
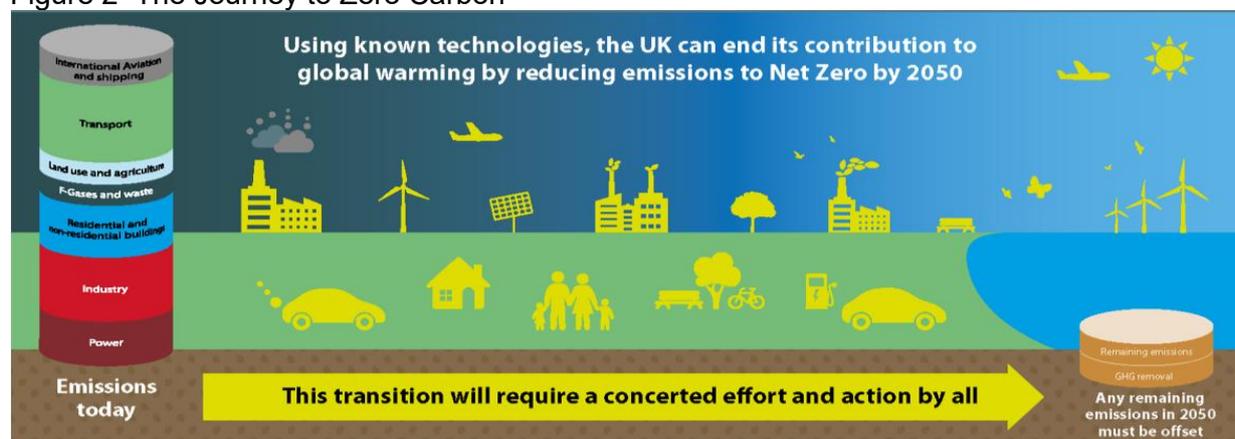
Source: UK Committee of Climate Change (based on UK target of zero carbon by 2050)

iv) *Costs and Opportunities*

Delivering a low carbon future will be expensive and will require difficult decisions on spending options. This report highlights multiple occasions where we have already accessed different funding sources to make a difference (over £49 million in funding has been secured since 2013), and we need to maximise access to further funding opportunities to achieve our ambitions.

Figure 3

The UK Committee on Climate Change estimated the additional annual cost to the economy of achieving net zero emissions is 1-2% of the country's gross domestic product (currently £2 trillion) - therefore indicating that £20-40 billion needs to be spent each year on carbon reduction, by 2050.

Source: UK Committee of Climate Change

More positively, many low carbon measures will deliver energy savings with resultant lower energy bills for citizens and organisations. Fundamentally however, several key studies, most notably the Stern Review: The Economics of Climate Change, have shown that delaying action will cost society much more in the longer term. This study indicated that for each tonne of CO_2 we emit, it causes damage worth at least $85, but emissions can be cut, at a cost of less than $25 a tonne.

Figure 4

There are many benefits of phasing out harmful emissions

For the economy
New green industries with new jobs and export opportunities for the UK.

For the individual
Quieter streets, cleaner air, less congestion.
Smarter cities and more comfortable homes.
Healthier lifestyles, with more active travel and healthier diets.

For the country
More biodiversity, cleaner water, more green space to enjoy.
Reduced global warming, avoiding climate damages like flooding.

While climate change brings fearsome risks it also brings huge opportunities if we get our response right. The cost of mitigating and adapting to climate change is far outweighed by the economic benefits – in terms of damage avoidance, extra growth achieved through new investment and infrastructure, prosperity boosted through innovative technology, and profits made from new business opportunities (see Figure 4).

Source: UK Committee on Climate Change

v) Human Health and Biodiversity

A changing climate creates significant public health risks including death and injury from extreme weather, heat and flooding; increased effects from air pollution; concerns over food security; the spread of disease; the displacement of populations; and increased levels of mental ill health. Conversely climate change adaptation and mitigation measures have the potential to deliver benefits to health and wellbeing - for example, well insulated and ventilated homes, increased active travel, strong social cohesion, sustainable food systems, and a reduction in air pollution.

Some parts of Scotland's population are particularly vulnerable to the health impacts of climate change, including those with existing health conditions and our ageing population, with the greatest effects being felt in areas of high deprivation.

Regionally, the Tayside Joint Public Health Protection Plan establishes priorities for the Tayside area, taking account of the key challenges identified nationally in relation to communicable diseases, and also the area's ageing and growing population projections. Tackling climate change is one of the core principles of this Plan.

Climate change will also be catastrophic for the diversity of the planet`s plant and animal species, which we all rely on for a balanced ecosystem. All public bodies in Scotland have a legal duty to further the interests of biodiversity. Enhancing biodiversity by protecting and restoring ecosystems can help us reduce the extent of climate change and cope better with its impacts. This is covered in part 7 of the report.

vi) *Behaviours*

Most of the reductions in emissions in recent years have come from closing coal power stations and cleaning up heavy industry. That was the easy part. It's a lot harder to reduce emissions from transport, agriculture and buildings. That will require much greater use of renewable energy, and infrastructure (to capture and store remaining carbon emissions), and especially changes in our behaviour.

Recent analysis by the Committee on Climate Change shows that changing technology alone will be insufficient to reach a net-zero carbon target. Technology alone can only account for 38% of the required reductions in emissions.

A truly successful response to climate change requires us not just to change our technology but to change our whole way of living and of thinking. Figure 5 shows that 62% of emissions reductions have to come from societal/behavioural changes, either directly, or in combination with technology. We need a revolution in way we live. This is about much more than just cutting emissions – it's about turning our thinking on its head, to plan for a sustainable future in which we are responsible consumers and responsible custodians of the planet's future.

Behavioural change requires the involvement of our citizens and businesses. It also requires the Council and other public sector agencies to understand and, where possible, remove the barriers to behavioural change. It is only therefore, through working together that changing behaviours will be achieved.

Figure 5 Behaviour and Technology Impacts
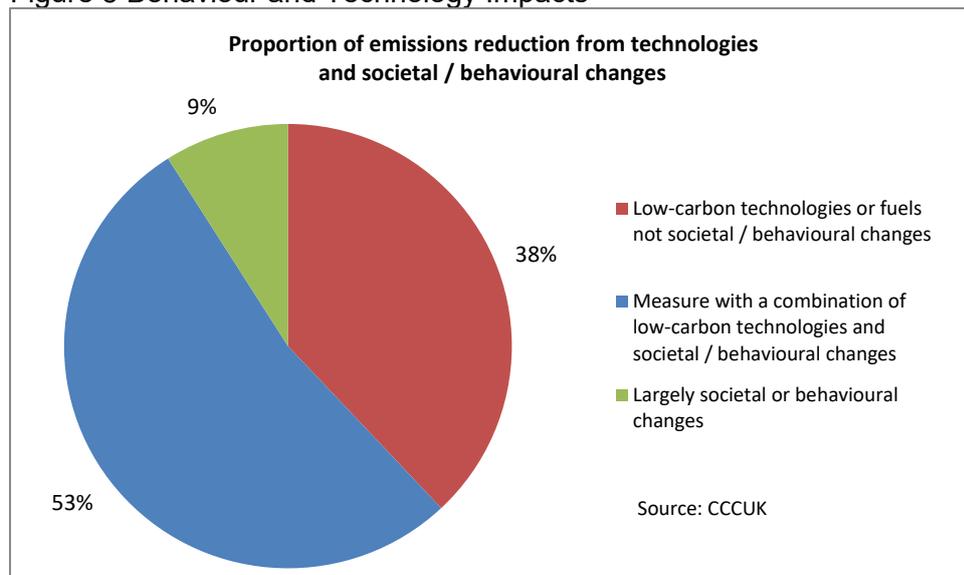
Source: UK Committee on Climate Change

vii) *Setting targets*

Whilst several nations and cities throughout the world have set ambitious targets which pledge to reach a carbon neutral position much earlier than national targets, many have done so without developing evidence to demonstrate how these targets might be achieved, and how much that will cost. Also, some have set targets without engaging with those partner organisations and communities, which are vital to sharing the delivery of the change.

We must engage with all our stakeholders and take a shared responsibility for setting targets which are realistic, achievable, and have the commitment of all. Therefore, we aim to jointly develop targets with our communities, taking into account different scenarios, and being realistic about the challenge and costs involved for each scenario - see part 2 of this report. (Action SA2 – Appendix 2)

c)   Our Targets – International, National, Local

i)   *Introduction*

International bodies and national governments have responded to the climate change emergency by setting increasingly ambitious targets. The following summarises the most significant targets for Perth and Kinross arising from international, EU, UK and Scottish sources.

ii)   *International*

The main targets are:

Paris Agreement 2015 - sets a target to keep the global temperature rise below 2°C above pre-industrial levels and to attempt limiting the overall increase to 1.5°C. Nations are required to work towards the elimination of climate change through a number of measures under the Agreement's obligations, as well as report on emissions and implementation efforts.

United Nations Sustainable Development Agenda 2030 - Goal 13: Climate Action - sets the requirement for nations to 'Take urgent action to combat climate change and its impacts' by 2030.

iii)   *UK Targets*

To deliver its international obligations and comply with EU legislation, the UK Government has set a target to be carbon neutral by 2050, with the introduction of the **Climate Change Act 2008**. This includes both carbon and other greenhouse gases.

iv)   *Scottish Targets*

Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 – set new targets for Scotland:

- ➢ Net-zero greenhouse gas emissions by 2045
- ➢ New interim targets, to reduce greenhouse gas emissions - 56% by 2020, 75% by 2030, and 90% by 2040

Scottish Government's Programme for Scotland 2019-20 - confirms the net zero targets for greenhouse gas emissions by 2045 and sets very ambitious targets, which may be included in future legislation. The targets for transport are:

- ➢ Phasing out new petrol and diesel cars by 2032.
- ➢ Creating the conditions to phase out the need for all new petrol and diesel vehicles in Scotland's public sector fleet by 2030.
- ➢ Phasing out the need for all petrol and diesel cars from the public sector fleet by 2025.

The Programme`s targets for the energy sector are:

➢ Developing regulations so that all new homes from 2024 must use renewable or low carbon heat.
➢ Phase in renewable and low carbon heating systems for new non-domestic buildings consented from 2024.
➢ Reaching Energy Performance Certificate (EPC) Band C by 2040 for all Scottish homes.
➢ Under the new Fuel Poverty Act 2019, no more than 5% of Scottish households will be in fuel poverty, and no more than 1% will be in extreme fuel poverty by 2040.

v)   *Perth & Kinross Council*

The need to address climate change is already embedded in many Council plans and strategies. Our main strategic documents - the Community Plan, the Corporate Plan and our Local Development Plan - all set out our aspirations to address climate change by reducing our emissions and by making our area more resilient towards the impacts of climate change. In some cases, targets are set however; the targets need to be refreshed to keep pace with the emerging statutory and policy targets set by UK and Scottish Governments. (Action SA2 – Appendix 2)

d)   Current Emissions in Perth & Kinross, and Greatest Opportunities for Change

i)   *Emissions in Scotland*

Figure 6 shows that across Scotland transport, agriculture and industry are the highest contributors of greenhouse gases, with forestry providing a significant capture of carbon, to offset emissions.

Figure 6 Scottish Greenhouse Gas Emissions (figures are expressed as million tonnes CO_2 equivalent)
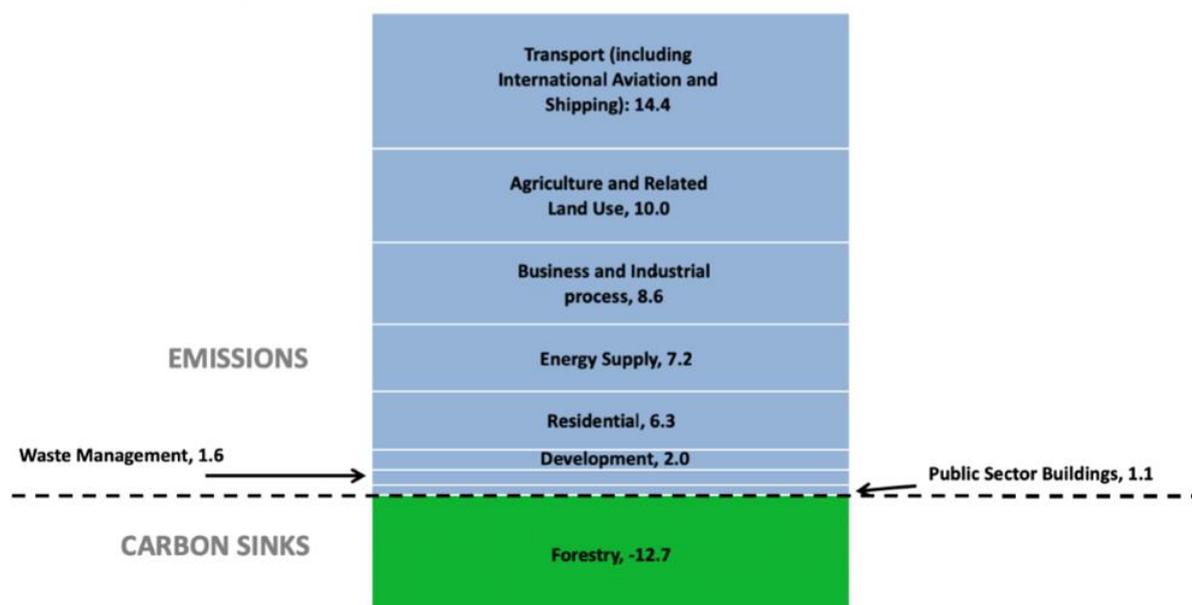
Source: Scottish Greenhouse Gas Emissions- Scotland 2016

ii)   *Emissions for Entire Perth & Kinross Area*

Across Perth and Kinross, there is a continued reduction in both total CO_2 emissions and per capita (per person) CO_2 emissions. This follows a trend across Scotland, although per capita

emissions in Perth and Kinross remain consistently higher than the average across Scotland, as shown by Figure 7 and 8.
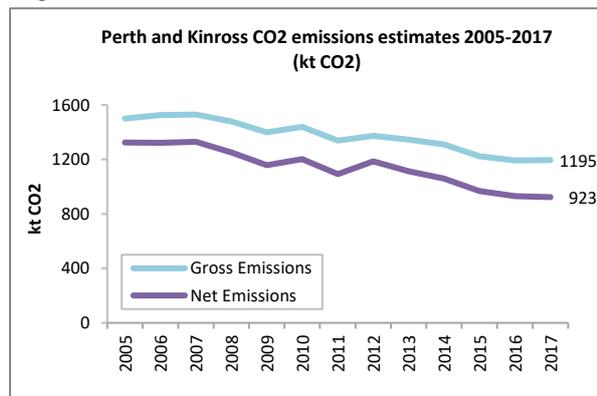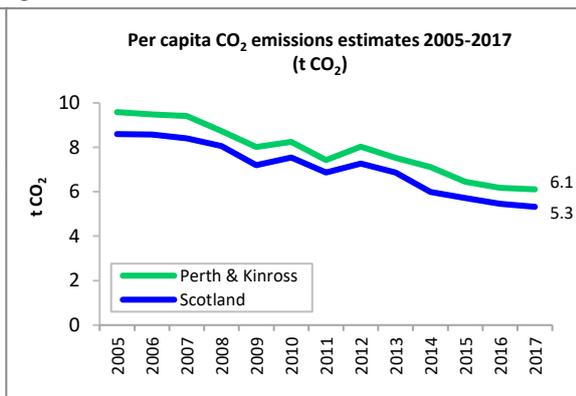
Figure 7

Figure 8

Perth and Kinross CO2 emissions estimates 2005-2017 (kt CO2)

Per capita CO_2 emissions estimates 2005-2017 (t CO_2)

Source: Department for Business, Energy & Industrial Strategy

The latest available area-wide emissions data (2017) recorded gross emissions of 1,195,000 tonnes of carbon dioxide (CO_2) for all activities in the Perth and Kinross area. However, this is offset by land use such as forestry, acting as a "carbon sink" which absorbs CO_2. Therefore, the balanced **net CO_2 emissions by Perth and Kinross, contributing to climate change damage were 923,000 tonnes**.

Figure 9 – Perth and Kinross area-wide emissions data (2017)

Illustration of a tonne of CO_2 - www.esa.org
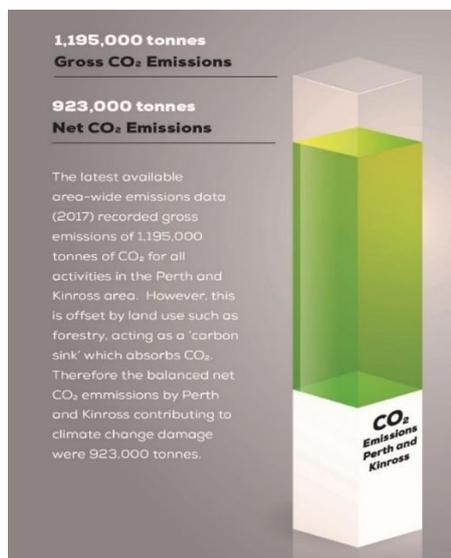
The following part of the report highlights that the Council is a relatively small direct contributor to overall emissions in Perth & Kinross. To inform our future actions we need to consider those emissions which are under the Council`s direct control to reduce, those emissions that we have some influence over, and those emissions where our influence is limited.

Using transport as an illustration:

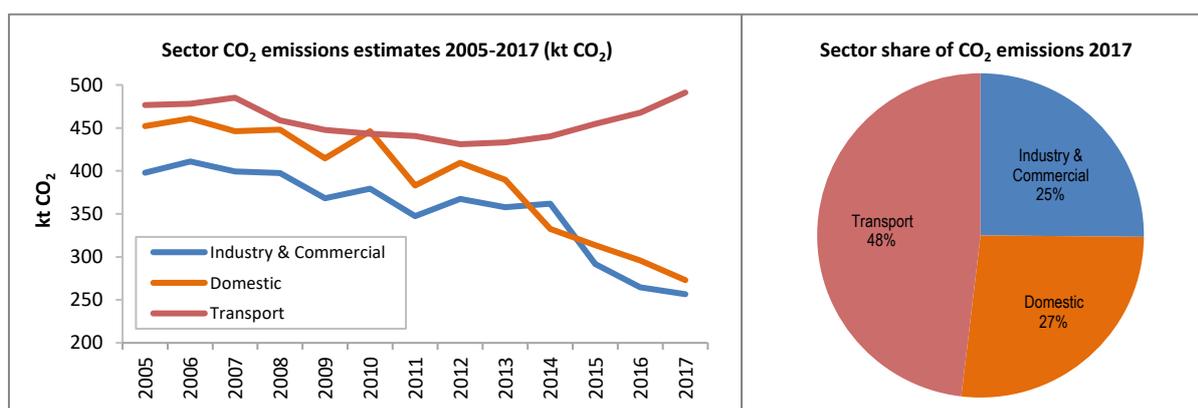| Emissions	Transport Actions
Council has direct control	Deciding to change Council Fleet from petrol/diesel to electric or other low carbon vehicles
Council has influence	Taking measures such as parking charging policies, subsidising local bus transport, and encourage local residents to use alternative forms of transport
Council has very little influence	Road uses travelling on the M90/A90 or the A9 through Perth and Kinross to/from other Scottish cities

The net area CO_2 emissions data for the whole Perth and Kinross area represent a combination of sources, which are either within or outwith our scope of influence, as shown below.

Scope of influence	Emission source
Within Perth and Kinross Council influence	Industry/Commercial/Domestic Gas and Electricity, Large Industrial Installations, Agriculture, A roads and Minor roads.
Outwith Perth and Kinross Council influence	Motorways, Trunk Roads, Railways, Large Industrial Sites and certain land-use.

In 2017, **85% of Perth and Kinross area emissions were identified as being within the scope of influence of the Council**. Of this, the Transport sector accounted for 48%, Domestic sector 27% and Industry and Commercial 25%, as shown by Figure 11 and 12.

Figures 10 and 11 - CO_2 emissions within the scope of influence of Perth & Kinross Council (by Sector)

Source: Department for Business, Energy & Industrial Strategy

Figure 11 shows that for CO_2 emissions within the scope of influence of the Council, although emissions from industry, commercial and domestic sources are reducing, the transport related emissions are increasing. This also closely follows the trend across Perth and Kinross as a whole.

Therefore, this indicates that in terms of prioritisation of activity to areas of greatest impact, transport is the most significant sector to target.

iii) *Perth & Kinross Council Emissions*

Whilst we in the Council acknowledge our responsibilities towards climate change, our emissions are only a small part of the overall emissions profile of Perth & Kinross. The direct carbon emissions from the Council account for less than 3% of the total Perth & Kinross emissions (Figure 12).

Figure 12: Comparison of Emissions (Perth & Kinross area compared to Council)
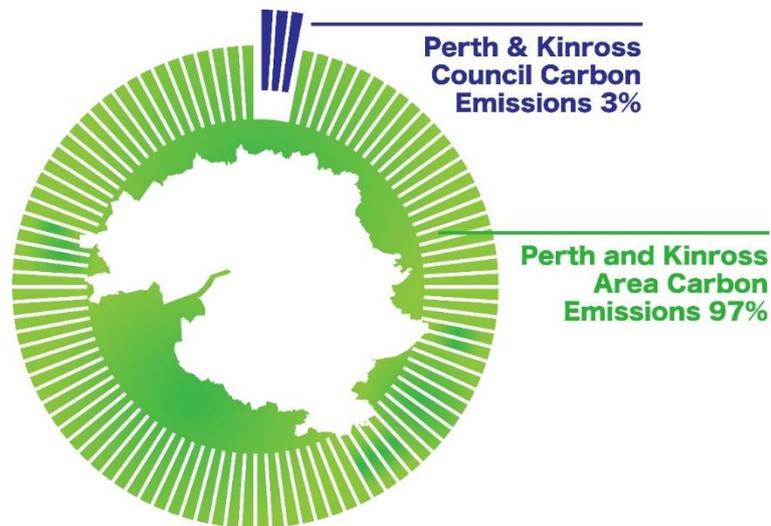
The Council reports emissions figures annually as part of the mandatory Public Sector Climate Change Reporting process (see part 11 of this report). The annual combined emissions for waste and energy is shown in figure 13 below. (vehicle fleet emissions data will be also be included in the reporting process for 2018/19, but are not included in figure 13 as no comparison is available for previous years).

The data (figure 12) shows a reducing overall level of emissions, particularly for energy - with waste now proportionately the higher contributor to emissions. These annual emissions estimates and emissions may vary year on year, for example the imact of a cold winter will significantly increase emissions.

Figure 12: Public Sector Climate Change Duties 2018 Summary Report: Perth and Kinross Council
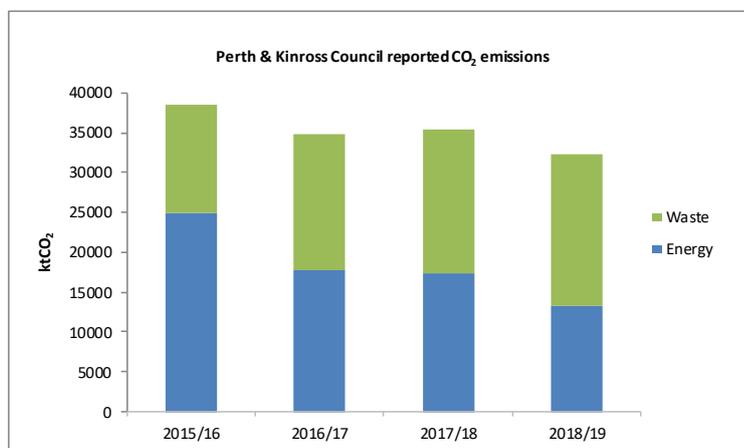
Source: Perth & Kinross Council

As part of our joint actions on Climate Change with our Community Planning partners (see part 12 of this report) we aim to share our emissions data, to establish a true picture of our collective impact on emissions, to compare and benchmark results, and look for joint opportunities to reduce emissions. (Action M3 – Appendix 2)

e)   Shared Vision and Route map

Our ambition is to develop a vision which is co-created with our communities and stakeholders - one in which all parties understand their contribution and are signed up to deliver upon (see part 2 of the report). Whilst the overall targets may be set by legislation, the debate on our vision centres round how quickly we chose to deliver on our ambitions, and indeed whether we want to go further or faster than legal targets dictate (Action SA2 – Appendix 2). It is also important that the vision not only sets our local targets but sets out what achieving these targets will look like.

Our short term route map to achieve our ambition over 2019 and 2020 is detailed below in Figure 14

Figure 14 Short-term Route Map

2	**Community Engagement, Empowerment and Awareness Raising**

a)   *Why This is Important?*

Globally, household consumption accounts for about 72% of greenhouse gas emissions. The need for major changes in household consumption is even more pressing in high income countries such as the UK, and this applies equally to Perth & Kinross

Up to now, behaviour change and societal change around lifestyles and consumption have played a relatively minor role in meeting UK emissions reductions targets. Part 1 of the report highlighted the significant role that behaviours need to make if we are to be successful in reaching a zero carbon Perth & Kinross. Achieving the necessary radical changes, cannot be introduced or successfully implemented without public involvement, and lifestyle change on a range of key issues like diet, personal travel and home heating.

Therefore, with our ambition to reduce emissions to net zero, we recognise the need for the public, as citizens and consumers, to have a much larger role in shaping our collective future actions. This is consistent with the emerging work on the Perth & Kinross Offer where the Council co-creates solutions with communities and stakeholders, to support everyone in the area to live life well. We need to support the mobilisation of community led action, to help our area move towards net zero carbon emissions.

b)   *What Are We doing Now?*

Since the Council Motion in June 2019 (see Appendix 1) we have engaged with communities, mainly through Climate Change Café events across Perth and Kinross. These early conversations have helped to identify current activities and local initiatives, as well as informing some of the priorities and actions detailed in this report.

Blairgowrie Climate Change Café Community Engagement Event 2019

The Perth City Development Board (an independently chaired partnership of public services and business groups) has included its far-reaching ambitions in a new draft Perth City Plan. The Plan identifies climate change as a significant challenge and proposes that Perth will be the first city in Scotland to achieve the Government's goal of net zero greenhouse gas emissions and will develop a comprehensive approach to mitigating the impacts of climate change. It advocates for a 25% reduction in car use and a shift to public transport and active travel by 2025; to become Scotland's leading city for active travel by 2030; and on track to achieve net-zero greenhouse gas emissions by 2040; and for the city centre to be a low-emission zone. This ambitious vision needs further analysis to identify the extent of this challenge and how it may be achieved.

We recognise the need for conversations with communities in relation to climate change adaptation and resilience, in preparation for extreme weather conditions. For example, in preparation for floods, the Council has been working with communities and local resilience groups to deliver the awareness raising actions set out within its local flood risk management plans.

Case study: Adapting to Climate Change in the Carse of Gowrie

Communities will benefit from having a more direct stake in their environment, and become more resilient to the climate changes happening around them, both locally and globally. Working in partnership, Perth & Kinross Council, Adaptation Scotland, SNIFFER and Carse of Gowrie's Sustainability Group, helped the community to map their local area to consider the likely impacts and effects of climate change – and the potential to proactively adapt to address the challenges and issues that this might bring. The community went on to develop a resilience plan for the area and continues to map the impacts for their area. [Click here for video](#).

We carry out extensive engagements with community groups and school groups on aspects of climate change such as active travel, energy management and extreme weather resilience. We recognise that to date this has tended to be via individual Services engaging on single issues, and we need a more co-ordinated programme and toolkit to raise awareness and support our communities make changes (Action E5 – Appendix 2).

c)   What`s Next?

i)   Community Engagement

We will carry out **widespread engagement during February to April 2020** as part of the wider Perth and Kinross Offer, to develop and describe a shared vision for Perth and Kinross, identify the main actions we all can take, and start the conversation about targets for the Perth and Kinross area. We will engage with all households and businesses within Perth and Kinross, as well as other public bodies and third sector. An initial list of potential groups to engage with is provided in Appendix 3, and we will be offering a range of public engagement opportunities.

In recognition that many of the critical effects of climate change will impact most significantly beyond 2050, we will prioritise engaging with all students and secondary school pupils studying within the area.

The questions will not centre around whether we will tackle the climate emergency, but how quickly we will act. We also need to understand the willingness of individuals and businesses to change the way we all operate and live our lives. An understanding of the barriers to change is critical, as is the role of the public sector in helping to remove barriers and supporting change.

Our engagement will present a range of scenarios to address the climate emergency. The scenarios will be based on a rapid transition, medium transition and just meeting statutory targets where appropriate. For each scenario the pros and cons will be identified as will the indicative costs, where available. The engagement will also attempt to examine some of the societal changes which will be required to implement the scenarios.

The scenarios explored will focus on 4 areas

- Delivering statutory functions in a carbon neutral manner
- Ensuring Perth & Kinross is a carbon neutral area
- Reducing the carbon footprint of Perth & Kinross
- Ensuring resilience plans are in place to respond to climate change adaptation

(Action SA1 – Appendix 2)

ii)   Climate Change Commission

To ensure the commitment of all parts of the community in local climate change action, several Councils have established Climate Change Commissions, which have a wide range of local representation.

We aim to establish a Perth & Kinross Climate Commission to help our area make positive choices on issues relating to energy, carbon, weather and climate. It should bring together key organisations and actors from across the area, and from our communities and the public, private and third sectors. (Action SA3 – Appendix 2).

The Commission will be an independent voice in the area, providing authoritative advice on steps towards a low carbon, climate resilient future, to inform our shared vision and shape the actions of local stakeholders and decision makers. It will monitor progress towards meeting the area's carbon reduction targets and recommend actions to keep the area on course to achieve its ambitions.

The Commission will also act as a forum where organisations and communities can exchange ideas, research findings, information and best practice on carbon reduction and climate resilience.

We will also work with communities and other stakeholders, and through the Climate Change Commission, to co-produce a shared action programme to the deliver emissions reduction targets for our area. (Action E1 – Appendix 2)

iii)   Engagement and Awareness Raising

We will develop new ways to work with communities and businesses to identify further measures, to make a step change to a low carbon economy, through a range of activities and events including conferences and an annual climate change award event (Actions E1 & E2 – Appendix 2).

iv)   Staff Awareness Raising

Recognising that our staff will be at the heart of delivering our climate change ambitions, we will develop an online training resource for all staff with modules on climate change issues and how it affects the Council and the individual, with a Service specific module, and a module on actions we can take in our personal life. This will be supplemented with drop in sessions and other Council learning opportunities. (Actions E3 – Appendix 2)

a)   On line Web Based Resourse

We will develop a dedicated community web site, shared with our Community Planning Partners, providing a local one-stop-shop on for all matters related to climate change, which all interested parties can contribute and share. (Action E4 – Appendix 2)

3	Climate Change Mitigation

a) **Introduction**

Before engaging with our communities over the actions we all need to take, the following section highlights the significant activities that the Council has been engaged in, over a period of years, to reduce emissions. Some headlines include: -

- ✓ We have reduced the total energy consumption from our buildings by 17% from 2012 levels, despite increasing the number of operational Council buildings.

- ✓ We have improved the energy performance of our Council Housing stock from 73% in 2015 to 82% in 2019 (Energy Efficiency Standard for Social Housing)

- ✓ We have attracted over £49m in external funding since 2010 for projects contributing to reducing greenhouse gas emissions, and climate change adaptions

- ✓ We have reduced the amount of CO_2 emissions from our waste by 33% since 2011, through improved waste reduction, reuse and recycle

- ✓ We have over 80 Electric Vehicle Charging Points available to the public in Perth & Kinross

This does not mean we are complacent. We recognise that to make the step changes to a zero carbon and climate resilient future, we need to accelerate the scale of our activities. Some of this work is highly innovative and sector leading, such as the SMART Energy Network (see case study below)

Case Study – SMART Energy Network

Perth & Kinross Council, in collaboration with the Can Do Innovation Challenge Fund and Innovate UK, are running a phased design competition where we have challenged five teams of energy experts to design a prototype smart energy system which has the ability to generate renewable energy and trade/transfer that energy to a different council site for storage and use.

The main aim of the project is to develop a sustainable system that can be used to power buildings in the Council's estate and reduce ongoing energy costs and existing carbon footprint as part of a 'Perth Smart Energy Network'.

Although this project's scope and primary aims are to service the Council's estate, there are a number of other potential exciting future possibilities such as giving the Council a direct mechanism to help tackle fuel poverty, or the means to reduce the energy demand and costs of social housing, and passing these benefits onto vulnerable groups.

This project has the potential to completely overhaul the way in which we power our Council estate not only saving the Council money on energy costs but also opening up a potential new income generation stream.

The next parts of the report (sections 4-8) highlight some of our main activities already underway, what is currently in the pipeline, and what further actions we need to take, to make that further leap towards a net zero carbon Perth & Kinross. We focus on the following five areas:

- Transport
- Buildings and Energy
- Waste
- Land Use
- Business and Industry

Our interim plan of proposed actions is detailed in Appendix 2. This plan will change as we engage further with our partners and communities.

4	**Mitigation – Transport**

a)   *Why This is Important*

Emissions from transport amounts to approximately 50% of the total CO_2 emissions for Perth & Kinross. This represents the largest single sector and perhaps the most complex. It is also the only major sector which has been experiencing increasing emissions in recent years. The achievement of our emissions targets can only be achieved with modal shift away from petrol/diesel car use, and significant improvements in the transport sector. Simply relying on the electrification of the private car or the emergence of a hydrogen - fuelled large vehicle fleet, will be too little and too late, to meet the critical date for action by 2030.

Perth & Kinross is at the heart of the national road and rail network with a significant proportion of movements between the north / north east and the central belt of Scotland travelling through the area. A large proportion of the transport related emissions in this area - approximately 50% - are generated by national traffic using the road and rail network, and therefore outwith the Council's direct influence.

The Council can however influence the travel patterns of residents and businesses within our area, using a range of positive measures, including improved walking and cycling opportunities, working with bus operators to enhance public transport, expanding the network of Park and Ride facilities and expanding the network of Electric Vehicle (EV) Charging Points. The Council also has within its powers more deterrent measures, such as parking restrictions and parking pricing controls.

The new Transport Act provides an opportunity to support climate change action for local communities with powers including actions on workplace parking, and public transport enhancement.

Climate change and air quality are inextricably linked; air pollution often originates from the same activities that contribute to climate change. The majority of both greenhouse gases and air pollutants are produced by vehicle engines, power generation and domestic heating, and as such multiple measures aimed at reducing air pollutants often also reduce CO_2 emissions, for example the adoption of low emission vehicles.

b)   *What We Are Doing Now?*

i)   *Active Travel*

The Active Travel Strategy co-developed by Perth and Kinross Council promotes walking, cycling and wheeling (including bikes, skateboards, scooters, wheelchair users). An action group has been established with Perth Active Travel Hub (PATH) which brings local authority representatives, members of the public and third sector organisations together to promote active travel.

We successfully bid for £6.5m funding from the Sustrans Places for Everyone Programme, for the transformation of the Dunkeld Road Corridor in Perth. This will create space for more efficient modes of transport – walking, cycling and public transport – so we can move people more efficiently across the city.

The Cycling Walking Safer Streets initiative provides an extensive network of safe walking and cycling routes enabling residents, commuters and visitors to travel actively and sustainably.

A School Exclusion Zones trial was carried out at four schools. These zones were established to encourage active travel, reduce vehicle engine idling, and make streets outside schools safer and healthier for children, parents and nearby residents. This has reduced the traffic volumes by a third in the most successful trial areas.

Reducing vehicle speeds in built up areas encourages more active travel.   We are trialling 20 mph zones in 5 locations throughout the area, so people feel more confident and safer using active travel modes.

`Smarter Choices, Smarter Places` is a programme funded by Transport Scotland to support Scottish local authorities to encourage active and sustainable travel choices. Through this programme, we have promoted sustainable travel through actions such as real time bus information, cycle parking facilities and signage, installation of cycle and pedestrian counters, school workshops to promote active travel, and incentivisation of sustainable travel through Mi rewards, and we are looking to extend this activity. (Action T9 – Appendix 2)

ii)   *Sustainable Travel*

The Council`s Mobility Board has begun work on a Mobility Strategy, to encourage a modal shift by prioritising the travel hierarchy i.e. active travel, public transport, pool cars/car sharing, private cars. The strategy will also address the freight needs of our businesses and residents. A successful mobility strategy will ensure it supports, not constrains, the sustainable economic growth of our area. (Action SA4 – Appendix 2)

We will expand the work of the Board to involve wider stakeholders and ensure that the final strategy has shared outcomes with partners (Action T2 – Appendix 2).

To assist these discussions, we aim to commission research to explore and cost a range of options required to achieve the required modal shift and deliver a low carbon transport future of Perth & Kinross. (Action T3 – Appendix 2).

Figure 15 Mobility Strategy Themes

ii)   *Low Carbon Transport Infrastructure*

Over 80 Electric Vehicle (EV) chargers have been installed across Perth & Kinross and offer coverage in major towns and some rural locations -click here for more information. Future PKC charger installations will be introduced, based on funding, identified needs and accessibility/proximity to suitable locations.

The Tayside and Central Scotland Transport Partnership (TACTRAN) members are consulting on a strategy for innovative and extensive EV charging infrastructure throughout the region. A Regional EV Forum has been created to co-ordinate local and regional EV activities across the region, to support the uptake of EV's across all vehicle types. (Action T4 – Appendix 2)

The Low Carbon Transport and Active Travel Hubs Project is already underway. This will create an innovative travel hub located at Broxden, Perth, a strategically important site on the Scottish motorway network. The project will combine on-site generation of renewable energy and battery storage assets to support the EV charging hub.

The Council is also developing proposals for hydrogen refuelling facilities at Broxden. This would be the first Hydrogen station for zero emission hydrogen vehicles in the Perth and Kinross area. (Action T5 – Appendix 2)

iv)   *Electric / Alternative Fuel Vehicles*

There are a growing number of Electric Vehicles (EVs) within the Council fleet - 27 to date which is 9% of the small vehicle fleet. There are currently six chargers for Council fleet vehicles to use around Perth city and three additional fleet charger locations have been confirmed for 2019/20 installations. This will support the change, as our electric fleet expands.

A fleet replacement vehicle strategy for alternative fuels is being developed, to move towards achieving Scottish Government targets for all smaller public service vehicles to be carbon free by 2025. (Action T6 – Appendix 2). The project includes a Travel Hierarchy, which has identified a requirement to change the culture of how staff approach the requirement to attend meetings, including tele / videoconferencing options (Action T7 – Appendix 2)

A car lease scheme for electric and low carbon vehicles for Council staff has been developed, which will encourage switching to more sustainable vehicles (Action T8 – Appendix 2).

v)   *Corporate Travel Planning*

The Transport Planning team provides sustainable infrastructure for commuters to choose their mode of travel, with the following alternatives available to Council employees: - LiftShare Scheme, E-Bikes trial events, Cycle to work Scheme. (Action T9 – Appendix 2)

vi)   *Public Transport*

The Council invests in the region of £2.1m per year in the subsidised local public transport network throughout Perth and Kinross Council area. This provides around 1.88 million miles per annum, over and above that operated by the commercial bus and coach network. A number of initiatives are underway and will be continued and expanded.

To encourage wider bus use, we are installing Real Time Passenger Information (RTPI) displays at bus stop locations and public facilities, offering cycle lockers at key bus stop locations, and are working with bus operators to upgrade to contactless payment facilities, and support discounted fares. (Action T10 – Appendix 2)

The Council has introduced Demand Responsive Transport (DRT) schemes in rural communities by replacing low frequency bus services with a more cost effective, environmentally friendly and accessible solution. Two DRT services are in place, currently covering Kinloch Rannoch and West Kinross-shire   We will explore implementing additional DRT schemes (Action T11 – Appendix 2)

There are currently 23 Community Transport (CT) schemes within Perth & Kinross. The Council supports Community Transport organisations through the Perth and Kinross Community Transport Forum and will encourage new CT operators to fulfil this vital role in the transport chain. (Action T11 – Appendix 2)

We promote the use of the park and ride as an attractive, alternative option and to encourage a significant shift from traffic on key corridors. There are three park and ride sites at Perth (Broxden), Scone and Kinross. We are exploring further park and ride options around Perth city (Action T12 – Appendix 2)

vii)   Land Use Planning

The recently adopted Local Development Plan sets out a delivery strategy which focuses the majority of new development in Perth & Kinross to settlements where there is existing infrastructure and services that can be used. This enables the use of existing public transport provision and active travel links, to help reduce the need for private vehicle use.

The Transport Planning team assesses planning applications - promoting active travel by placing pedestrians and cyclists at the top of the street-user hierarchy. This can be achieved by existing infrastructure being adapted and new infrastructure being provided to support sustainable travel choices to users.

viii)   Air Quality

The Council has declared Air Quality Management Areas in Perth city and Crieff, with detailed plans to tackle emissions in both areas.   Each year the Council bids for Scottish Government funding to progress air quality improvement measures and to date have been successful in implementing a variety of projects including: provision of bus shelters, recruitment of an iBike officer, bike/scooter shelter installations. (Action T13 – Appendix 2)

c)   *What`s Next?*

i)   *Sustainable Travel*

The introduction of travel plans reduces reliance on single occupancy vehicles and supports a shift towards sustainable travel. In order to lead by example and create a robust corporate travel plan, the Council has undertaken a comprehensive staff travel survey. It will be present in the final Corporate Travel Plan and will be evaluated annually to establish the rate of a modal shift away from single occupancy car usage at the Council. (Action T9 – Appendix 2)

We are progressing the development of a comprehensive network of active travel routes to serve the City of Perth building phase one, the Dunkeld Road corridor. We will be considering these incentives to sustainable travel, alongside levers such as parking policies to disincentivise private vehicle use. (Action T14 & T15 – Appendix 2)

ii)   *Low Carbon Transport Infrastructure*

The Switched on Towns and Cities Challenge (SOTC) Fund aims increase the uptake of EVs in Scotland's towns and cities by supporting local authorities with incentives and promotion of EVs. We will be applying for future SOTC funding, in order to support the

growth of high quality urban EV infrastructure, but also to focus on rural areas. (Action T6 – Appendix 2)

At present there is only one EV and one Hybrid taxi vehicle operating within Perth & Kinross. Dundee City Council have successfully encouraged taxi firms to adopt EVs across Dundee. Using Dundee as a blueprint, we will engage and support taxi companies in the transition to EV vehicles. This will include looking at enhancing the EV infrastructure to support the needs of EV taxis and all other EV users. Charging Hubs with solar power canopies and battery storage facilities are required to facilitate this transition, using grant funding available via the Scottish Government. (Action T16 – Appendix 2)

We are partnering with Transport Scotland, in the Electric A9 project, which is increasing the availability and accessibility of EV charging points on the A9 route. Electric A9 branded chargers will be installed in Auchterarder, Dunkeld and Pitlochry to be included by the end of 2019/20 with more locations to be included. (Action T17 – Appendix 2)

iii)   Public and Community Transport

The Council`s Public Transport Unit will present their proposed Local Transport Strategy to Committee before the end of 2020 detailing actions we can take to encourage more sustainable public and community transport activities. (Actions T18 to T22 – Appendix 2).

iv)   Air Quality

Low Emission Zones (LEZs), or alternative vehicle access restrictions, are a legal tool which can be used to set an environmental limit on certain roads to allow access to only vehicles that are deemed to have cleanest emissions. All local authorities with an Air Quality Management Area (AQMA) (where transport is the primary pollutant) must undergo screening for such zoning in 2020 to identify how such changes could reduce emissions from transport, and in turn, contribute to greenhouse gas reduction targets. The Scottish Government has stipulated that zoning be completed by 2023 (Action T23 – Appendix 2).

There are further air quality related regulatory measures which would support climate change mitigation, introduced by the new Transport Act. We will investigate the costs options for these. (Action T24 & T25 – Appendix 2).
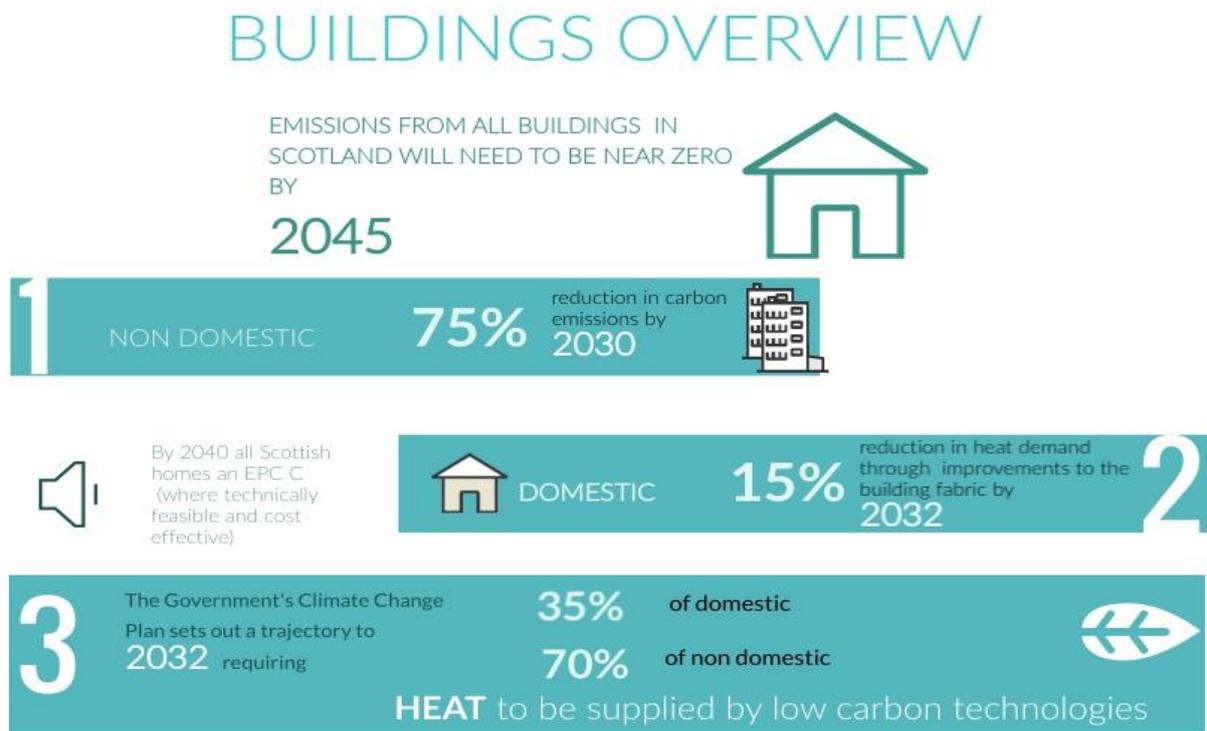
5	Mitigation – Energy and Buildings

a)   *Why This is Important*

i)   All buildings

The way we heat and power our buildings is a major contributor to CO_2 emissions. Across all of Perth & Kinross the total carbon emissions from domestic buildings is 273, 300 tonnes, and non-domestic buildings is 289,600 tonnes - predominately from space / water heating, and the equipment we use in our homes and businesses.

The ambitious and challenging Scottish Government targets for both the domestic and non-domestic sector are detailed below:

Figure 16 Key Targets for Buildings

BUILDINGS OVERVIEW

EMISSIONS FROM ALL BUILDINGS IN SCOTLAND WILL NEED TO BE NEAR ZERO BY
2045

1 NON DOMESTIC **75%** reduction in carbon emissions by 2030

By 2040 all Scottish homes an EPC C (where technically feasible and cost effective)

DOMESTIC **15%** reduction in heat demand through improvements to the building fabric by 2032 — 2

3 The Government's Climate Change Plan sets out a trajectory to 2032 requiring **35%** of domestic **70%** of non domestic HEAT to be supplied by low carbon technologies

Source: Energy Efficient Scotland: route map, Scottish Government © Perth & Kinross Council

Our priority must be to minimise the amount of energy we use by ensuring our buildings are energy efficient; that the systems and equipment we use are efficient; and ensuring our future energy requirements are provided by sustainable sources. This is known as the energy hierarchy of "Lean, Clean, Green" approach to climate change – see Figure 17.

Figure 17 - "Lean, Clean, Green" approach to climate change
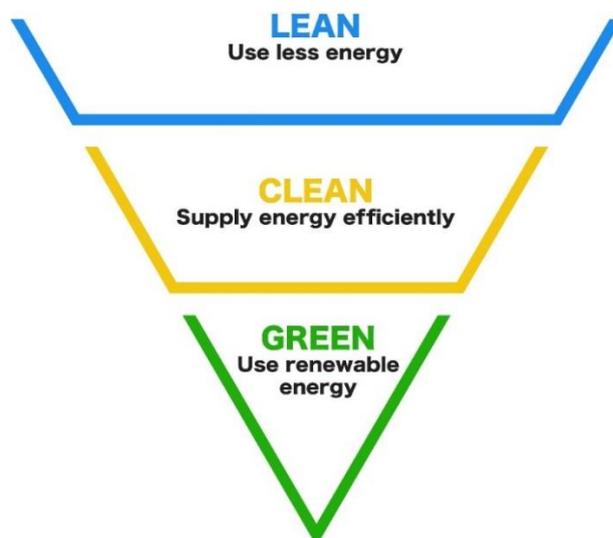
ii)   *Domestic Sector*

[The Scottish Government Energy Efficient Scotland Route Map](#) identifies the key targets for the domestic sector, including :-

•   Maximise the number of social rented homes achieving Energy Performance Certificate (EPC) B standard by 2032
•   Private rented homes to achieve EPC E by 2022, to reach EPC D by 2025, and to achieve EPC C by 2030 (where technically feasible and cost effective)
•   All owner occupied homes to reach EPC C by 2040 (where technically feasible and cost effective)
•   All homes with households in fuel poverty to reach EPC C by 2030 and EPC B by 2040 (where technically feasible and cost effective)

Whilst most homes will require to be EPC C by 2040, this action alone will not be enough to meet the net zero carbon target. We will also need to adopt renewable sources to meet residual heat needs, energy efficient appliances, and the knowledge and means to efficiently use the technology available. Behavioural change, such as, closing doors and windows and switching off electrical items, is essential. [Studies show](#) that 50% of energy reductions can be achieved through behavioural change.

i)   *Non Domestic Buildings (Council Property Estate)*

Due to extensive proactive work, significant progress has been made in reducing our emissions, particularly since 2012-13 - see figure 18 below. Despite increasing the number of Council operated buildings, we have reduced our emissions by 17%, since 2012.

Figure 18   Annual CO$_2$ Emissions From Non-Domestic Council Buildings
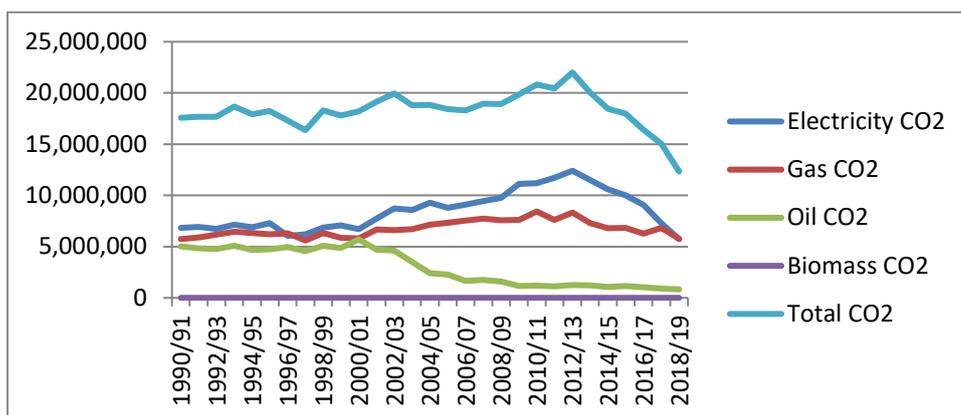
Council carbon emissions from non-domestic buildings are currently 12,334 tonnes CO$_2$e per annum. To achieve the Scottish Government 75% reduction target by 2030, will require the Council to reduce its emissions for all non-domestic buildings over the next 10 years to a level of 4,396 tCO$_2$e. This equates to an annual reduction of around 725 tCO$_2$e each year - which is the combined current annual carbon emissions for Pullar House and 2 High Street buildings.

b)   ***What Are We Doing Now?***

ii)   *Local Heat and Energy Efficiency Strategy (LHEES)*

LHEES allow for the development of a long- term (15 -20 year) area-based delivery plan setting out approaches to reducing emissions from buildings and tackling fuel poverty, by identifying area-based solutions, as well as identifying zones suitable for the development of heat networks. LHEES is intended to form the basis for our planning and delivery of local energy systems, by identifying the technologies needed. The development by Councils of LHEES are set to become mandatory across Scotland.

Following on from the completion of the phase 1 LHEES pilot project in the Perth North area, we are carrying out additional project work alongside a number of other Councils. This work is expected to consider both how LHEES might be implemented at a practical level using a standardised approach, and the likely resources required to undertake a detailed LHEES.

We have held discussions with SSE about exploring possible options for a heat/power network in the Perth North area, encompassing a range of Council buildings as well as the SSE Headquarters at Inveralmond. This work is currently being considered in the context of the Perth City Route map project and will consider initial feasibility of low carbon energy solutions in this area of the City.

Our LHEES pilot work has so far focussed on urban settings. We will also need to consider how to tackle local heat and energy efficiency issues in rural communities, particularly areas of fuel poverty.

The experience of the pilot project has shown that we will need additional resources to deliver the formal roll-out of LHEES, including broad involvement of Council services, and a programme of engagement with a wide range of stakeholders. We will be looking for further funding support for the roll- out of LHEES, from the Scottish Government. (Action B1 – Appendix 2)

iii)   *Domestic Properties (all tenures)*

For all domestic buildings the focus is:

1. Ensuring the buildings are energy efficient, minimising our requirements for space heating, by ensuring a high standard of insulation
2. Ensuring the equipment, we use within our buildings is energy efficient i.e. energy efficient appliances and light bulbs
3. Changing our behaviour in the way we use our buildings, with an increased understanding of how energy is used i.e. smart meters, turning down thermostats and switching off lights

There is limited publicly available detailed information on emissions and energy use at an individual household level. Therefore, we are taking a strategic approach towards heat and energy transformation in the area. This includes development of a Local Energy Map which will assist in targeting areas of highest need and planning for energy demand reduction, decarbonisation of buildings and fuel poverty alleviation

Figure 19 – Example of Heat Map estimate of likely heat demand and demand density.
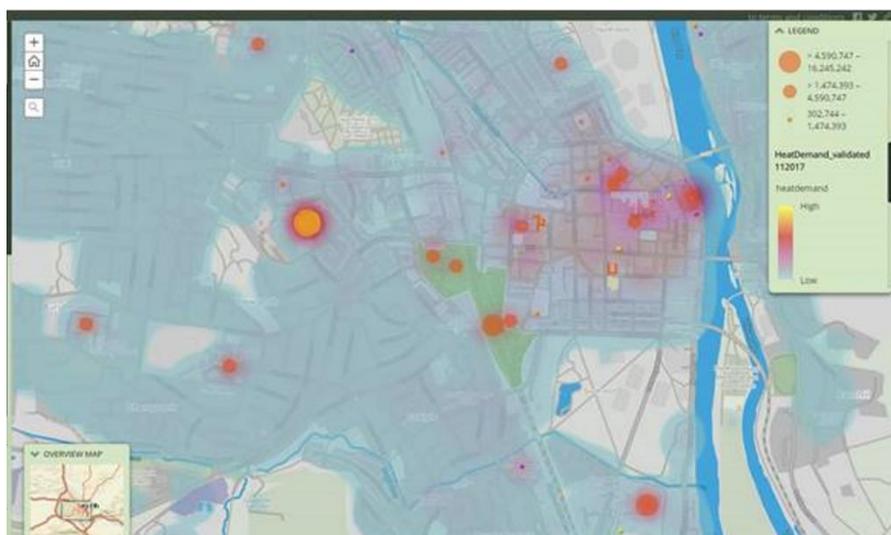
The Council works in partnership with Scarf to deliver the Home Energy Advice Team (HEAT) service to residents across all housing sectors in our area. This service offers free and impartial advice on any aspect of domestic energy efficiency and fuel poverty alleviation, and is therefore an important service for households in meeting Government targets for carbon reduction. Scarf have trained energy advisors who offer free energy saving advice to residents of all tenures throughout Perth & Kinross. This also supports those at risk of fuel poverty

Our Home Energy Guide is published annually and is designed to provide information for both tenants and homeowners.

We have obtained grant funding through various schemes to assist and encourage home owners to retrospectively fit additional or upgraded energy efficiency measures. These grants include:

▶ The Scottish Government's Home Energy Efficiency Programme for Scotland (HEEPS)
▶ The Energy Company Obligation (ECO)

▶ The Warm Homes Fund (WHF) obtained through a consortium funding bid along with SSE and Moray Council
▶ The Warm Homes Discount Industry Initiative (through SSE)

> **Case Study – Housing**
> *Following completion of the Warm Homes Scotland survey, it was confirmed that a household was eligible for a new condensing gas boiler; room thermostat; loft insulation; smoke alarms; central heat pipe enclosure; hot water tank jackets; and a carbon monoxide detector. The measures were installed in July 2018 and the resident was delighted with the outcome.*
>
> *By contacting the HEAT service, the household saved £5,625 on the cost of the energy efficiency equipment and a potential lifetime fuel bill saving estimated at £14, 000.*

iv)   *Council Houses (7,600 homes)*

We have continued to improve the energy performance of our Council Housing stock. Compliance with the Energy Efficiency Standard for Social Housing (EESSH) has improved from 73% in 2015 to 82% in 2019. The average level of EESSH compliance for Scottish Local Authority housing stock in 2019 is 81%. The improvements to our domestic housing estate, including :

▶ **Whole Building Insulation –** fitting additional insulation in lofts, to pipes & storage tanks, under floors and to exterior walls fitting double or triple glazed windows along with insulated exterior doors
▶ **Heating and Lighting -** fitting high efficiency heating systems with thermostatic controls, programmers and building management systems, along with low energy lighting and controls in common areas. We have also enclosed many open common areas, which helps to reduce heat loss
▶ **Renewable Technologies –** fitting air and ground source heat pump heating installations or supplementary energy efficiency measures, such as solar water heating and solar photovoltaic panels

v)   *Non domestic buildings (Council Property Estate)*

Electricity consumption in Council buildings grew steadily to a peak of 23 million kilowatts in 2012/13, due to the increase in the size of the Council`s property estate, along with the additional equipment requirements.   However, consumption has steadily decreased by 17%, to 19 million kWh in 2018/19, due to investment in low energy technology, good housekeeping, and raising energy awareness.

The CO_2 emissions from electricity consumption in Council buildings has followed a similar pattern, but with an even sharper reduction since 2012/13, due to the Council's energy saving measures, and greater use of renewable electricity generation in the national grid.

Fossil fuel (gas and oil) consumption for heating and hot water has been reduced by 30% from 2012/13 levels due to the upgrading of the Building Management Systems (BMS), improved heating controls, fixed heating periods, target temperatures and increased energy awareness, along with the installation of biomass boilers.
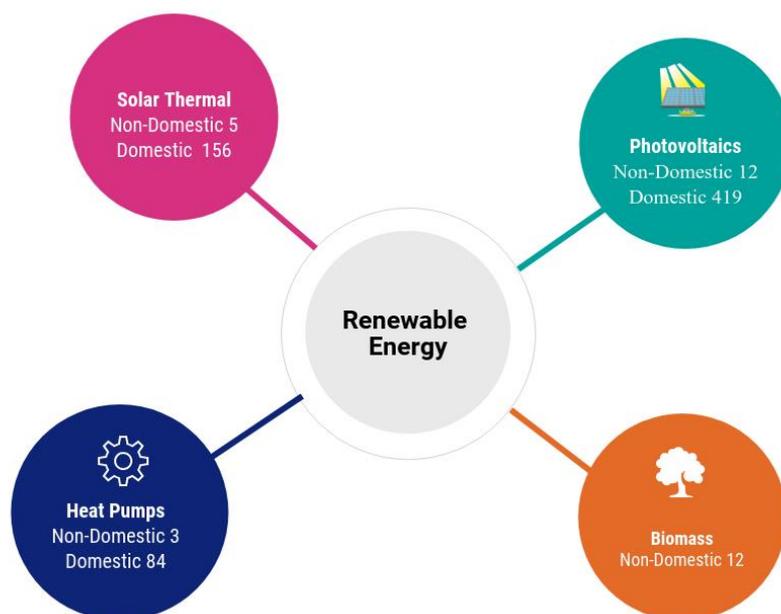
vi)   *Decarbonisation*

The Council has established twelve sites with biomass boilers, providing heat for buildings, leading to emissions reduction, as biomass is classed as a carbon neutral fuel.

We currently have three non-domestic buildings with Ground Source/Air source heat pumps as the primary heat source. Future works will see the installation of heat pumps being incorporated across the wider estate. We have twelve building- mounted photovoltaic systems (solar panels) generating 172,501kWh of renewable self-generated electricity annually.

Figure 20 shows that our work to decarbonise our energy requirements continues through the introduction of more renewable generation and battery technology.

Figure 20

Perth & Kinross Council Renewable Energy

Solar Thermal
Non-Domestic 5
Domestic 156

Photovoltaics
Non-Domestic 12
Domestic 419

Renewable Energy

Heat Pumps
Non-Domestic 3
Domestic 84

Biomass
Non-Domestic 12

We are carrying out a range other actions to reduce energy consumption:

- ▶ Modelling our existing building portfolio to identify improvements required for improving Energy Performance Certificate (EPC) levels and reducing energy consumption.
- ▶ Improving whole building insulation in our properties, including; loft, cavity wall, under floor, and plant room pipework and valve insulation.
- ▶ Replacing inefficient heating and hot water systems with renewable technology and assisted controls
- ▶ Investment in Building Management Systems. In 2014 we remotely controlled 62 buildings. This is now over 76 sites
- ▶ Remotely monitor the energy production in our renewable technologies (including; Photovoltaics (solar panels), heat pumps, solar thermal and biomass)
- ▶ Development of energy analytics tools to highlight energy consumption problems in our buildings, within 24 hours.
- ▶ Securing grant funding from government Salix (a fund for energy efficiency projects) for lighting and heating controls projects
- ▶ Raising energy awareness through school visits with class talks, switch off campaigns, and energy audits, with information shared with staff in charge of the buildings.

> **Case Study - Property - Madderty Primary School**
>
> *Madderty Primary school had an Energy Performance Certificate (EPC) level G, with the potential to meet level B. The buildings actual energy performance was very poor due to it being heated by an inefficient electric storage system and the site having poor insulation. The building had two cylinders for hot water which operated 24 hours per day, 7 days per week.*
>
> *The building was modelled using energy software which identified areas to reduce energy consumption. In 2018 wall insulation was improved.*
> *In 2019 a new Air Source Hand Pump (ASHP) heating system was installed. Classrooms and staff areas are now heated by radiators and fan convectors. Hot water is now provided by one cylinder primary heated by the ASHP. The system has room by room control and a master programmer managed remotely by the Council. Solar film was installed to reduce heat build-up in the south facing conservatory during summer months.*
>
> *The building has now achieved an EPC level B and is saving more than 70% in electricity consumption and reduced carbon emissions, by 31tonnes of CO_2e per year.*

c) *What's Next?*

i) All Buildings

Future actions within both domestic and non-domestic buildings will be involve difficult decisions, and a significant amount of investment, and partnership working, to achieve climate change targets, such as a 75% reduction in emissions from buildings by 2030 and the requirement for Council's domestic properties gaining EPC level of B or above by 2032. (Action SA5 – Appendix 2)

ii) Council Housing (7636 homes)

All new Council Houses currently under construction and future build programmes will be constructed to the EPC B level as a minimum. We will develop a programme to ensure all existing Council houses are brought up to EPC B by 2032 (Action B2 – Appendix 2)

We will investigate the potential to deliver an exemplar project potentially to Passive House standard incorporating other sustainability measures, including exploring avenues of funding for an exemplar pilot project. (Action B3 – Appendix 2). We will develop a suite of measures to assist out tenants to meet the challenges of climate change mitigation. (Action B4 – Appendix 2)

iii) Housing Association Dwellings (4,000 homes)

We will work with local Housing Associations to maximise the number of social rented homes achieving EPC B by 2032. (Action B5 – Appendix 2)

iv) Private rented Housing (12,000 homes)

Across Scotland, the energy performance of the private rented sector is considered to lag behind all other sectors, although this is based on relatively limited data. It is expected that this national position is reflected in Perth & Kinross. Indications suggest that the responsibility for monitoring and enforcing the EPC minimum requirements will rest with the Council as the Private Landlord Registration Authority, although this is not set out in legislation as yet.

Most private landlords in Perth & Kinross have only one property for rent and with approximately 6,800 active private landlords, regulating and supporting this sector

represents a significant task for the Council, particularly as the first target date is 2022. Our Private Sector Access Team will raise awareness in the private rented sector, giving private landlords adequate warning of the impending EPC targets and directing them to the technical advice required to allow them to upgrade their properties where required. (Action B6 – Appendix 2)

A significant proportion of private rented properties are in Perth city and town centres, often in tenements or other forms of multiple ownership. This can present challenges to upgrading the fabric of the building to achieve the required EPC rating, when not all owners are willing to upgrade. The Council has experience in facilitating upgrades in multi ownership blocks, and will look to assist and advise private landlords. It is likely however that the amount of work generated may exceed the capacity of the current team, and we will need to assess the potential additional demands for this service, and how this could be supported. (Action B7 – Appendix 2)

v)   Private Housing Sector (45,000 homes)

By far the largest housing sector is private houses and flats. This sector has the least stringent targets, with all homes requiring to be EPC C level by 2040. Regardless of how this sector is regulated we must lead by example, help our residents prepare for the deadlines for compliance, and direct them to trusted sources of advice on required measures and funding options.

Our Home Energy Advice service reaches a few hundred households per year, and at the current rate of engagement, it would be well beyond 2045 before every household has been contacted. Whilst the Council does not have a statutory duty to provide an advice service, to reach overall climate change targets, we need to support homeowners meet their EPC obligations. One potential option is the provision of local and trusted one-stop-shops for energy efficient advice.

The Heat pilot project in Blairgowrie, funded by the Scottish Government, is an excellent example of a local available and trusted source of advice. We will discuss with partner organisations, the third sector and our communities, the best means of providing energy efficiency advice for the private housing sector with the aim of rolling out a programme from April 2021. (Action B8 – Appendix 2)

Fuel poverty occurs in all housing tenures, and the Scottish Government has set a target that, all homes with households in fuel poverty to reach EPC C by 2030 and EPC B by 2040 (where technically feasible and cost effective). Whilst measures are in place to address this issue across the rented sector, the scale of the problem amongst the private sector requires to be quantified at a local level. We will seek clarity from the Scottish Government over how the upgrading of private sector houses in fuel poverty will be funded. In the first instance further research is required to assess the scale of the problem, with an action plan to be developed. (Action B9 – Appendix 2)

vi)   Council property portfolio (non domestic)

We will create the Perth Smart Energy Network (SEN) which aims to reduce the Council's energy costs, carbon emissions and develop new income streams for the Council. The aim for this network is to generate renewable energy, store that energy and trade it around the Perth smart energy network to optimise its use and maximise its value. (Action SA6 – Appendix 2)

We will develop a suite of energy efficiency and decarbonisation measures to improve our non-domestic property portfolio. (Action B10 to B25 – Appendix 2)

6	**Mitigation – Waste**

a)   *Why This is Important*

As part 1 of the report highlighted (Figure 12), waste accounts for around 56% of the Council's reported CO_2 emissions. The main source of these emissions is from the decomposition of biodegrading organic materials in landfill sites, as well as emissions from haulage, and processing of waste materials.

Waste minimisation and sustainable waste management are essential in fighting climate change. The Zero Waste Scotland 2018 Household Carbon Metric Brief stated that some materials have a very high carbon impact so, to maximise the climate change benefit, these carbon intensive waste materials should be our priority. The three most carbon intensive household waste materials in 2018 were identified as:

- Textiles
- Animal & mixed food waste
- Plastics waste

Waste can be managed sustainably through reducing, reusing, repairing and recycling; improving resource efficiency and helping to work towards a circular economy (where we reuse materials, rather than taking the traditional approach of making items, using them and throwing them away).

The 5 main Scottish Government targets to reduce waste generation and increase recycling rates in Scotland are:

1. The ban on biodegradable municipal waste to landfill from 2025
2. Reducing the weight of waste arisings in Scotland by 15% below 2011 levels, by 2025
3. Reducing, per capita, food waste arisings in Scotland by 33% below 2013 levels by 2025
4. Achieving a 70% recycling rate for all waste by 2025
5. Achieving a maximum landfill rate of 5% by 2025

We are taking actions to address these targets. Over the last 10 years, the average levels of general waste collected weekly from households in Perth & Kinross has decreased by 45%. In September 2019 this was 4.49kg per household, compared to March 2013 when it was 8.3kg per household.

The Council currently recycles 51.7% of household waste (as at 2018) and our equivalent 2018 carbon emissions are 140,239 TCO_2e (source: SEPA). These emissions have decreased from 209, 000 TCO_2e in 2011   -   a reduction of 33%. This has been due to the Council`s proactive approach to waste recycling, composting and minimisation, education and awareness with the public, and service changes such as the reduction in size of the general waste bins available to households.

b)   *What Are We Doing Now?*

Our Waste Management Plan   sets out the way forward for the Council to meet national recycling and composting targets, as well as developing initiatives to control waste growth; and promoting the circular economy.

The Waste Services Team continues to promote recycling services, and recycling facilities available in communities to maintain participation and improve the quantity and quality of recyclates, thus supporting the circular economy.

Our waste education and awareness programmes support householders, schools, businesses and community groups to **Reduce, Reuse and Recycle**. This work supports the Curriculum for Excellence and the Eco-Schools Programme.

Zero Waste Perth is a partnership formed between Beautiful Perth, Perth & Kinross Council and Perth College UHI to inspire householders, businesses, schools and community groups to reduce waste. The campaign aims reduce food waste, encourage reuse & repair, promote recycling and resource efficiency, and facilitate circular economy opportunities. Since November 2017, 90 separate events have been held, to support embedding sustainable practices in our communities

The Waste Services Team promotes national campaigns such as **reducing food waste**. Food waste contributes to one third of the average general waste bin and much of this food waste is avoidable.

c)   *What`s Next?*

We aim to reduce the use of single-use items on Council premises. In order to understand the scale of use, a survey of staff and an information gathering exercise of the amounts of each single-use item purchased, have been carried out, and actions to encourage behaviour change by introducing reusable alternatives have been identified (Action W1 – Appendix 2).

From the end of January 2020 we will provide more convenient access to recycling facilities for residents in Perth City Centre, enabling more recyclable waste to be diverted from landfill.

Introducing a Deposit Return Scheme (DRS) is part of the Scottish Government's plan to develop a circular economy, by encouraging people to recycle their drinks containers through charging a deposit for the bottle or can which the drink comes in. We will keep these national developments under review to ensure they are introduced effectively in Perth & Kinross (Action W2 – Appendix 2)

We are investigating a new twin-stream recycling collection system where paper and cardboard are collected in the blue bin and metals, plastics and cartons are collected for recycling in a fourth kerbside bin. This should result in higher quality post-consumer recycling, which will support the circular economy. This project will be influenced by the introduction of the DRS plans across Scotland.

We are working with Zero Waste Perth and a local social enterprise, to establish a food sharing network in Perth city. Plans for this include a network of community fridges and community cafes, which have potential to divert huge quantities of surplus, edible food from food shops and food businesses to people who need it instead of it being disposed of. (Action W3 – Appendix 2).

We will look to use the new development at Bertha Park, as a best practice case study for householders reducing waste. This involves more extensive mini-recycling points within walking distance of homes, which capture batteries, lightbulbs, glass bottles and jars plus textiles and shoes. Also, food waste reduction will be promoted extensively in this community, ahead of the national target for 33% reduction in food waste by 2025.

7	**Mitigation – Land Use**

a)   *Why This is Important*

Land is an essential resource to tackle climate change. In a changing climate, our trees and woodland will capture and store carbon, reduce the impacts of flooding, provide habitat for displaced species, and provide shade in a warming climate. An important factor in the effective functioning of our land is biodiversity and preserving a healthy ecosystem. The current approach to land use both across Scotland and the rest of the UK threatens biodiversity and the functions of our land itself, weakening our opportunities to mitigate and adapt to climate change.

Changing our approach to land use is therefore crucial in ensuring that we are prepared for the warming climate and its consequences to both human life and natural environment. One way of achieving this is peatland restoration. Currently, 80% of peatland habitats are estimated to be damaged. Restoration is therefore key to locking-in carbon and helping to counteract climate change. Restoring all of the currently known area of bare peat in Scotland would save the equivalent emissions produced by 755,000 flights between Edinburgh and London every year.

Restoring an area of bare peat equivalent to the size of five football pitches in the South Inch Park, would save 95 tonnes of CO_2 every year. This is the same as the emissions produced by 1,131 car journeys between Edinburgh and John O'Groats.

b)   *What Are We Doing Now?*

i)   *Land Use Planning*

The need to address the cause and effects of climate change and the drive to help meet national targets is a common thread across the policy topics within the Council's land use planning policy framework. This suite of strategies and policy documents reflect the Scottish Government's targets on reducing greenhouse gas emissions and energy consumption. They include specific objectives, actions, policies and criteria to guide decision-making to ensure land use development incorporates climate change mitigation measures.

ii)   *Other actions*

We are also working with partners such as Scottish Forestry and private forestry companies to achieve the Scottish Government's woodland creation targets of 12,000 hectares annually. We are supporting and promoting sustainable forest management and planting the right type of woodland in the right place, to enhance the landscape and biodiversity of Perth and Kinross, as well as enhancing carbon capture and storage.

In Perth and Kinross, 1,713 hectares of private woodland has been planted with the grant aid assistance, since 2015. An additional 3,798 hectares have been approved under the same grant aid since 2015 but have not been planted, yet. These measures are vital to ensure our wildlife can adapt and move to other areas due to the changing climate.

In our school grounds, we are working with partners to plant trees to reduce the carbon footprint. At Perth Grammar School, pupils have researched what native species of trees would be best placed around the school grounds to offer attractive areas for outdoor learning, relaxing and to store carbon and improve the air quality of the area. (Action L2 – Appendix 2)

iii)   Agricultural Technology

Our area has long since been regarded as a world-leader in premium agricultural and horticultural produce including soft fruit, cereals and potatoes. It boasts world leading developments in agricultural, plant and crop science, which all will be impacted by climate change. At the heart of these developments is the James Hutton Institute (JHI) at Invergowrie. JHI has taken a leading role on the global stage in addressing the need to enhance agriculture technology including soil assessment and management.

At the forefront of these plans, and supported by the Tay Cities Deal, are two ambitious projects: the International Barley Hub (IBH) and the Advanced Plant Growth Centre (APGC). The IBH aims to be a global centre of excellence as future barley supply is increasingly uncertain, due to the implications of climate change, developing worldwide demand, evolving pest and disease risks and agronomic pressures. It will ensure the long-term sustainability of the UK's leading agriculture, brewing and distilling sectors. The APGC aims to provide innovative research and development around both crops grown under cover, and post-harvest storage facilities. The ambition is to reduce the cycle for crop development by up to 50% and to deliver the plant varieties required to protect the UK food and drink sector from the impact of climate change, and the risks posed by the global food supply chain.

iv)   Biodiversity

Biodiversity – "nature" to most people –will be affected by a changing climate and some species will require different conditions in future. Enhancing biodiversity by protecting and restoring ecosystems can help us reduce the extent of climate change and cope with its impacts. For example planting trees along rivers and burns will create shade to reduce high temperatures, reduce erosion, reduce flooding downstream and the falling leaves will increase the number of aquatic insects.

We are committed to delivering the actions of the Tayside Local Biodiversity Action Plan 2016-26, supporting and working with the Tayside Biodiversity Partnership to safeguard our habitats and species. Protecting and restoring peatlands, woodlands and other habitats will store carbon and deliver multiple benefits for biodiversity and our health and wellbeing. Through the the development management process for planning applications we can connect natural areas, using green infrastructure, and deliver active travel routes, and diverse habitat, for a range of species in a changing climate.

c)   What's next?

The Council is developing a Food Growing Strategy which responds to the Government's vision to become "a Good Food Nation". This aims to improve the provision of community growing spaces across Perth and Kinross and help communities lead more sustainable lifestyles. Besides their social and health benefits, community growing spaces also contribute to mitigating and adapting to the effects of climate change through carbon reduction and sustainable design. By providing access to locally grown food, they reduce carbon emission associated with food miles and packaging.

The strategy will explore opportunities for skills development in composting, cooking and preserving seasonal produce, which alongside the work of Zero Waste Perth, will help reduce food waste. As part of this initiative, allotments, orchards and community gardens can also improve biodiversity. When linked with other greenspaces, they create important green corridors for wildlife and contribute to sustainable water management. (Action L8 – Appendix 2)

We will examine a range of actions to enhance the carbon capture potential of forestry and peatland restoration, both using Council land assets, and also with other land managers. We will also work with communities to promote woodland planting. (Action L3 to L7 – Appendix 2)

We will work with local communities and the Tayside Biodiversity Partnership to develop biodiversity action plans, supporting both biodiversity and climate change mitigation in local areas (Biodiversity Villages Project). (Action L9, L10 & L11 – Appendix 2)

Agriculture is considered as one of the major sources of greenhouse gas emissions. Although not under our direct control, we will look to influence agriculture practices and promote more sustainable farming practices. In conjunction with changes in consumer behaviours, this can reduce emissions arising from agriculture. This will be carried out by promoting healthy and local eating, through the adaptation of direct measures such as the development of our Food Growing Strategy. Awareness-raising is also crucial in changing practices. Sustainable farming practices and consumer behaviours will be promoted through our public engagement sessions. (Action L8 – Appendix 2)

When investigating ways of reducing flood risk, natural flood management techniques can potentially slow the flow of floodwater and increase the amount of time it takes rain to reach watercourses. As a result of river surveys, work was carried out as part of the investigations for the Comrie Flood Protection Scheme. We are now working with landowners in the upper catchment of Glen Artney to explore restoring an area of peatland that was drained in the 1980s. Currently the peatland is releasing carbon in the atmosphere. Using funding from the Scottish Natural Heritage fund, Peatland Action, peatland can be restored to hold water to reduce flooding risks and store significant amounts of carbon. (Actions L12– Appendix 2)

Case Study: Blairgowrie Climate Café

Community Woodland for Carbon Capture

The Community is leading a partnership with the local landowner to plant community woodland on 10 hectares of land with grant aid provided for Scottish Forestry. 1,500 trees will be planted by local volunteers and householders each year and by year 10, 15,000 trees will be planted to capture approximately 200 tonnes of carbon. The site will be selected to maximise additional ecological benefits such as creating a habitat corridor and reducing water run-off and erosion. Householders will have the option to plant additional shrubs between the trees such as hazel that will create even more wildlife habitat and food sources.

Community sustainability starts at home as shown here by Blairgowrie.

8	**Mitigation – Business and Industry**

a)   *Why This is Important*

Perth and Kinross economy has more than 7,000 businesses employing more than 56,000 people.

As the main sources of carbon emissions in Perth and Kinross are transport, energy supply, and industrial processes, our business community has a key role to play in emission reduction. Agriculture and related land use is also a contributor of carbon emissions (8% in Perth and Kinross).

Individual businesses can reduce their carbon emissions and make their business more sustainable by reducing water and energy use; reducing waste including packaging, reducing fuel used, road and air miles; improving transport efficiency; encouraging employees to change behaviours and culture; redesigning processes, products and services, value chains; and increasing use of local supply chains.

For transport emissions, businesses are contributing to both commuter and transient traffic. A transport 'heat map' for light goods vehicles and heavy goods vehicles in Perth & Kinross (see Figure 21) demonstrates the relatively high volumes of traffic movements from the rural areas to Perth city which highlights an opportunity to reduce these miles through shared logistics and 'final-mile' deliveries. We will investigate with regional transport partners how many of these journeys could be offset or reduced, by consolidating journeys using low carbon vehicles. (Action SA8 – Appendix 2)

Figure 21
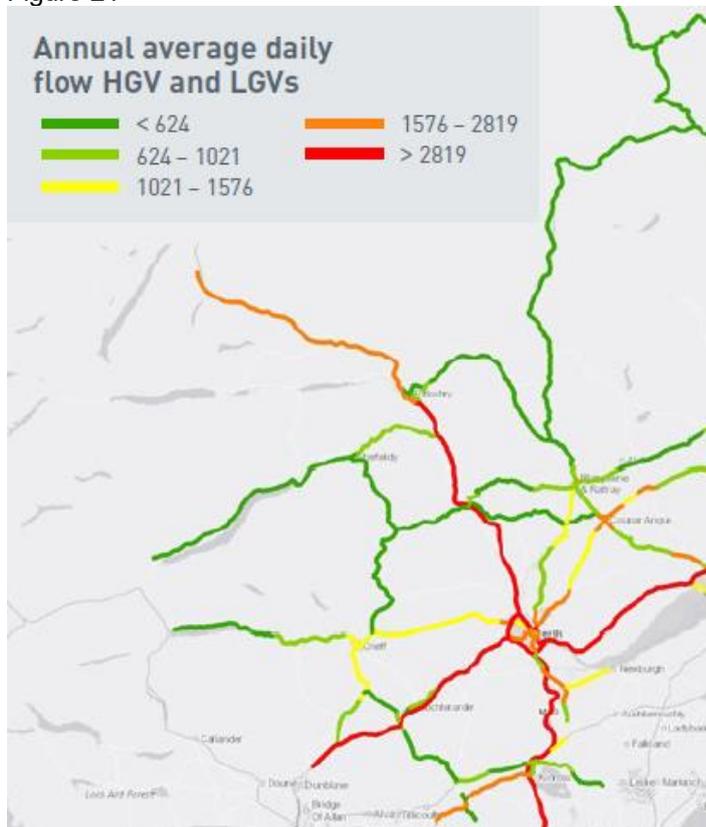
b)   What Are We Doing Now?

The Council is working with agencies and industry to develop flagship projects to support clean growth and achieve net zero carbon emissions. (Actions SA9 – Appendix 2) These initiatives are supported through the Tay Cities Deal and the Regional Economic Strategy:

- Perth West national Eco-innovation Business Park and Perth Innovation Highway including logistics and last mile delivery
- Binn Eco-Park, an innovative resource management site where new technologies are co-located to support a circular economy. Project Beacon, a flagship plastic recycling project will be developed on site aiming at recycling 80-90% of plastics and will benefit from £5.2m from Tay Cities Deal.
- Broxden Low Carbon Transport Hub will offer innovative clustering of EV charging facilities, energy storage and solar energy production.
- Food and Drink Innovation at James Hutton Institute will focus on supporting agri-tech including new ways of using barley and vertical farming.
- A Tourism Action Plan for Perthshire is currently in development. It will be underpinned by a strong sustainability message in recognition of emerging trends and following industry feedback, and with the ambition to develop further Perthshire's green destination credentials.
- A Circular Economy Tayside Action Plan has been developed with key sectoral actions in partnership with Perthshire Chamber of Commerce and other regional partners

We work with individual businesses to access support from agencies (Business Gateway, Scottish Enterprise, Zero Waste Scotland) to help them to become more sustainable. Resource Efficient Scotland http://www.resourceefficientscotland.com/ is offering free advice and support service to help small and medium sized businesses to become more resource efficient, cutting energy and water use and reducing waste. We will look at what more support we can offer (Action I1 - Appendix 2)

The Green Tourism Business Scheme (www.green-tourism.com) is the national accreditation programme which assesses the efforts of businesses to adopt more sustainable practices. The award categories are internationally acknowledged as indicators of good environmental practice. In Perth & Kinross there are currently 63 businesses with this award - amongst the highest for a Scottish local authority area.

4   What`s Next?

Perth & Kinross Council is a Scottish Council for the Development Industry (SCDI) sponsor partner in the Clean Growth Leadership Group. The Group aims to explore economic opportunities arising from clean growth and how businesses can grow by meeting the net zero carbon challenge. There are many business and job creation opportunities from the development of new products or services to address climate change. For example, rural businesses could generate their own energy through renewable micro-generation, use it or contribute to local decentralised energy scheme. The Group plans to report in Spring 2020, and we will explore opportunities arising from this group, as well as other opportunities from clean growth. (Action SA9 – Appendix 2).

Procurement processes can influence businesses and stimulate actions in relation to climate change. Working with the Tayside Procurement Consortium, the Council has a sustainable Procurement Policy. We will review our procurement approach, to ensure we are maximising our influence around climate change, as more national targets are introduced, and new technologies evolve (Action SA10 – Appendix 2).

The local business supply chain does not always the capacity or skills to meet the Council's requirements. There is a skills gap in relation to renewable energy technologies and energy efficient construction methods such as Passivhaus. We will work with local businesses to identify current and emerging skills gaps, to be prepared for the opportunities for business from climate change (Action I2 – Appendix 2)

Carbon emission reduction in transport and energy will have a significant impact we will carry out further work with the private sector on transformational actions to achieving carbon reduction targets for the area. (Action I3 – Appendix 2)

9	Climate Change Adaptation

a) *Why This is Important?*

i) *Our Climate Change*

The likely long-term climate change trends for Scotland include hotter and drier summers, wetter winters and increased sea levels. We may also experience extreme weather events such as drought and increased frequency of summer heatwaves, due to rising temperatures. These changes are already impacting people, places and biodiversity across Scotland - Figure 22 portrays higher average temperature and rainfall levels from 1910 to 2010. Scotland's climate is changing and we need to act.

Figure 22 Climate Trends for Rainfall and Temperature
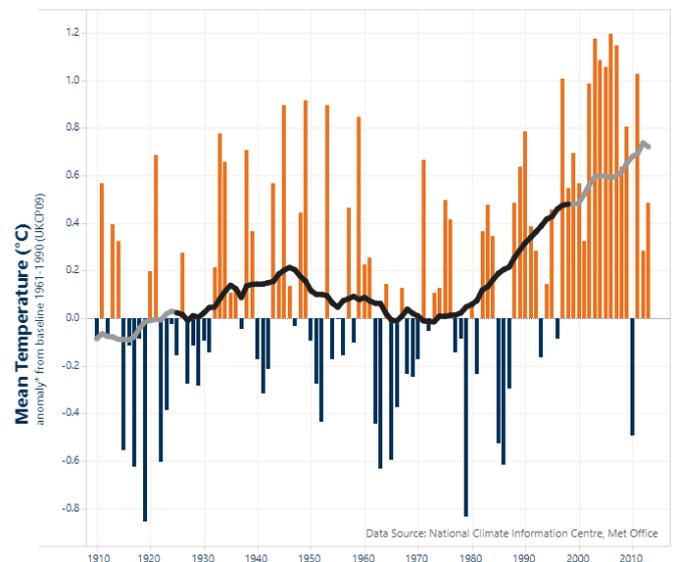
Source: Adaptation Scotland

ii) *What is adaptation?*

Adaptation is about responding to the changes that we have seen in our climate. Adjustments could include making changes to our buildings so they keep cool during hotter summers, or are less at risk of being flooded during wet periods. Adaptation Scotland has produced infographics explaining how we can change our environments to be more adaptable to climate change and weather fluctuations – click here.

Despite adaptation going hand in hand with work to reduce greenhouse gas emissions, adapting to the changing climate 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, creating new challenges for us to overcome.

The two aspects of adaptation are:

a.   adapting to present climate and weather; and
b.   making changes based on future projected changes in the climate.

iii)   Why adapt?

We therefore need to take early action to adapt, increase our resilience and reduce risks. Early adaptation actions can contribute towards the enhancement of both our natural and built environment, and to raise the quality of life of people within Perth and Kinross.

We also need to adapt in order to support biodiversity. By taking actions like introducing natural water management measures, which inevitably increase biodiversity habitats, we also help wildlife to adapt, too.

b)   *What Are We Doing Now?*

i)   Flooding

The most evident and frequent sign of extreme weather in Perth and Kinross is flooding, with several communities having experienced the devastating impact of flooding in recent years. To respond to this challenge, we have taken the following actions:

- In June 2016 the Council published its first local flood risk management plans setting out a range of actions it will be taking along with other responsible authorities to manage and, where achievable, reduce flood risk.
- Flood protection schemes had already been implemented in Perth, Comrie, Weem, Bridge of Earn and Milnathort. A new scheme at Almondbank has recently been completed, and the Council is promoting new flood protection schemes in Comrie, Milnathort, Kinross and Scone.
- In October 2019, Committee approval was given to develop flood protection schemes for Pitlochry and Aberfeldy. Further flood studies are on-going for Perth and Blackford and will shortly commence for Dunkeld and Invergowrie, with other areas to follow.
- The Council promotes the use of property flood protection products by private householders in co-operation with the Housing Service and businesses. Information is available on the Council's website and is made available to the public at community events.

Almondbank Flood Protection Scheme

ii)   Climate Change Adaptation in Council Policy

Climate Change adaptation is embedded within current Council policies and a number of projects across Perth and Kinross. Adaptation is part of both the Strategic Development Plan (TAYplan) and Local Development Plan, along with the associated statutory guidance.

Many policy measures are in place for assessing risk, including supplementary planning guidance for: Flood Risk and Flood Risk Assessments; Forest & Woodland Strategy; Zero Carbon and Sustainable Construction; Green Infrastructure and Zero Waste.

All relevant Council plans, programmes and strategies continue to undergo screening for Strategic Environmental Assessment (SEA) to assess their environmental impact (including climate change adaptation risk and opportunities).

iii)   *Adaptation Assessment*

We have recently undertaken an adaptation assessment, using Adaptation Scotland's benchmarking tool. This has allowed us to track our progress in relation to adaptation measures while also identifying gaps and potential areas for future progress.

iv)   *Resilience*

We engage closely with many rural communities to support local resilience, which prepares them to be ready for extreme weather, flooding, power outages, or any other disruption to normal activities. Participation has reached the highest level - 24 community groups now have resilience plans in place, and tailored support has been provided to other groups to enhance their local capability.

c)   **What`s Next?**

We need to keep climate change adaptation at the forefront of our plans, by preparing for, reducing, and as far as possible, negating future changes in our weather. This will include taking action on flooding to reduce the vulnerability of communities, and building infrastructure that is designed to be resilient to the more extreme weather we know is coming. While we do need more flood defences and more resilient infrastructure, we need most of all to work with, rather than against, nature and to build places and communities which are naturally resilient to a changing climate.

We will develop a climate change adaptation strategy and risk assessment, taking into account the learning from our adaptation assessment work (Action SA12 – Appendix 2).

We need to work with partners to ensure the comprehensiveness of our response to adaptation, for example working with Health and Social Care to develop actions to tackle the health effects of prolonged exposure to hot weather amongst vulnerable people.

10	**Just Transitions**

Ensuring a fairer Perth & Kinross is at the heart of the Council's Corporate Plan and the Community Plan, as we seek to promote fairness and give equal opportunities for all. This is embodied in the Perth & Kinross Fairer Futures report, the Tay Cities Deal Report and more recently, the Council's Child Poverty Action Plan.

The impacts of climate change will affect us all, however the most severe impacts are likely to be felt by people experiencing greater risks of poverty and disadvantage, and this gives us a further incentive to take urgent action.
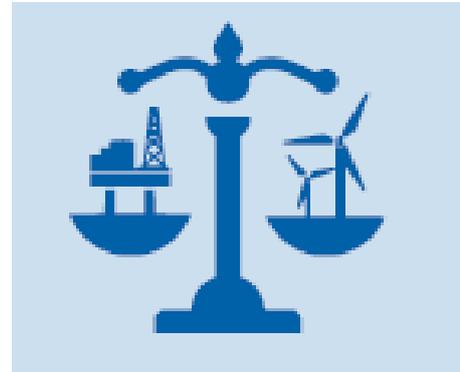
The transition to a zero carbon Perth & Kinross can have a wide range of impacts on fairness and equality. This is summarised in figure 23.

Figure 23 Human dimensions of the just transition
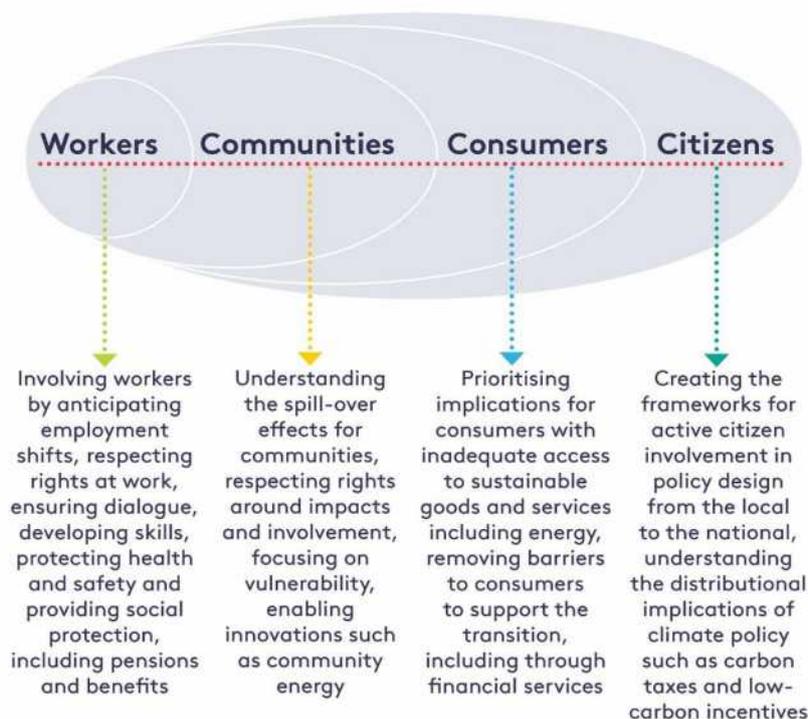
We have to ensure that in making this shift, we create a net zero economy that is fair for all, minimises potential for inequalities, and maximises the opportunities for all.

The move to zero carbon will involve difficult choices. It is vital that engagement with our communities will help determine the priorities. Part of our responsibility in developing our engagement plans, is to ensure as wide a representation as possible is involved in shaping our zero carbon future.

We need to guard against initiatives which, although designed to mitigate climate change, may disproportionately impact on vulnerable groups. For example, raising city centre car parking charges could act as a lever to encourage more sustainable travel, but that may also act as a barrier to lower income families, who may live in rural locations, with no access to public transport.

Our climate change actions provide an opportunity to take positive action towards fairness. For example, 30% of households in Perth & Kinross currently experience fuel poverty, and the Scottish Government has set ambitious targets to reduce fuel poverty (see part 1 c) of this report. Improved domestic insulation, renewable energy sources and district heat systems can confer the dual benefits of addressing climate change and tackling fuel poverty.

The importance of Just Transition principles have recently been recognised through inclusion in the new [Scottish Climate Change Act](#).

A Scottish Just Transition Commission has recently been set up to give advice to Scottish Ministers on practical, realistic and affordable recommendations for action, and we will take guidance from their findings. However, in the interim, we should ensure that the actions we take on climate change mitigation and adaptation are fair for all, minimise potential for inequalities, and maximise economic and social advantages (Action JT1 – Appendix 2).

11	**Working Together to Tackle Climate Change**

a)   Introduction

Successfully taking on this challenge will require everyone - the Council, our partners and our communities - to work closely together. Working together occurs at different levels, with different approaches, but we need to be aware about how our activities all fit together, so we know how we can best contribute to this challenge, and avoid duplication or gaps in our activities.

This part of the report explains how we are currently organised, and suggests how we can be better organised, and work better together, in three areas:

- The Council
- The Community Planning Partnership of local public services
- Other important partnerships

b)   The Council

Figure 24 set out how the Council is organised to deliver on its climate change responsibilities.

Currently, leadership in the Council for many aspects of climate change sits with the Environment and Infrastructure Committee, which has responsibility for Land Use Planning, Public Transport Roads and Traffic, Parks and Open Spaces, Flood Risk Management, Waste Management Sustainable Development and Environmental Policy. With the increasing significance of climate change to all activities of the Council, we will review the most appropriate future Committee governance and reporting arrangements for the climate change agenda (Action WT1 – Appendix 2).

Figure 24 – Reporting and Governance for Climate Change
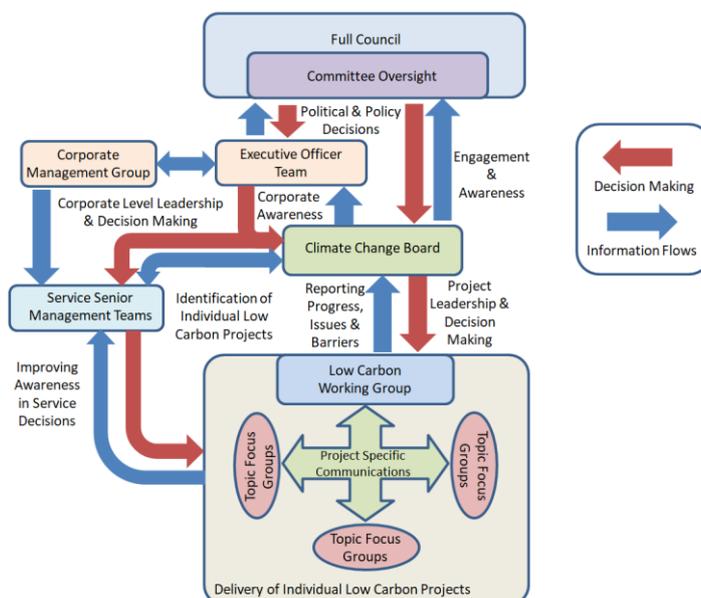
A cross-service Low Carbon Working Group was established in 2016. The group has a wide agenda including: heat mapping, district heating, renewables and the development of a Perth and Kinross wide Energy/Low Carbon Strategy.

In September 2017, Committee agreed to the establishment of a cross-service project Board to develop and co-ordinate a framework to ensure the alignment of all relevant plans, programmes and policies relating to climate change, low carbon, energy planning, air quality, transport planning and land use planning. This Board is the officer level forum for delivering the Council's climate change activities, with the Depute Chief Executive as Executive Sponsor.

Individual Council Services contribute to the climate change agenda through their Business Management and Improvement Plans (BMIPs), which set out how each Service supports the aims of the Community and Corporate Plans.

c)   Community Planning Partnership

The Perth and Kinross Community Plan sets out the shared approach between the main public services in Perth & Kinross area.   The Plan recognises that climate change is a multi-issue, interconnected subject, which has connections and implications across all five strategic objectives.

Since 2018, the Community Planning Partnership`s Environment and Public Realm Outcome Delivery Group, has taken the lead on climate change. This group has representation from Perth & Kinross Council, PKAVS, SEPA, NHS Tayside, Police Scotland, Scottish Fire and Rescue Service, Forestry Commission and SNH. In September 2019, the Community Planning Partnership Board identified climate change as a major issue that should be considered directly by the Board.

The need to create a step change in our approach to climate change is something that should be echoed amongst the Community Planning Partnership, as collectively we impact on emissions locally, and are key influencers of behaviours amongst our employees, as well as individuals and organisations that we engage with. We need to work with our Community Planning partners to ensure that we are collectively meeting the targets set for each of our organisations, and that we are sharing good practice, and learning from each other (Action WT2 – Appendix 2).

d)   Other Important Partnerships

Throughout this report we have highlighted a wide range of partnerships we are engaged in to tackle climate change. Our partnership work ranges from national groups such as CoSLA, the Society of Local Authority Chief Executives and the Scottish Cities Alliance, through to local climate change action groups. We are mapping the partnerships which we are involved in, to ensure there are no overlaps, and to identify gaps.

We will also work with the Council's Arms Length Organisations (Horsecross, Live Active Leisure and Culture Perth and Kinross) to ensure they meet their climate change obligations and maximise available opportunities. We collectively work with our neighbouring local authorities on several climate related issues, such as transport planning and land use planning, and we are keen to expand on this work.

One key area for future development at this stage relates to research and technology development. Climate change will require innovative approaches with leading edge technology, and we have an opportunity to develop links with local universities, including Perth College UHI, as well as other Tayside Universities and beyond, to give the Council access best practice in this area (Action WT3 – Appendix 2).

12	**Measuring and Monitoring**

a)   How will we know we are making the difference?

Since 2015/16, the Council, along with other Community Planning Partners, has been required under the Climate Change (Scotland) Act to annually monitor and report its climate change progress to the Scottish Government. Previous annual reports can be found here. The annual report provides performance information on the following:

- Governance, Management and Strategy
- Emissions, Targets and Projects
- Adaptation
- Procurement.

We recognise that this reporting format does not fulfil all our data requirements to build a comprehensive picture of climate change in Perth & Kinross, which would in turn inform our priority actions, and help establish realistic targets. We will carry out a gap analysis to identify and fill out information requirements. (Action M1 – Appendix 2).

Monitoring of our progress and performance will be an essential part of our governance. We recommend reporting on our progress on an annual basis to the full Council, to give Elected Members the opportunity to challenge, scrutinise and support our work. (Action M2 – Appendix 2).

As part of the shared Perth & Kinross' wide approach to tackling climate change, we will also look to share data, and report on progress and performance information, within the proposed Climate Change Commission (Action M3 – Appendix 2).

13	Conclusions

Climate change will have a major impact on everyone in Perth & Kinross.

We acknowledge the need for urgent action, and this report sets out the interim measures we are taking, as a basis for much wider engagement with our communities and partners, on shared future climate change mitigation and adaptation actions.

Our proposed actions on climate change support many other wider benefits such as better health; air quality improvements; fuel poverty; child poverty and sustainable economic growth.

We recognise that there are going to be difficult decisions ahead but, by working together, we can share our commitment to tackling climate change and protecting our area so we can pass it on, for the enjoyment of future generations.

December 2019

Glossary of Terms and Jargon Buster

Climate change terms can be difficult to understand especially for people with less day to day contact with the topic. Below is a list of terms and acronyms commonly used.

Active Travel Hub Project: is a travel hub set up as a focal point for active travel facilities and as a hub/connecting point for cycle/walking routes, and could include, for example private bike storage, bike hire facilities, public transport information, changing facilities, etc.

Air Quality Management Area: An area where the air quality has been assessed and the levels of nitrogen dioxide and/or particulate matter and/or sulphur dioxide, exceed the National Air Quality Objectives.

Carbon capture and storage: A technology that captures carbon dioxide emitted from fossil fuel emissions.

Carbon neutrality: carbon neutrality means annual zero net anthropogenic (human caused or influenced) CO_2 emissions by a certain date. To achieve carbon neutrality every tonne of anthropogenic CO_2 emitted is compensated with an equivalent amount of CO_2 removed (e.g. by carbon capture)

Carbon offsetting: a "carbon" offset is a unit of carbon dioxide equivalent (CO_2e) that is reduced, avoided, or sequestered to compensate for emissions occurring elsewhere. Theses offset credits, measured in tonnes, are used as an alternative to making reductions in greenhouse gas emissions. In some cases, organisations can buy offset credits from projects located in sectors or countries not legally required to reduce their emissions.

Council Fleet: The vehicles used by Perth and Kinross Council to carry out duties and activities within our local communities. Types of vehicles may include pool cars, minibuses, vans, side-load vans, and HGVs (Heavy Goods Vehicles).

Co-production: can be described as, "co-creating services, involving service recipients in different stages of the process, including planning, design, delivery, and audit of a public service." Co-production is more than just consulting or informing people about decisions. It means including and enabling their involvement.

Circular economy: A system where resources are kept in use for as long as possible, with the aim to extract maximum value, then to recover and regenerate products and materials at the end of their useful life.

CO_2e - is the shorthand for carbon dioxide equivalents. It is the standard unit in carbon accounting to quantify greenhouse gas emissions, emissions reductions and carbon credits It is expressed in tonnes and written as **tCO2e**

Community transport schemes: community led transport services to meet unmet local transport needs, which operate for a social purpose and not for profit.

Corporate Travel Plan: A package of measures developed by an employer to encourage their staff to travel to work using sustainable modes of transport; walking, cycling, public transport or car sharing.

Cycling Walking Safer Streets: is a Scottish Government fund to allow local authorities to invest in creating a network of safer streets, with cycle lanes and paths, which enables people to become more active by walking, cycling and wheeling on a regular basis.

Decarbonisation: decreasing the ratio of carbon dioxide (CO_2) or all greenhouse gas emissions related to primary energy production. Full decarbonisation means zero unabated CO2 emissions from energy generation and industrial processes (i.e. not captured by carbon sequestration or storage).

Demand Responsive Transport (DRT): public transport which operates on demand from passengers to pick up and drop off passengers in accordance with their needs as opposed to a set timetabled local bus service.

Deposit Return Scheme (DRS): Deposit return schemes are used across the world as a way of encouraging more people to recycle drinks containers, such as bottles and cans. They work by charging anyone who buys a drink a small deposit for the bottle or can that it comes in. They get this money back when they return the bottle or can to a collection point to be recycled.

E-Bike: An electric bicycle, is a bike with an electric motor which assists when cycling, but still needs to be manually propelled by the cyclist.

Electric Vehicle: Vehicle that uses electricity for propulsion.

Energy Company Obligation (ECO): ECO is a government backed energy efficiency scheme to help reduce carbon emissions and tackle fuel poverty. It is designed to offset emissions created by energy company power stations. The scheme is administered by Ofgem and delivered by energy companies, through an obligation that is placed on them to make homes in Britain more energy efficient and cheaper to heat. The latest version of the scheme is called ECO 3.

The current scheme has been designed to focus on providing support to low income, vulnerable and fuel poor households.

15% of measures are to be delivered to rural homes and an increased proportion of the scheme (25%) can be delivered under local authority flexible eligibility (Perth & Kinross Council has published a Statement of Intent which relates to ECO eligibility)

Fluorinated greenhouse gases: Fluorinated gases are man-made gases that can stay in the atmosphere for centuries and contribute to a global greenhouse effect. There are four types: hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride.

Fuel poverty: a household is in fuel poverty if the fuel costs necessary for the home, are more than 10% of the household's net income

Greenhouse gas (GHG): Gases that contribute to the greenhouse effect by absorbing infrared radiation.

Home Energy Efficiency Programme for Scotland area based schemes (HEEPS – ABS): The Scottish Government funds local authorities to develop and deliver energy efficiency programmes (mainly solid wall insulation) in areas with high levels of fuel poverty. This funding is blended with Energy Company Obligation funding, owners' contributions, and

funding from registered social landlords, who may choose to insulate their homes at the same time.

The area-based schemes are designed and delivered by councils with local delivery partners. They target fuel-poor areas to provide energy efficiency measures to a large number of Scottish homes while delivering emission savings and helping reduce fuel poverty.

LiftShare Scheme: A car share business and brand, established in 2000 and is one of the largest car-sharing communities in the UK. A digital platform where users can find people in an area to car share with.

Local Heat and Energy Efficiency Strategies (LHEES): a proposed statutory duty to be undertaken by local authorities to establish area-based plans and priorities to link long term targets and national policies with delivery of energy efficiency and heat decarbonisation, in local areas.

Low Carbon: low carbon is a relative term. It is not specific in the way 'zero carbon' is, and so is not beneficial term when describing anything other than general principles. If a technology is low carbon, it causes or results in only a relatively small release of carbon dioxide into the atmosphere.

Low Carbon Transport Hub Project: is a transport hub consisting of low carbon refuelling facilities such as Electric Vehicle charging infrastructure and/or hydrogen refuelling infrastructure

Low Emission Zone (LEZ): Zones which set an environmental limit on certain roads to allow access to only vehicles that are deemed to have cleanest emissions

Net zero carbon: net Zero carbon emissions is considered a synonym for carbon neutrality. The overall CO_2 emissions produced are equalled by the emissions captured, creating a net zero effect.

Net-zero GHG emissions: this can be confused with net zero carbon emissions, but when accurately used, means all greenhouse gas emissions decline to zero, as opposed to just carbon dioxide. (source – World Resources institute)

Paris Agreement 2015: Thisis a treaty built upon the 1992 United Nations Framework Convention on Climate Change. The Agreement brings all nations into a common cause to take action in order to combat climate change and adapt to its effects, by also providing assistance to developing countries to do so. The Agreement sets a target to keep the global temperature rise below 2 degrees Celsius above pre-industrial levels and to attempt limiting the increase even further to 1.5 degrees Celsius. It requires nations to work towards the elimination of climate change through nationally determined contributions (NDCs).

Perth Active Travel Hub (PATH): An organisation focused on working with the Council to help deliver the active travel strategy and raise awareness on the benefits of active travel.

Smarter Choices, Smarter Places: Transport Scotland Grant administered by Paths for All since 2015. The grant is allocated to Local Authorities *" to encourage more people to reduce their car use in favour of more sustainable alternatives such as walking, cycling and public transport." (Transport Scotland)*

Sustrans Places for Everyone Programme: an investment programme funded by Transport Scotland/Scottish Government, which is targeting transformational change in street design to help facilitate a modal shift to walking and cycling across Scotland.

Switched on Towns and Cities Challenge (SOTC) Fund: A fund to facilitate an increase in the uptake of electric vehicles (EV) in Scotland's towns and cities by supporting local authorities with incentives and promotion of EVs. The SOTC challenge fund initiative will operate as a competitive capital fund with an annual call for bids.

TACTRAN: **"**Tayside and Central Scotland Transport Partnership" is a partnership with Angus, Dundee City, Perth & Kinross and Stirling Councils.

Tayside Biodiversity Partnership: Perth and Kinross Council has a legal duty to conserve and enhance biodiversity. Working together across all our services, we are developing the best ways to do this and, at the same time, contributing to other policies and initiatives. The Partnership covers the local authority areas of Angus and Perth and Kinross. The partnership is made up of statutory bodies, local authorities, non-government organisations and individuals.

Tayside Local Biodiversity Action Plan 2016-26: The Tayside Biodiversity Partnership has produced a local Biodiversity Action Plan to ensure that locally and nationally important species and habitats are conserved and enhanced through focused local action. The Action Plan charts the way ahead in protecting the multitude of flora and fauna that flourish across the county, as well as their habitats, bringing together organisations, communities and individuals by providing more than 140 projects.

Transport Act 2019: Enacted in November 2019, the Act makes provisions for low emissions zones; for powers of local transport authorities to operate local bus services in their areas; arrangements for people to be entitled to travel on local bus and other transport services; to prohibit the parking of vehicles on pavements and prohibit double parking;

Warm Homes Fund (WHF): The fund is designed to support local authorities and those organisations working with them to address fuel poverty. National Grid is working with Ofgem to decide how best to use this sum to benefit energy consumers.

The fund is primarily designed to incentivise the installation of affordable heating solutions in fuel poor households who do not use mains gas as their primary fuel.

Warm Homes Discount Industry Initiative (through SSE): larger energy suppliers deliver support to people living in fuel poverty or who are at risk of fuel poverty. Energy Suppliers can choose to deliver some of this support through Industry Initiatives.

The scheme that has been developed for Perth and Kinross with SSE, will help to provide energy advice, benefits checks and tariff checks through our Energy Advice Project through our delivery partner - Scarf. We can also help to fund energy efficiency measures such as insulation and heating improvements through the scheme. £100,000 has been pledged by SSE to fund the project in 2019/20.

Appendix 1 Council Motion, June 2019:

As a Council we wish to play our part in accelerating this transformational change, understand the implications for climate change in everything we do, and lead by example. This Council requests the Chief Executive to set out a route map to deliver, through co-production with citizens and other stakeholders, a low carbon Perth & Kinross, specifically to:-

1. Under the auspices of the Perth and Kinross Offer, establish a forum with our Community Planning Partners to scope out the required vision and transformational change necessary for climate change.
2. Report back to the Council before end of March 2020 with details of
   - A baseline report on where we are now both as a Council and the wider Perth and Kinross CPP Area
   - An analysis of our current plans and strategies and their compatibility with the need for transformational change
   - A route map and the identification of the resources required for delivery
   - Arrangements to ensure that the consideration of climate change is embedded in our decision making processes
   - Measures to ensure the Council is seen as an exemplar in reducing its carbon footprint, including measures which can be implemented immediately

Appendix 2   Action Plan

Interim Action Plan

This Appendix contains a summary of the initial actions discussed in the Interim Climate Emergency Report. The Action are divided into Strategic Actions and actions related to the specific sectors discussed in the report. The list of actions concentrates on new actions, or actions where the work is likely to expand in the short term. It does not contain all Council activities which contribute to the Climate Change agenda.

Note 1:
We have set out our actions in the report using the following timeframe and colour coding:

	Short Term	Within the next year
	Medium Term	1-3 years
	Long Term	3 years and greater (where we can estimate the time period we have added this in)

Note 2:

We have indicated the status of resources required for each action using the following colour coding

	Achievable within existing resources, or realistic prospect of additional resources (such as ongoing external funding)
	Reasonable likelihood of resource availability (eg potential new external funding)
	Future resourcing required to implement

For projects which include preparatory work (i.e. feasibility studies) and can be accommodated within existing resources but where the resources have not been identified to deliver the outcomes of the feasibility work, this is indicated with a * in the appropriate box

*

Action No	Reference to report section	Strategic Action	Lead	Timescale (see note 1 above)	Resources (see note 2 above)
Setting Out the Challenge					
SA1	**2**	Develop a co-ordinated community engagement programme and toolkit to raise awareness and support our communities in making changes to move to a more sustainable way of living.	Depute Director Housing & Environment		
SA2	**1**	Develop ambitious, clearly defined and achievable carbon reduction targets for the Perth and Kinross area jointly with our partners and communities, which are based on evidence.	Depute Director Housing & Environment		
SA3	**2 c)**	Establish a Climate Change Commission for Perth & Kinross	Depute Director Housing & Environment		
SA4	**4 c)**	Develop a comprehensive Mobility Strategy for Perth & Kinross through co-production with partners and stakeholders.	Head of Planning & Development		
SA5	**5 c)**	Set clearly defined and achievable **annual carbon reduction targets for the domestic and non-domestic property portfolio** for each area of the Council. This information will be shared with the wider community and industry.	Head of Property Services		
SA6	**5 b)**	Establish the **SMART Energy Network** for Council properties.	Head of Planning & Development		*
SA7	**6 c)**	Conduct a more detailed **greenhouse gas assessment of the Waste projects and activities**, to prioritise future climate change activities.	Waste Services Manager		
SA8	**8 b)**	Investigate options and costs in connection with the creation of a **freight consolidation centre**, which would reduce the emissions from large vehicles having to enter Perth City centre, with `last mile` deliveries via low carbon vehicles.	Planning & Housing Strategy Manager		
SA9	**8 b)**	Deliver flagship economic development projects to promote innovation and capture **clean growth economic opportunities**, as part of the Tay Cities Deal.	Head of Planning & Development		
SA10	**8 c)**	Review the Council's sustainable **procurement policy** to ensure most up to date climate change considerations are included	Corporate Procurement Manager		
SA11	**5 c)**	Work with private sector to develop a **decentralised energy generation and distribution network** in Perth City.	Head of Planning & Development		
SA12	**9 c)**	Develop a Climate Change Adaptation Strategy, with the engagement of Council services, Community Planning partners and our communities.	Planning & Housing Strategy Manager		
Setting Out the Challenge					
C1	**1 d)**	Develop shared emissions data information with Community Planning partners to identify collective contribution to emissions in Perth and Kinross.	Depute Director Housing & Environment		

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Community Engagement, Empowerment and Awareness

E1	**2 c)**	Work with communities and businesses to identify shared measures to make a step change to a low carbon economy.	Depute Director Housing & Environment		🟩
E2	**2 c)**	Organise with our partners a Climate Change Summit in May 2020 to showcase local best practices and stimulate engagement with key stakeholders leading to the United Nations "COP 26" Summit in Glasgow.	Head of Planning & Development		🟩
E3	**2 c)**	Develop an online training resource for all staff with modules on the Climate Change issues and how it affects the Council and the individual, a service specific module, and a module on actions they can take in their personal life.	Planning & Housing Strategy Manager		🟩
E4	**2 c)**	Develop dedicated web site, providing a local one-stop-shop on for all matters related to climate change.	Planning & Housing Strategy Manager		🟩
E5	**2 b)**	Establish an education/awareness resource pack for schools/communities with information across all aspects of climate change	Planning & Housing Strategy Manager		🟩

Climate Change Mitigation

Transport

T1	**4 b)**	Maximise the potential utilisation of Smarter Choices, Smarter Places (SCSP) fund to deliver sustainable and active travel.	Planning & Housing Strategy Manager		🟩
T2	**4 b)**	Extend the representation of the Mobility Board to ensure co-production of the Mobility Strategy with partners and stakeholders.	Head of Planning & Development		🟩
T3	**4 b)**	Carry out research into modal shift requirements, to inform the development of the Mobility Strategy.	Head of Planning & Development		🟥
T4	**4 b)**	Develop a strategy for the expansion of EV charging infrastructure	Planning & Housing Strategy Manager		🟩
T5	**4 b)**	Develop the low carbon and active travel hub's project	Head of Planning & Development		🟧
T6	**4 b)**	Develop a strategy to transform the Council's fleet to electric and alternative fuel vehicles	Fleet Manager		🟥
T7	**4 b)**	Raise awareness of alternative approaches to attending meetings across Council employees; including tele/video conferencing and provide training on using ICT equipment to reduce transport emissions	Head of Corporate IT		🟩
T8	**4 b)**	Publish and promote to Council employees the car lease scheme currently being developed for electric vehicles.	Head of Finance/ Planning & Housing Strategy Manager		🟩
T9	**4 b)**	Develop a revised Corporate Travel Plan for Perth and Kinross	Head of Environmental		🟩

			& Consumer Services		(green)
T10	**4 c)**	Bid for Smarter Choices, Smarter Places (SCSP) funding to support discounted bus fare initiatives targeting young people.	Parking, Public Transport and Civil Contingencies Manager		(amber)
T11	**4 c)**	Expand the potential demand for responsive transport and community transport schemes	Parking, Public Transport and Civil Contingencies Manager		(red)
T12	**4 c)**	Investigate options and develop plans for future park + ride sites at Luncarty, Walnut Grove and Bridge of Earn.	Planning & Housing Strategy Manager		(red) *
T13	**4 c)**	Apply for Scottish Government funding for air quality projects in 2020/21 which include cross service projects to tackle air quality and climate change.	Regulatory Services Manager		(green)
T14	**4 c)**	Develop active travel routes in the Dunkeld Road Corridor	Head of Planning & Development		(green)
T15	**4 c)**	Expand the network of active travel routes to provide a comprehensive network around Perth	Head of Planning & Development		(red)
T16	**4 c)**	Work with Taxi Operators to accelerate the transition to electric vehicles	Planning & Housing Strategy Manager		(red)
T17	**4 c)**	Work with Transport Scotland to deliver the Electric A9 project	Planning & Housing Strategy Manager		(green)
T18	**4 c)**	Engage with Scottish Government to include sustainable transport and active travel in the school curriculum.	Planning & Housing Strategy Manager		(green)
T19	**4 c)**	Identify options and costs to establish an annual "Bus Day" as an incentive to raise the profile of public transport by bus and promote public transport.	Parking, Public Transport and Civil Contingencies Manager		(red) *
T20	**4 c)**	Explore operating registered school buses within Perth City for non entitled pupils attending their catchment secondary school to reduce school run journeys.	Parking, Public Transport and Civil Contingencies Manager		(red) *
T21	**4 c)**	Prepare Impact Analysis and costings to identify funding for improving bus stop infrastructure.	Parking, Public Transport and Civil Contingencies Manager		(red) *

T22	**4 c)**	Improve bus priority measure at junctions managed by traffic lights using new technology and providing new bus lanes on key corridors.	Traffic and Network Manager		*
T23	**4 c)**	Undertake screening of the Perth City and Crieff AQMAs in 2020 to identify if the creation of Low Emission Zones (LEZs) or alternative vehicle access restrictions could reduce emissions.	Regulatory Services Manager		
T24	**4 c)**	Investigate options for further air quality related regulatory measures which support climate change mitigation.	Regulatory Services Manager		
T25	**4 c)**	Review options for workplace parking (including workplace parking levy), as a means to support more sustainable transport choices to disincentivise use of cars.	Head of Planning & Development		

Energy and Buildings					
B.1	**5 b)**	Prepare a costed programme and seek funding to complete the Local Heat and Energy Efficiency Strategy LHEES, as the basis for future planning and delivery of local energy systems in Perth & Kinross	Service Manager Planning & Housing Strategy		
B2	**5 b)**	Develop a programme to ensure all existing Council houses are brought up to EPC B by 2032	Head of Housing		*
B3	**5 c)**	Investigate the potential to deliver an exemplar project potentially to Passive House standard incorporating other sustainability measures including potential avenues for funding.	Planning & Housing Strategy Manager		*
B4	**5 c)**	Develop a comprehensive suite of measures for inclusion in the review of the Local Housing Strategy to assist our tenants contribute to meet the challenges of climate change mitigation	Planning & Housing Strategy Manager		
B5	**5 c)**	Work with local Housing Associations to maximise the number of social rented homes achieving EPC B by 2032	Head of Housing		
B6	**5 c)**	Carry out a comprehensive awareness raising programme, giving private landlords notice of impending EPC targets and directing them to the technical advice required, to allow them to upgrade their properties where required.	Private Sector Access Manager	March 2020	
B7	**5 c)**	a) Develop support for private landlords to work towards the required housing energy standards where there are issues with the co-ordination of multi owners. b) Monitor likely demand and consider options for resourcing this service including charging on a cost recovery basis.	Private Sector Access Manager		
B8	**5 c)**	Introduce a programme of home energy efficiency advice, co-designed with partner organisations, the third sector and the public a programme from April 2021.	Planning & Housing Strategy Manager		
B9	**5 c)**	Commission research in 2020-21 into fuel poverty in the private sector, to assess the scale of the problem and develop an action plan to tackle the issue.	Planning & Housing Strategy Manager		
B10	**5 c)**	Carry out an updated local Housing survey programme, similar to the one being carried out by Property Services to refresh information	Head of Housing		

		about the condition of the non-domestic estate portfolio.			
B11	**5 c)**	Develop options, costs and funding avenues for all new Council buildings to be Net Zero Carbon from 2025 in line with Scottish Government targets.	Head of Property Services		*
B12	**5 c)**	All buildings under refurbishment must have improved EPC rating, energy efficiency and reduce "in use energy" consumption to a level set in Property Services updated energy policy.	Head of Property Services		
B13	**5 c)**	Develop and cost investment opportunities to improve existing building stock to upgrade building fabric and glazing to include triple glazing as standard.	Head of Property Services		*
B14	**5 c)**	Develop and cost alternative fuel sources such as; hydrogen and bio fuels for heating.	Head of Property Services		*
B15	**5 c)**	Develop and invest in local district heat/electric network schemes where cost effective and achievable, for Council properties	Head of Property Services		
B16	**5 c)**	Expand programme of renewable heat sources such as air and ground source heat pumps, for Council properties	Head of Property Services		
B17	**5 c)**	A. Accelerate existing programmes of work which are already funded to invest in our estate portfolio. The works will include upgrading building fabric, glazing, installation of LED lighting and replacing inefficient heating systems with renewable technologies.	Head of Property Services		
B18	**5 c)**	B. Explore and secure alternative funding streams to assist the transition to zero carbon and meet Scottish Government Climate change targets.	Depute Director (Housing & Environment)		*
B19	**5 c)**	C. Review the property portfolio and reduce emissions through a combination of maximising the use of buildings and disposing of surplus properties (corporate property asset management review).	Head of Property Services		
B20	**5 c)**	D. Develop partnership working with other Public sector bodies to share buildings and resources to achieve net zero by 2045.	Head of Property Services		
B21	**5 c)**	Investigate options and costs for Passivhaus construction methods to achieve energy efficiency and quality such as planned housing projects and Learning Estate Projects. E. (A more detailed explanation of Passivhaus can be explained using the following link. http://passivhaustrust.org.uk/what_is_passivhaus.php)	Head of Property Services		*
B22	**5 c)**	Area-wide assessment of existing energy resource including demand for heat and transport; energy storage potential; building stock (domestic and non-domestic).	Head of Property Services		

B23	**5 c)**	Area-wide setting of future local energy targets for demand reduction and decarbonisation; and supply diversification and storage.	Head of Property Services		
v24	**5 c)**	Investigate working in collaboration with Scottish Water on district heating projects for School Estate and potential to include new social housing as part of this work.	Head of Property Services		
B25	**5 c)**	Investigate and cost options for a dedicated water management resource to reduce water consumption across the estate, reducing Council's costs and assist Scottish Water to reduce carbon emissions.	Head of Property Services		
Waste					
W1	**6 b)**	Explore initiatives to reduce the quantity of single use items used by the Council	Waste Services Manager		
W2	**6 c)**	Review how the national Deposit Return Scheme (DRS) and other take-back schemes can be introduced effectively in Perth and Kinross.	Waste Services Manager		
W3	**6 c)**	Explore the trial introduction of drop-off points for food waste.	Waste Services Manager		
W4	**6 c)**	Review our waste reduction, reuse and recycling to maximise emission reductions	Waste Services Manager		
Land Use					
L1	**7 b)**	Identify measures to support private landowners to facilitate and encourage forestation and peatland restoration.	Planning & Housing Strategy Manager		Peatland Action SNH Fund
L2	**7 c)**	Expand tree planting project in Perth Grammar, to more school grounds in Perth and Kinross to reduce their carbon footprint, improve the area and enhance Eco-Schools status.	Community Greenspace Manager		*
L3	**7 c)**	Investigate planting our 92 parks (38 hectares) with native trees that will capture greater tonnes of carbon dioxide each year.	Community Greenspace Manager		*
L4	**7 c)**	Investigate increasing the overall coverage of woodland in maintained open space from current level of 22% (220 hectares) that will capture increased tonnes of carbon dioxide each year and reduce emissions of grass mowing machinery.	Community Greenspace Manager		*
L5	**7 c)**	Explore the creation of 'Climate Parks' with local communities to become carbon stores and more resilient in a changing climate.	Planning & Housing Strategy Manager		*
L6	**7 c)**	Encourage communities and schools to enhance climate change mitigation, in their local school grounds and greenspaces using the Council funded Community Investment Fund.	Community Greenspace Manager		
L7	**7 c)**	Review the grassland management policy to support wildflower meadows cut once a year. This will reduce emissions from grass mowing machinery cutting areas and enhance biodiversity.	Community Greenspace Manager		
L8	**7 c)**	Develop a Food Growing Strategy	Community Greenspace Manager		*

L9	**7 c)**	Work across the Council to maximise opportunities for the Council to achieve actions set out in the Tayside Local Biodiversity Action Plan 2016-26.	Planning & Housing Strategy Manager		🟧
L10	**7 c)**	Work with local communities and Tayside Biodiversity Partnership to develop biodiversity action plans supporting both biodiversity and climate change mitigation (Biodiversity Villages Project)	Planning & Housing Strategy Manager		🟥
L11	**7 c)**	Explore the use of planning agreements to secure biodiversity actions to offset damage to sites caused by large scale development.	Planning & Housing Strategy Manager		🟩
L12	**7 c)**	Explore options to work with partners to create a monitoring strategy for peatland restoration to understand the benefits in a local context to encourage participation with local landowners.	Planning & Housing Strategy Manager		🟩
Business and Industry					
I1	**8 b)**	Identify how we can work further with agencies and industry bodies to provide advice and support to individual businesses to maximise their response to climate change.	Head of Planning & Development,		🟩
I2	**8 c)**	Stimulate local business supply chain and support skills development, in targeted areas.	Head of Planning & Development		🟥
I3	**8 c)**	Work with large employers to encourage employees to shift to public transport and active travel.	Team Leader – Transport Planning		🟩
Just Transitions					
JT1	**10**	Establish a toolkit of factors to consider when making decisions on climate change mitigation and adaptation actions, to ensure just transitions are prioritised	Planning & Housing Strategy Manager		🟩
Working Together to Tackle Climate Change					
WT1	**11 b)**	Review the most appropriate Committee to be the reporting body for Council`s climate change activity.	Depute Director Housing & Environment		🟩
WT2	**11 c)**	Develop shared Community Planning Partnership actions to tackle climate change mitigation and adaptation.	Depute Director Housing & Environment		🟩
WT3	**11 d)**	Develop a forum for engagement with universities, to explore technological opportunities for climate change.	Head of Planning & Development		🟩
Measuring and Monitoring					
M1	**12**	Undertake a gap analysis of existing climate change related data, to highlight further information needed to set SMART targets and indicators for progress.	Planning & Housing Strategy Manager		🟩
M2	**12**	Compile an annual report of our progress and performance in tackling climate change.	Planning & Housing Strategy Manager		🟩
M3	**12**	Establish a working group as part of the future Climate Change Commission to develop, collect and share key performance data to assist with progress monitoring.	Depute Director Housing & Environment		🟩

Appendix 3 Engagement Partners for Climate Change - Community Groups and Partners (indicative List of Potential Engagement Partners)

- Carse of Gowrie Sustainability Group
- Dunkeld Climate Café
- Blairgowie Climate Café
- Aberfeldy Climate Cafe
- Pitlochry Climate Café
- Letham Sustainability Group
- Muthil Community Energy Group
- Comrie Development Trust
- Highland Perthshire Development Trust
- The Glens Community Development Trust
- The HEAT Project
- Zero Waste Perth
- Tay Landscape Partnership
- Friends of the Ochils
- Rannoch Community Trust
- Tay Rivers Trust
- Citizens Advice Bureau

Other partners will be added to this list, as part of the engagement activity detailed in the report.