PERTH AND KINROSS CLIMATE CHANGE STRATEGY AND ACTION PLAN
(DRAFT- *FINAL VERSION WILL BE WEBBASED ON CLIMATE CHANGE WEBSITE*)

Introduction

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. The Council declared our support for the Scottish Government and UK Parliaments' climate emergency statements in 2019 and earlier this year declared its support to a number of climate change declarations.

It is now important that this intent is turned into practice, and this strategy and action plan sets out our next steps, outlining the initial route map to take us to a net zero carbon and climate resilient Perth & Kinross. Our approach 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 approximately 3% of emissions produced in Perth & Kinross. Most of the emissions come from heating our homes and buildings, driving our cars, buying consumer goods, and disposing our waste - so we all have a part to play.

The Council will use its community leadership and influencing role to work with other public agencies, businesses, communities and citizens to ensure we have a shared vision and strategy to address the climate emergency. This will be a central part of the 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 also need to recognise the impact of the global Covid 19 pandemic, making the most of the positive impact on our approach to climate change while minimising the negative effects.

COP26 has highlighted the key challenges we face across the globe, and together we can address the challenges of climate change – for current and future generations.

Context

Perth and Kinross is at the heart of Scotland's story with significant economic, environmental and social assets. We have a dispersed population of 152,000 people of whom approximately 50% live in and around Perth. The projected population in 10 years' time is only expected to be marginally greater with a gradual shift in distribution towards the Perth area, but with an increase in the number of older people.

We do, however, face major challenges. Our economy is broad-based and diverse but with an over-dependence on lower paid and lower skilled jobs in sectors such as tourism, agriculture and hospitality. Significant issues in relation to poverty, particularly in-work poverty, across the area have been identified and due to our geography and demography, a growing issue of social isolation in rural areas has highlighted a vital need for better transport and digital connectivity. The local economy has been impacted severely by several factors, not least the COVID-19 pandemic, and as such, radical innovation and great ambition, along with significant investment will be needed to regenerate the area.

Covid-19 has also had a significant impact on greenhouse gas emissions – some are positive and some negative. These include:

- **reduced transport emissions over 2020 and the first half of 2021 -** In Perth vehicles levels are now up to pre-pandemic levels, while public transport levels are significantly reduced.
- **domestic energy** – potential increase in emissions due to the increased electricity and heating requirements associated with spending more time at home.
- **non-domestic energy** – potential increase in heating emissions associated with the increased need for ventilation.
- **waste** – Changes in shopping patterns have led to an increase in household waste and recycling and recycling contamination rates have significantly risen.

The UK Climate Change Act 2008 sets the UK's approach to climate change and commits the UK Government to reach net zero greenhouse gases emissions by 2050. The Act also requires the UK government to produce a UK Climate Change Risk Assessment every five years to assess current and future risks and opportunities for the UK from climate change.

Scotland has set more ambitious legislation in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 which makes provisions about advice, plans and reports in relation to targets for the reduction of greenhouse gases emissions. This includes reaching net zero by 2045 and has set interim targets to reduce net emissions by at least 56% by 2020, 75% by 2030 and 90% by 2040 than the baseline year (1990) respectively.

Supporting the new targets set by the Act, the Scottish Government published their Climate Change Plan Update in 2020. "Securing a green recovery on a path to net zero: climate change plan 2018 – 2032 update" sets out the pathway for a green and just transition to net zero in achieving Scotland's climate change targets.

In addition to setting new emissions reduction targets, the Act also placed a duty on Scottish Ministers to act on climate change adaptation and prepare a programme of action. The second Scottish Climate Change Adaptation Programme (SCCAP2) was launched in 2019 and addresses the risks set out in the UK Climate Change Risk Assessment 2017 to help Scotland prepare for the impact of climate change. An annual report on SCCAP is also required under the

provisions of the Act and the first progress report was published in 2020.

The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 has also given local authorities the duty to ensure their local authority areas decarbonise in line with the Scottish Government Target, are resilient to the impacts of climate change and promote sustainable development. Compliance with this means climate change should be considered at the heart of our decisions and activities

Our Climate Change Strategy and Action Plan will be integral to delivering the targets set and to moving towards net zero. It focusses on the following overarching principles that our approach must:

- achieve Net Zero aligned with the Paris Agreement and the Scottish Government Targets, with the ambition of achieving them sooner.
- build a more resilient Perth and Kinross
- ensure climate action is fair and benefits all and we deliver a green recovery to Covid-19
- enhance biodiversity to help avoid an ecological emergency
- engage and empower children and young people to take action on climate change
- empower our communities and businesses to take climate action in line with the Perth and Kinross Offer

Under each of these principles, strategic commitments have been identified for Perth and Kinross Council to provide clarity to partners, residents, businesses over what our Climate Change Offer is. This is shown in Figure 1 below

To translate the Council's strategic objectives and commitments into deliverable progress, an action plan has been developed in parallel that sets out necessary action against eight thematic areas. These are:

- transport
- buildings and energy
- business and industry
- waste and circular economy
- land use
- climate resilience
- education and engagement
- governance

Discussed under each thematic area is a summary of the policy drivers, identified areas of focus, potential impact, and the challenges and opportunities. A climate action route map has been developed for each theme. Progress will be monitored using key performance indicators, details of which are included in the final section of this document.

Actions have been identified and will be prioritised based on the following factors:

- quick wins
- necessary detailed studies required to unlock action
- scale of impact
- availability and timing of external funding or partnership opportunities time taken to deliver results

Figure 1 Principles of the Perth and Kinross Council Climate Action Strategy

Climate change strategy					
Principle 1 **Achieving Net Zero aligned with the Paris Agreement and the Scottish Government Targets, with the ambition of achieving them sooner.**	**Principle 2** **Building a more resilient Perth and Kinross**	**Principle 3** **Delivering a fair transition and a green recovery**	**Principle 4** **Preventing an ecological emergency and enhancing biodiversity**	**Principle 5** **Engaging and empowering our children and young people**	**Principle 6** **Empowering our communities in line with the Perth and Kinross Offer**
Decarbonising our operations ***Aligning our investments***	***Mainstreaming climate resilience into asset reviews***	***Taking action to reduce fuel, food and transport poverty***	***Delivering biodiversity strategies and actions***	***Listening to our young people, encouraging them to have their say and acting on their views, ideas and priorities***	***Working in partnership with our residents, businesses and community partners to support them to make transformational change***
Allocating appropriate capital and revenue funding ***Delivering on our priority themes***	***Managing climate change risks proactively***	***Ensuring climate action addresses rural and urban climate challenges***	***Strengthening our capacity to implement nature-based solutions***	***Continuing to ensure the curriculum supports learning about climate change, including their understanding of their personal contribution***	***Acting as an enabler for community-based climate change***
Continuing to develop our base evidence ***Reviewing our climate change plan annually*** ***Demonstrating our collaborative working***	***Continuing to raise awareness with communities*** ***Promoting land use practices that contribute to natural flood management***	***Improving the energy efficiency of social housing*** ***Working with businesses to identify and address skills shortages to support the green economy***	***Monitoring the impact of a changing climate on our ecosystems***	***Leading by example through, minimising emissions through best practice in energy, waste and transport*** ***Utilising school grounds to promote biodiversity, food growing and healthy eating***	***Providing and signposting our communities to trusted sources of advice and funding***

Principle 1: To Achieve Net Zero aligned with the Paris Agreement and the Scottish Government Targets, with the ambition of achieving them sooner, PKC will focus on the following strategic commitments:

- *decarbonise our operations in-line with a 1.5^{o}C trajectory and Scottish Government targets and support Perth and Kinross Council Area. These include a commitment to achieving a 75% reduction in emissions by 2030 and reaching net zero by no later than 2045.*
- *commit that all Council investments will be aligned with the vision and plan for a net zero and climate resilient Perth and Kinross.*
- *allocate appropriate funding in capital and revenue budgets to achieve these commitments*
- *deliver action across our priority themes of transport, buildings and energy, waste and the circular economy, business and industry, land use, climate resilience and, engagement & education*
- *continue to develop the evidence base to ensure that the scale and pace of action, is sufficient to meet our targets.*
- *undertake an annual review of climate action plan and adapt as required.*
- *demonstrate our ability to work with and learn from other cities.*

Principle 2: To build a more resilient Perth and Kinross, PKC will focus on the following strategic commitments:

- *mainstream climate resilience into all council asset reviews and decisions*
- *be proactive to the risks posed to Perth and Kinross by climate change*
- *assess and review the strategic climate risk assessment for Perth and Kinross*
- *continue to raise awareness within communities about how they can protect themselves from the effects of climate change*
- *continue to take a proactive role in managing and, where achievable, reducing overall flood risk to homes and businesses in Perth and Kinross*
- *promote land use practices and landscape scale changes that contribute to natural flood management including maximising the use of Blue Green Infrastructure in urban areas*

Principle 3: To deliver a fair transition and a green recovery to Covid-19, PKC will focus on the following strategic commitments:

- *ensure recovery actions are compatible with climate action plans*
- *take action to reduce the prevalence of fuel and transport poverty amongst our residents*
- *ensure climate action addresses rural, as well as more urban, climate challenges*
- *improve the energy efficiency of our social housing estate and encourage our partners to do the same*
- *promote healthy, seasonal and local eating*
- *identify and address skills shortage in business and industry with key employers including in the supply chain*

- *work with businesses in developing transition plans identify the skills needed for a green economy*
- *support the on-going development of a circular economy in Perth and Kinross*

Principle 4: To prevent an ecological emergency and enhance biodiversity, PKC will focus on the following strategic commitments:

- *declare an ecological emergency, as well as a climate one, and sign the Edinburgh Declaration on post-2020 global biodiversity framework*
- *accelerate PKC biodiversity strategies and actions to keep pace with the UK and Scottish Government Biodiversity Strategies and Action Plans*
- *strengthen our capacity to implement nature-based solutions*
- *monitor the impact of a changing climate on our ecosystems and take appropriate action*

Principle 5: To engage and empower our children and young people, PKC will focus on the following strategic commitments:

- *recognise the disproportionate impact of climate change on children and young people and listen to and act on their views, ideas and priorities*
- *encourage and support children and young people to have their say on influencing the climate change response including by supporting their participation in the Climate Commission and Citizens Panels*
- *ensure the curriculum supports learning about the causes and effects of climate change*
- *ensure our children and young people develop an understanding of their own personal contribution to tackling climate change*
- *set a good example by minimising the greenhouse gas emissions within the school estate by ensuring best practice is adopted in the fields of energy conservation, waste, water management and transport*
- *utilise our school grounds where possible to promote an understanding of biodiversity, food growing and healthy eating*

Principle 5: To empower our communities in line with the Perth and Kinross Offer, PKC will focus on the following strategic commitments:

- *work in partnership with our residents, businesses and community partners and support them to make transformational change*
- *act as an enabler to community-based climate action*
- *develop where needed partnership agreements to provide accountability*
- *consider the recommendations and guidance of the Perth and Kinross Climate Change Commission in future plans and action*
- *provide and signpost our communities to trusted sources of advice and funding*

Priority Theme 1: Transport

The Strategic Challenge

The clear linkages between climate change and transport are now readily apparent. Addressing, and understanding, how people will travel and work over the coming decades will be key in reducing emissions. Transport accounts for 52% of the total $C0_2$ emissions in Perth and Kinross and has proven the hardest to reduce to date. Breaking the transport emissions down further, cars provide roughly 45% of the emissions, light and heavy goods vehicles both around 23% each, with trains providing the remaining 9%.

Policy drivers

Due to the majority role transport emissions contribute to Perth and Kinross's overall emissions, reaching the 2030 emissions target will be impossible without significant changes to transport emissions. There are several additional transport specific policy drivers that will prove challenging to achieve, namely the Scottish Government targets for modal shift – a 20% reduction in vehicle kilometres by 2030. This will would equate to a more than tripling of bus transport or other active travel measures. Over the same period, there is the need to see a dramatic transition with EVs expected to replace phased out petrol and diesel engines. How the council adapts to these changes, and what the potential implications are, is a significant issue to be addressed.

There are UK-wide targets for no new petrol or diesel cars vehicles to be sold from 2030, with more stringent targets specifically focused on the public sector. These include the requirement for petrol and diesel cars to be phased out of the Council car and light vehicle fleet by 2025 and no new heavy vehicles from 2030.

Areas of focus

The focus areas for the **Transport** theme are:

- ***Increase active transport across Perth and Kinross:*** While the scale of change needed in transport mobility is known, the plan for how to achieve this remains uncertain. A new mobility strategy will be crucial to develop detail associated with individual projects, including a plan for delivering a comprehensive active travel network, the growth of urban logistics and the growth of new technologies applicable to the transport field. To ensure quick wins are delivered, progress will continue to deliver the Smarter Choices Smarter Places (SCSP) fund to deliver sustainable and active travel.

- ***Accelerate the EV transition:*** Modelling shows that this area has the potential to make the biggest impact on Transport emissions. The future role and development of Electric Vehicles and other alternative fuel technologies will also need to be addressed as a key part of an overall wider emissions reduction and wider mobility strategy. There will need to be a detailed review of how the Council will proceed with the promotion and development of Electric Vehicles, as well as considering how we can accelerate the transition of Perth and Kinross' taxi fleet. There will also need to be flexibility in our approach for alternative power sources for vehicles.

- ***Improve public transport provision:*** The Council will work with public transport providers and regional partners to consider public transport requirements for the future, including for the emerging field of demand responsive transport, especially for rural areas.

- ***Reduce vehicles in town centres:*** A reduction in the use of vehicles in town centres is required to improve air quality and make space for safe and pleasant active travel and public transport. Delivery of the Cross Tay Link Road will lead to significant traffic reduction in Perth, freeing up space for non-vehicle users. An expansion of up to three Park and Rides for Perth will also help, as will the exploration of more innovative methods like Community Car Clubs.

- ***Ensure resilient transport systems:*** Actions associated with improving the resilience of the road network are required, with an urgent need to focus on scour provision for bridges and improving drainage provision for the rural road network (Linked with the Resilience action plan, Theme 6)

While lobbying for improved rail services will continue by the Council, rail has not been focused on in this plan as the lead in this area is the Scottish Government.

Impact

The impact of these actions will be largely dependent on how willing our residents and businesses are to come on this journey with us. Modelling shows the rate of EV uptake plays the most significant role in emissions cuts. Modelling has shown that most feasible way to reach the 56% emissions reductions needed by 2030. This could be achieved with a an EV uptake of 50% and a 30% reduction in car based general employment, commute and other trip rates.

Key challenges and opportunities

As we slowly recover from the impact of Covid, there remains a significant degree of uncertainty in terms of how people will carry out their daily activities. Car volumes now appear to be at pre-covid levels but changes in how daily travel is distributed throughout the day is being noticed, along with significant reduction to public transport usage. These figures need to be caveated with the current home working for many of the major employers in Perth and Kinross including the Council.

The use of home working currently seems likely to remain at least on a hybrid basis. However, both bus and rail transport have fundamental issues to consider in the future and how their business models will work. The impacts and changes on how bus services are delivered in the future is particularly important for the Council in terms of future revenue budget provision.

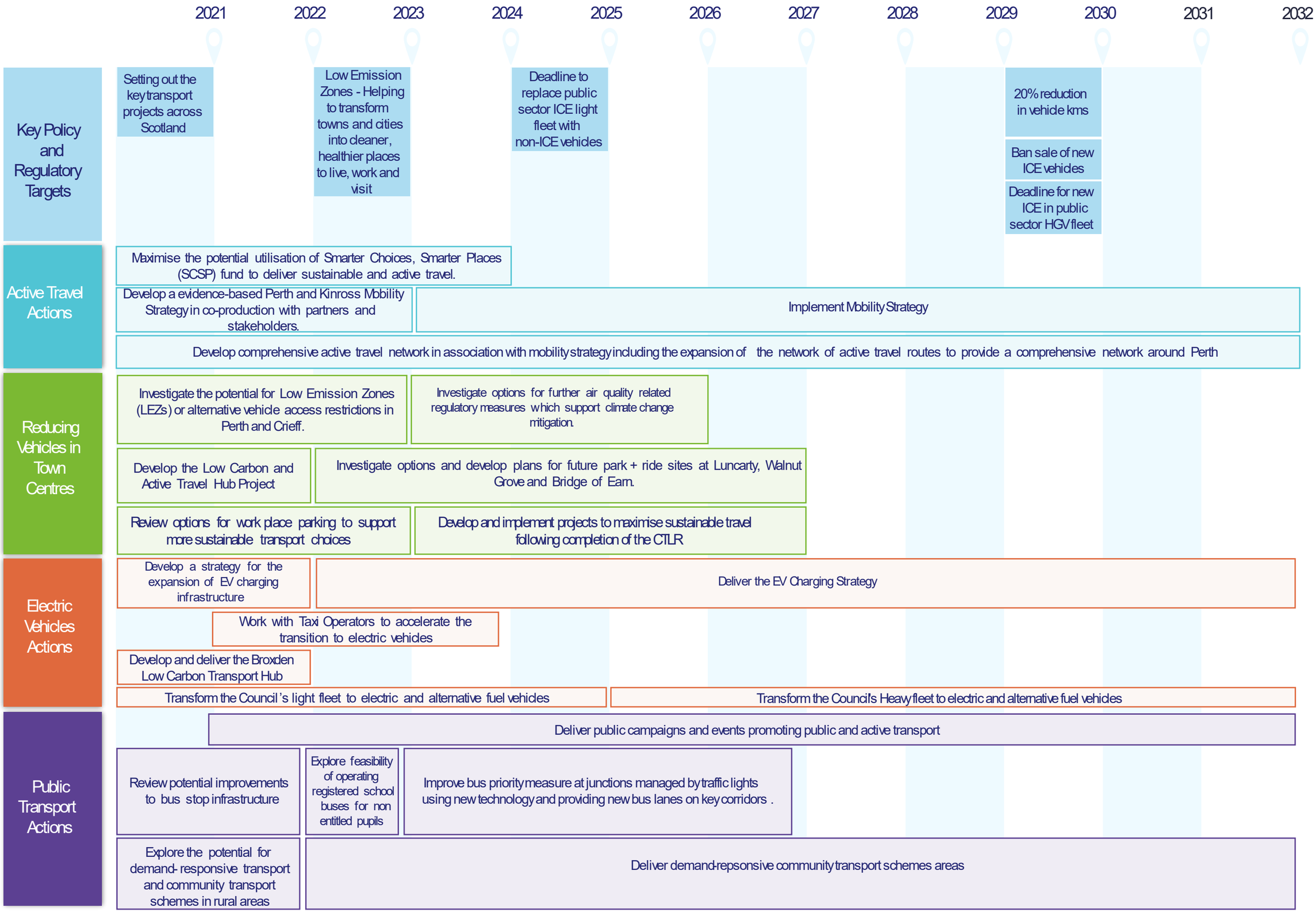
Reduction in vehicle kms by 20% is a key challenge, as if it was all met by public transport, this would be equivalent to a 360% increase on 2019 levels. Projected population growth, especially in edge of town developments will pose additional challenge to achieving this target.

The large rural population in Perth and Kinross poses many challenges for efficient transport emission reductions. Innovative approaches are required including around demand responsive transport. Electric vehicles have the potential to also have a big impact on rural transport emissions.

While electric vehicles will play an important part of the transition, it is important that they are only part of the solution. While the cost point of electric vehicles is rapidly decreasing, it still will remain

unaffordable to many residents. The availability of public charging facilities with be a crucial factor in encouraging the EV transitions. This will require a strategic approach to EV charging ensuring both urban and rural areas have comprehensive facilities to cater for the long-distance traveller, visiting tourist as well as those in flats who have no access to onsite charging.

There is currently an absence of accurate real time data and information. This will be crucial for maximising the efficiency of the transport network and understanding the effectiveness of different measures. Faster emissions feedback is needed from annual BEIS data that is published with an 18-month delay.


2021
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2032
Key Policy and Regulatory Targets
Setting out the key transport projects across Scotland
Low Emission Zones - Helping to transform towns and cities into cleaner, healthier places to live, work and visit
Deadline to replace public sector ICE light fleet with non-ICE vehicles
20% reduction in vehicle kms
Ban sale of new ICE vehicles
Deadline for new ICE in public sector HGV fleet
Active Travel Actions
Maximise the potential utilisation of Smarter Choices, Smarter Places (SCSP) fund to deliver sustainable and active travel.
Develop a evidence-based Perth and Kinross Mobility Strategy in co-production with partners and stakeholders.
Implement Mobility Strategy
Develop comprehensive active travel network in association with mobility strategy including the expansion of the network of active travel routes to provide a comprehensive network around Perth
Reducing Vehicles in Town Centres
Investigate the potential for Low Emission Zones (LEZs) or alternative vehicle access restrictions in Perth and Crieff.
Investigate options for further air quality related regulatory measures which support climate change mitigation.
Develop the Low Carbon and Active Travel Hub Project
Investigate options and develop plans for future park + ride sites at Luncarty, Walnut Grove and Bridge of Earn.
Review options for work place parking to support more sustainable transport choices
Develop and implement projects to maximise sustainable travel following completion of the CTLR
Electric Vehicles Actions
Develop a strategy for the expansion of EV charging infrastructure
Deliver the EV Charging Strategy
Work with Taxi Operators to accelerate the transition to electric vehicles
Develop and deliver the Broxden Low Carbon Transport Hub
Transform the Council's light fleet to electric and alternative fuel vehicles
Transform the Council's Heavy fleet to electric and alternative fuel vehicles
Public Transport Actions
Deliver public campaigns and events promoting public and active transport
Review potential improvements to bus stop infrastructure
Explore feasibility of operating registered school buses for non entitled pupils
Improve bus priority measure at junctions managed by traffic lights using new technology and providing new bus lanes on key corridors .
Explore the potential for demand- responsive transport and community transport schemes in rural areas
Deliver demand-repsonsive community transport schemes areas

Priority Theme 2: Buildings and energy

The Strategic Challenge

The way we heat and power our buildings is a major contributor to greenhouse gas emissions. Across all of Perth and Kinross, the total emissions from domestic buildings is 266 ktCO2 and non-domestic including public sector and commercial uses is 104 ktCO2, of which 16 ktCO2 is from the Council's own estate. This is mainly from space and water heating, as well as the equipment we use in our homes and businesses.

Policy drivers

There are several legislative and policy targets, applying to both the Council's own estate as well as to the wider Perth and Kinross area. On a domestic level, this includes a requirement for any social housing that is to be let from 2026 to be a minimum of EPC D and, from 2032, a minimum of EPC B. In the private rented sector, it is more stringent with a requirement that from 2025, for properties to be re-let, they need to be a minimum of EPC C if technically feasible - with all properties upgraded by 2028. The Scottish Government's Climate Change Road Map has a milestone for all owner-occupier properties to be a minimum of EPC C by 2040.

On the non-domestic side, there is a medium-term target of 75% emissions reductions from buildings by 2030 and a long-term public sector target for buildings to have zero emissions heat by 2038. There will be a consultation in 2022 focused on interim dates, with some targets expected to be brought forward to as early as 2024. For the non-domestic rented sector, all properties will need to be a minimum of EPC E by 2023 and all new rentals need to be EPC D by 2025 and EPC C by 2030

On a strategic level, there will be a requirement on Local Authorities to produce a Local Heat and Energy Efficiency Strategy (LHEES) by 2024. Associated with this wider strategy, the Heat Network Act (2021) enabled local authorities to become responsible for awarding heat network consents and for the designation of heat network zones.

Areas of focus

The focus areas for the **Buildings and Energy** theme are:

- ***Non-Domestic Council properties*:** The Council has a requirement to meet the challenging net zero targets set by the Scottish Government. To determine the full extent of the requirements, it will be necessary for the Council to review and assess the estate portfolio to develop options, costs and funding avenues for all Council buildings to be Net Zero by 2045. The options will include using low and zero carbon construction methods such as Passivhaus for all new build and refurbishment projects. There is an expectation that any measures undertaken should reduce heat demand, decarbonise heat and adopt a 'fabric first' approach improve energy efficiency. All of which align with the Scottish Government's draft Heat in Buildings strategy, proposed changes to the Scottish Building Standards and the Scottish Futures trust (SFT) Net Zero Public Building Standard.
    - Ahead of the full review of the Councils estate portfolio, a ten-year programme of quick wins across the non-domestic estate has been developed focused on off-gas grid properties, improving energy efficiency and

increasing solar potential. Following a more detailed review of the energy efficiency works required for the non-domestic estate planned for 2022-23, this programme will need to be significantly expanded to meet the public sector targets.

- Actions also aim to reduce emissions through a combination of maximising and optimising the use of the Council estate, reducing energy consumption whilst carefully considering our Corporate Asset Management strategy and smarter working review. It is important to champion behavioural change at all levels throughout the organisation to consider how we use our buildings better to achieve the required targets. Expenditure programmes should also align across services with an emphasis on the projects which are shown to provide the greatest reduction in greenhouse gas emissions.

- ***Non-Domestic Perth and Kinross properties*:** Actions include developing partnership working with other public sector bodies and community planning partners to achieve Net Zero within Perth & Kinross by 2045. This will involve working collaboratively to share buildings and resources to meet these targets. An example of this being the recently completed project with Police Scotland at Crieff area offices.

    - It is important to continue to work together across the whole of Perth and Kinross to carry out an area wide assessment including the investigation of future local heat and energy efficiency strategies, using district heating networks where viable. This assessment would include existing energy resource demand for heat and transport; energy storage potential; building stock (domestic and non-domestic) and would provide the foundation for future work.

- **Domestic Council properties:** One of the policy drivers is the need to construct all Council New Build homes to meet a minimum EPC B and to be net zero by 2026. Developing an updated Design Guide, to provide clear guidance on our specification requirements is an important first step. We plan to investigate options and costs for Low and Zero Carbon construction methods, including Passivhaus, through delivery of exemplar projects where the 'fabric first' approach and measuring energy efficiency will be key considerations.

    - We will review and assess our existing Council housing stock (approximately 7,800 homes) to develop a programme of measures that will improve their energy efficiency up to a level of EPC B by 2032. As part of this, we may have to consider the retrofitting of properties and options for this will be investigated

    - Ways of supporting and encouraging our tenants to reduce the carbon footprint of their homes through behavioural change are also necessary, as this has the potential impact of reducing carbon emissions by up to 50%. Developing tenant knowledge and the means to use technology effectively is also key. Fuel poverty and income maximisation also need to be considered, to ensure that the impact on tenants is lessened. Opportunities for tying into heat networks will also be investigated.

- ***Domestic non-Council properties*:** To align with the requirements for the Council New Build properties, all new

affordable housing within the Perth & Kinross area will need to meet the requirements set out in our updated Design Guide and we will work with local Housing Associations (housing stock of approximately 4,000 homes) to maximise the number of social rented homes achieving EPC B by 2032.

- Work is also needed to raise the awareness of landlords in the private rented sector (approximately 12,000 homes) of the requirements they need to meet, and we need to find ways of directing them to technical advice with the aim of supporting them to upgrade their properties; this will include addressing the challenges of carrying out works to multi-ownership blocks.

- Where possible, we also need to assist private owners to prepare for the deadlines for the private housing sector (approximately 45,000 homes in Perth & Kinross). We should lead by example and will need to commission research into fuel poverty in the private housing sector so that we can quantify and understand some of the challenges that are being faced across this area of the housing sector within Perth & Kinross.

- One of the significant pieces of feedback received through public engagement is that residents want and need a place for trusted advice. Our Home Energy Advice services currently reach a few hundred households per year. 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 to meet their EPC obligations. One potential option is the provision of local and trusted one-stop shops for energy efficient advice. An example of this is the successful HEAT pilot project in Blairgowrie. We also need to ensure that the same level of trusted advice is available to our business community particularly small businesses.

- ***All properties:*** As part of the Council's response to mitigate the impact of Climate change, there are also several measures that we will undertake which combine both non-domestic and domestic buildings. These initiatives include supporting the development of the Perth Smart Energy Network to store and trade energy between buildings to utilise demand management and reduce energy consumption. An important action is also to engage with SSEN on ensuring that there is appropriate grid capacity available to feed in new renewable sources. This will be necessary to explore the potential for local energy generation, EV charging infrastructure and decarbonising heat for all buildings

  - We will also develop heat networks, where viable, in line with Local and National Energy Efficiency targets. Local Heat & Energy Efficiency Strategies (LHEES) are a key component of the Scottish Government's strategy for all buildings meeting net zero targets, and all local authorities will be required to prepare these short-to-long term strategies to reduce emissions from buildings and tackle fuel poverty. This will be by identifying coordinated actions for all domestic and non-domestic buildings tailored to the local area, as well as identifying zones suitable for the development of heat networks such as the district heating proposals being considered for the Thimblerow area of Perth. LHEES will have a vital role in planning our long-term approach to decarbonising the heat supply.

Impact

Assessing the impact of actions is challenging as it combines both building efficiency/heating sources as well as user behaviour. Addressing the emissions associated with the public sector non-domestic estate will save 3% of current total CO2 emissions. Energy efficiency improvements to the Council's social housing stock could save roughly another 3% of total emissions.

Working with our residents has the potential to deliver significant savings – for example 6.5% (61 kt CO2) of our total emissions come from oil and kerosine domestic heating systems. There are currently government grants for the transition away for these systems that can make the transition economically beneficial to residents. It is important to note that some Perth and Kinross residents are keen to make the transition, but local grid capacity is currently insufficient to allow an increased electricity connection.

Key challenges and opportunities

The first challenge associated with this work area is quantifying and planning out how to scale up work in this area. It is necessary to undertake a detailed assessment of existing buildings to work out the plan to move forward. This will both identify a significant resource demand, but also enable the Councill to bid for significant funds including the Scottish Government's Social Housing Net Zero Heat Fund.

There is a skills shortage both internally in the Council and across Perth and Kinross around the deployment of new heat technology and certain renewable technologies. This is a potential growth area for green jobs across Perth and Kinross.

While the data is not yet available across Perth and Kinross to assess the full impact of changed living patterns due to the pandemic, it is expected that emissions have increased across the Council's estate due to the need for increased ventilation and open windows. It is expected that the 2020 data will show an increase in domestic energy consumption due to people working from home, though this is expected to be offset by transport emissions savings.

Taking a fabric first approach to improving energy efficiency has the potential to provide reduced fuel bills to both the Council and our residents. With the current price differentials between grid-gas and electricity, the transition from gas to electricity may result in net increased operating costs and will be important to ensure that works do not contribute to increased fuel poverty.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Key policy and regulatory targets		Private rented homes to achieve EPC E	New building standards published Requirement for published Local Heat and Energy Efficiency Strategy	All new buildings consented to use zero emissions heating	Social housing to be EPC D Private rented homes to achieve EPC D	All new build social housing net zero			75% Reduction in emissions All fuel-poor households reach EPC C Private rented homes to achieve EPC C		All social housing to achieve EPC B	
Domestic PKC Actions	Carry out an updated Local Housing survey programme Review design guide for new build affordable housing	Develop energy efficiency and climate resilience improvement programme	Deliver improvements targeting EPC band D and below Investigate the potential for and deliver exemplar social housing projects, taking account of Modern Methods of Construction, including Passivhaus			Deliver improvements targeting EPC band B and below properties Deliver net zero affordable housing						
	Provide on going energy and water saving guidance to residents											
Domestic Perth & Kinross Actions	Work with local Housing Associations to maximise the number of social rented homes achieving EPC B by 2032											
	Carry out a comprehensive awareness raising programme for private landlords, giving notice of impending EPC targets and directing them to the technical advice required, to allow them to upgrade their properties where required.											
	Research and develop a fuel poverty action plan	Implement fuel poverty action plan										
	Local Heat and Energy Efficiency Strategy (LHEES) - Feasibility studies and preparatory work	Develop costed LHEES	Implement LHEES									
	Develop one-stop shops for home energy efficiency advice, co-designed with partner organisations	Expand and continue with public advice and support										
	Explore the feasibility of developing local district heat / communal heat / electricity networks where viable which use alternative non-direct emissions heat sources such as electricity, hydrogen or bio fuels											

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Non Domestic - PKC Actions	Re-evaluate existing upgrade and maintenace programmes to prioritse projects which reduce greenhouse gas emissions	Deliver on-going improvements to the Council estate and low carbon new facilities										
	Develop options, costs and funding streams to reduce greenhouse gas emissions and water usage, and improve climate resilience											
	Investigate options and costs for Low and Zero carbon construction methods including passivhaus to achieve energy efficiency and quality	Deliver Passivhaus / Zero carbon new builds										
	Replace all oil fired heating systems with non -direct emissions heat source, adopting a fabric first approach to reduce heat demand . Increase local energy generation and improve heating control systems . Increase level of smart metering for all utilities.											
	Work with energy suppliers to share ideas, discuss future solutions and partnership working in relation to energy supply and resilience											
	Review Eco-school certification and status	Provide operational support to improve operational energy efficiency of schools	Continue to implement energy efficiency improvements to the school estate									
Non Domestic - Perth & Kinross Actions	Engage with SSEN over electricity grid contraints and opportunities across Perth and Kinross	Area-wide setting of future local energy targets for demand reduction and decarbonisation; and supply diversification and storage										
	Area-wide assessment of existing energy resource including demand for heat and transport ; energy storage potential; building stock (domestic and non-domestic).											
	Develop partnership working with other Public sector bodies and community planning partners to share buildings and resources	Implement partnership working plan										
	Explore the feasibility of developing local district heat/communal heat/ electricity networks where viable which use alternative non-direct emissions heat sources such as electricity , hydrogen or bio fuels											

Priority Theme 3: Business and industry

Strategic Context

Business and industry emissions make up roughly 21% of Perth and Kinross's overall CO2 emissions. To avoid double counting, the 76 kt CO2 associated with commercial organisations have been included in the Non-Domestic buildings figure described above under Theme 2. There is an additional 156kt CO2 that is attributed to the Industrial Sector. Of the industrial sectoral emissions, over half are associated with the agricultural sector.

Business and industry have a wider impact than its direct operational emissions. Their Scope 3 emissions associated with staff transport and their supply chains will significantly increase this overall footprint. It is important to acknowledge that several businesses in Perth and Kinross have ambitious climate action plans.

Policy drivers

Unlike the other thematic areas, the policy drivers are less overarching and more sector specific than for other themes. Many of the drivers for business actions are the net zero policies of other businesses. For example, some of the largest employers in Perth and Kinross, such as Aviva, SSE, Stagecoach, Highland Spring and Tesco, have committed to the UN's Race to Zero Campaign. This means they are requiring, or will require, their suppliers to have Science Based Target Initiative net zero commitments in place as soon as 2023.

Areas of focus

The focus areas for the **Business and Industry** theme are:

- ***Data & Strategic targeting****:* This will be done by collating data and information from key employers and industry bodies. The key areas of Transport, Energy Efficiency of assets and Skills and Jobs have been agreed as strategic areas to focus on.
- ***Engagement with & Empowerment*** of the Business Community by supporting large employers to lead and champion the Race to Zero campaign and encouraging SMEs to participate.
- ***Strategic collaboration*** by delivering joint key projects in transport and energy efficient of assets with large employers, and by providing advice, support & tools to SMEs to reduce their carbon emissions
- ***Addressing just transition and skills shortage*** as well as supporting skills and job opportunities particularly with large employers and their supply chains.
- ***Measuring Performance*** by building up baseline data and enabling businesses to measure their performance through tools and learning sharing.

Impact

Working with our business community can bring significant carbon emissions as they can create a Business-to-Business virtuous circle through supply chains. As larger businesses strive to lead and become net zero champions, they will stimulate their suppliers to also meet required standards and provide data that could evidence these (scope 3 emissions). Pressure from consumer groups will also stimulate the business community to reduce their impact if they want to continue to sell their products and services.

Changing demand and supply chain will have an impact on skills and jobs where employees will have to train to gain new or enhanced qualifications to sustain their jobs or start new jobs. There is significant potential for green job creation with STUC research from 2021 indicating the potential for 131,000-367,000 new green jobs across Scotland over the next 15 years.

There would also be a ripple effect to other areas such as transport, energy or waste. Businesses will encourage employees to use active travel and public transport as well as decarbonising fleet and logistics. Businesses will install energy efficiency measures, renewable energy production on-site and smart grid opportunities to reduce carbon and save money. Businesses will reduce their waste and aim to use waste as a resource, stimulating a circular economy approach. There are currently grants or loans to support the transition that can make this economically beneficial.

Key challenges/considerations

It is important to note that SMEs will require to be supported to rise to these challenges, mainly by the provision of information and advice, but potentially also by financial incentives or support. The Council will have a key role to play in supporting business support agencies, networks and industry bodies to signpost and support SMEs.

The Council has, however, few levers available to influence the agriculture sector, which represents significant carbon emissions. Working through industry bodies will need to play a crucial role and this needs to be undertaken nationally.

As the business community transitions to low carbon/renewable energy and transport, the pressure on the local electricity grid will increase. However, the local grid capacity is insufficient to allow these increased connections. There would be a need for the Council to co-create with the business community and develop complementary options using off-grid/private network and smart grid solutions. This is the rationale behind the development of a Perth Smart Energy City programme to cluster public and private energy supply and demand in a cohesive public and private investment programme.

The transition is not only needed to address climate change, but also because it is good for business, creating sustainable, profitable businesses and jobs. It is important to continue to use this view in a context of business recovery. The important role of business champions and business networks has to be highlighted and supported.

It is also crucial that the transition is just and that people who could be affected by, or benefit from the transition are supported - such as people facing barriers to access training or jobs opportunities. The Council has a role to play as an employer, but also by continuing to provide employability support services.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Key National Policy and Legislation									75% emissions reduction by 2030			
Data and Strategic Targeting	Agree with key employers / businesses the key activities, locations or sectors to target to reduce carbon emission and just transition											
	Collate key info and carbon targeted reduction plans from key employers and industry bodies											
Strategic Actions	Develop joint strategic projects to decarbonise Transport (goods and people) with key employers in close liaison with the Transport Group	Deliver strategic transport projects in partnership with Businesses										
	Identify and share business continuity plans with key employers in close liaison with the Resilience Group											
	Develop joint strategic projects to decarbonise fixed and mobile asset including energy efficiency with key employers in close liaison with the Building and Energy Group	Deliver strategic energy projects in partnership with Businesses										
	Develop Perth West and Perth Eco-Innovation Park as a national net zero exemplar for decarbonisation of transport and energy											
	Promote with key employers/businesses the Race to Zero campaign to local businesses											
	Promote advice and support tools for SMEs to reduce carbon, access funding, ensure business continuity and measure progress											
Measuring Performance	Agree with key employers / businesses key indicators and measure performance	On-going monitoring programme for business action										
Skills / jobs	Identify skills gaps and potential green job opportunities	Promote skills development and green job opportunities including with key employers and their supply chain										

Priority Theme 4: Waste and the circular economy

Strategic context

Waste is an important area to tackle emissions-wise. The direct Scope 1 and 2 emissions associated with the treatment and processing for Council collected waste is only estimated as 18.5kt CO2e for 2020. Where waste has a much larger footprint is through its Scope 3 emissions, which are estimated at 134 kt CO2e. These are the emissions associated with the production of goods (e.g. the emissions associated with growing food that is going to waste) and the associated emissions that could be avoided if the product was recycled appropriately (e.g. recycled versus virgin glass).

Policy drivers

The waste sector has several policy targets at both a National and Perth and Kinross level. Progress on both is detailed in the table opposite.

Target	National Progress	Perth & Kinross
15% reduction of all waste by 2025, against 2011 baseline	Has been achieved twice since 2011 but highly dependent on construction waste. Latest figure (2018) is a 4% reduction	PKC has never achieved the 15% reduction. Latest figure (2020) is 7.1%
Minimum of 70% recycling of **all** waste (e.g., includes C&I)	Progress being made but has slowed. Latest figure (2018) is a 61% recycling rate	Latest figure (2020) is 47.7% recycling rate for all waste
Minimum of 60% recycling of household waste (by 2020)	Target very unlikely to have been achieved in 2020 for Scotland as a whole, but has been met by some Local Authorities. Latest figure (2019) is a 45% recycling rate.	2019 = 52.7% 2020 = 49.4%
Maximum 5% of all waste to landfill (includes C&I) by 2025 Landfill ban for municipal waste (SG reviewing whether it should include non-municipal)	(ALL Waste) Latest figure (2018) is 32% waste to landfill Biodegradable waste – on track to bring in ban in 2025. Latest figure (2019) is 0.7 million tonnes	All waste to landfill = 45.6% PKC to procure solution (2022)
Carbon emission reduction (waste sector) – reduction to 1.2 Mt (by 2025) and 0.8 Mt (by 2030)	Currently at 1.9 MTonnes, so 37% reduction required by 2025	PKC carbon emissions are 138 kTCO2e (2020). These emissions have decreased from 209 kTCO2e in 2011 - a reduction of 34%

Areas of focus

The focus areas for the Waste and circular economy theme are:

- ***Ensure alignment with the Scottish Government Climate Change Route map***: This aims to reduce waste and meet the national waste and recycling targets for 2025 and maximise the waste sector's contribution. This requires the Council to assess and plan how the national Deposit Return Scheme (DRS) and Extended Producer Responsibility (UK wide legislation) can be introduced effectively in Perth and Kinross. It also includes a review of the implications of Circular Economy Bill which will encourage the reuse of products & reduce waste. The Bill will tackle our reliance on single-use items and include measures to tackle textile pollution/fast fashion.

- ***Promoting a rapid transition to a Circular Economy:*** This starts by undertaking a Circular Scan to establish baseline data and help inform the design of a circular vision and strategy. A current state analysis will be conducted that involves a Material Flow Analysis (MFA) relevant to the built environment of the region and a socio-economic scan with a focus on key economic sectors, employment, and wellbeing. Following this, it is necessary to explore initiatives to reduce consumption of resources and make better use of existing products including tackling single-use items. The includes helping to establish a Reuse & Repair Network for Perth & Kinross.

- ***Developing and delivering thematic action plans for the high carbon emissions materials****:* This includes developing a Food Waste Plan and a route map for Circular Textiles and Sustainable Fashion.

- ***Improving our recycling services****:* This includes delivering new recycling services e.g., expand services to Perth City Centre and introduce twin stream recycling to increase capture of materials for recycling as well as improving quality of recycling in the dry mixed recycling service. Leading by example is important, so an early action will be to develop a Schools Recycling Plan to support wider climate change work within the school estate.

- ***Maximise value from waste by reducing Waste sent to landfill:*** This includes a focus on diversion of organic waste from landfill into recycling and energy production.

Impact

For reducing our direct Scope 1&2 emissions, the introduction of an Energy from Waste Solution, will decrease by 17 ktCO2e (92%). This does not reduce the larger Scope 3 emissions as it does not address the issues associated with the unnecessary emissions with items going into waste or enable items to be reused or recycled to remain at higher values of use.

Meeting the policy reduction targets of 15% reduction of all waste by 2025 and 70% recycling, will result in approximate Scope 3 reductions of 30 ktCO2e.

Key challenges and opportunities

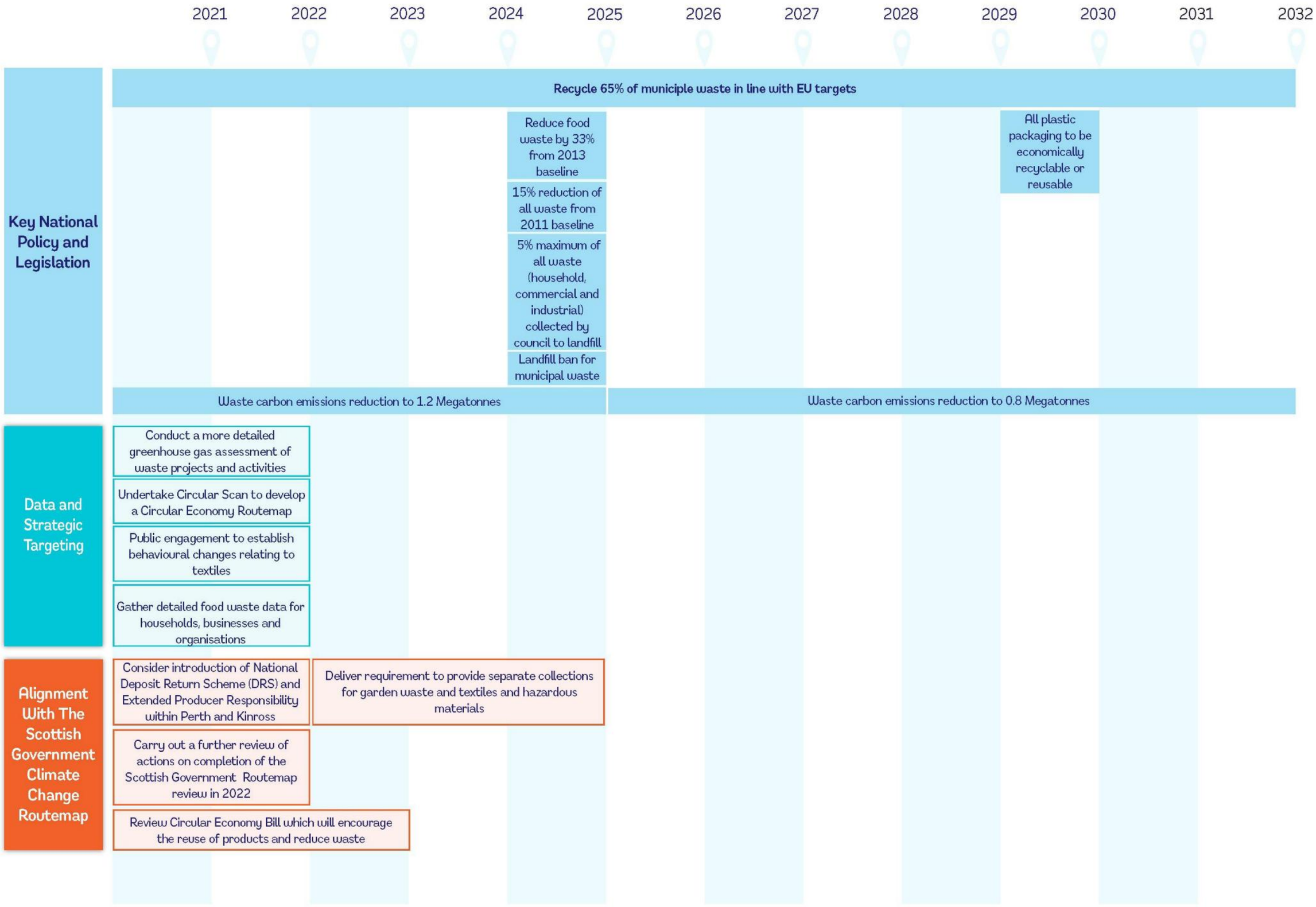
Several of the policy and legislative drivers still in development and an update from the Scottish Government is expected in Spring 2022. These will have significant implications on the Council's waste service operations and the national funding assistance available to local authorities. Locally, we need to actively engage in consultations to help shape achievable policy requirements.

Although there has been significant progress in reducing emissions in the waste and resources sector over the past 20 years, Scottish zero waste targets are currently not being met and there is limited data in some areas to assess progress. There is lack of detailed data at local level e.g., commercial and industrial sector which means assessing impact of area level/project level impact on carbon emissions is challenging.

The volume and type of waste arisings have fluctuated, and the quality of recycling (contaminated with non-recyclable waste) has been impacted negatively because of COVID-19. This is due in part to changes in consumer behaviour and increased homeworking and will require further monitoring.

Engagement and culture change will be an on-going priority to reduce unnecessary waste and improve the quality of recycling. Transformational change to embed the waste hierarchy which promotes waste prevention and reduction, reuse, repair and recycling requires significant positive behavioural change and informed and educated citizens and businesses.

There is an identified skills and capacity gap to take forward opportunities nationally and in Perth and Kinross, including in the repair sector. Developing expertise through joining the academic sector with industry is critical for developing these skills. Zero Waste Scotland identify that there is significant opportunity for job creation and predict that the transformation to a zero-waste society will generate at least 2,000 jobs across Scotland. To help capture these jobs, driving innovative solutions and supporting business with new business models is essential to overcoming barriers e.g., bio-refining of waste, plastics processing.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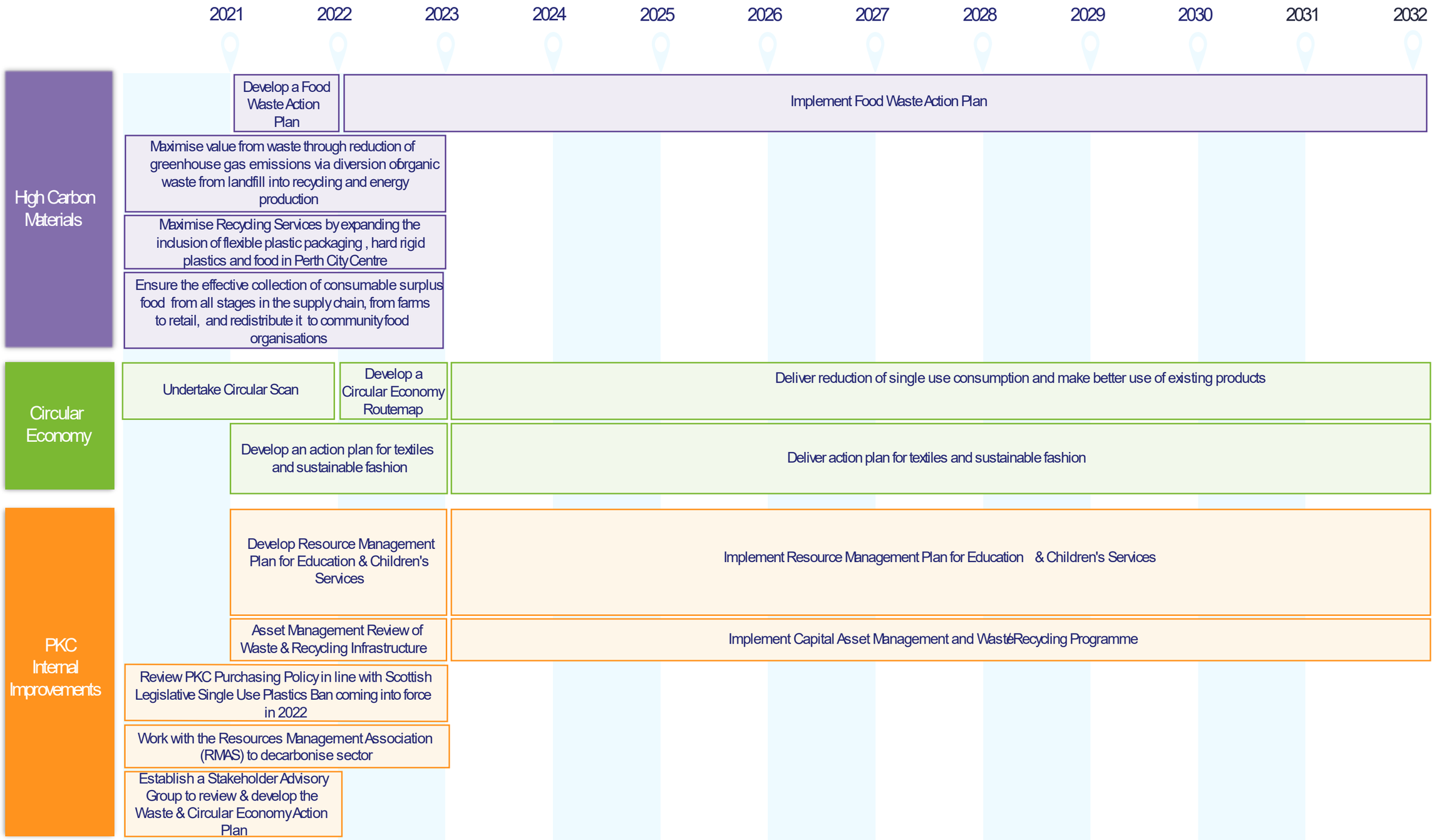
Key National Policy and Legislation
Recycle 65% of municiple waste in line with EU targets
Reduce food waste by 33% from 2013 baseline
15% reduction of all waste from 2011 baseline
5% maximum of all waste (household, commercial and industrial) collected by council to landfill
Landfill ban for municipal waste
All plastic packaging to be economically recyclable or reusable
Waste carbon emissions reduction to 1.2 Megatonnes
Waste carbon emissions reduction to 0.8 Megatonnes
Data and Strategic Targeting
Conduct a more detailed greenhouse gas assessment of waste projects and activities
Undertake Circular Scan to develop a Circular Economy Routemap
Public engagement to establish behavioural changes relating to textiles
Gather detailed food waste data for households, businesses and organisations
Alignment With The Scottish Government Climate Change Routemap
Consider introduction of National Deposit Return Scheme (DRS) and Extended Producer Responsibility within Perth and Kinross
Deliver requirement to provide separate collections for garden waste and textiles and hazardous materials
Carry out a further review of actions on completion of the Scottish Government Routemap review in 2022
Review Circular Economy Bill which will encourage the reuse of products and reduce waste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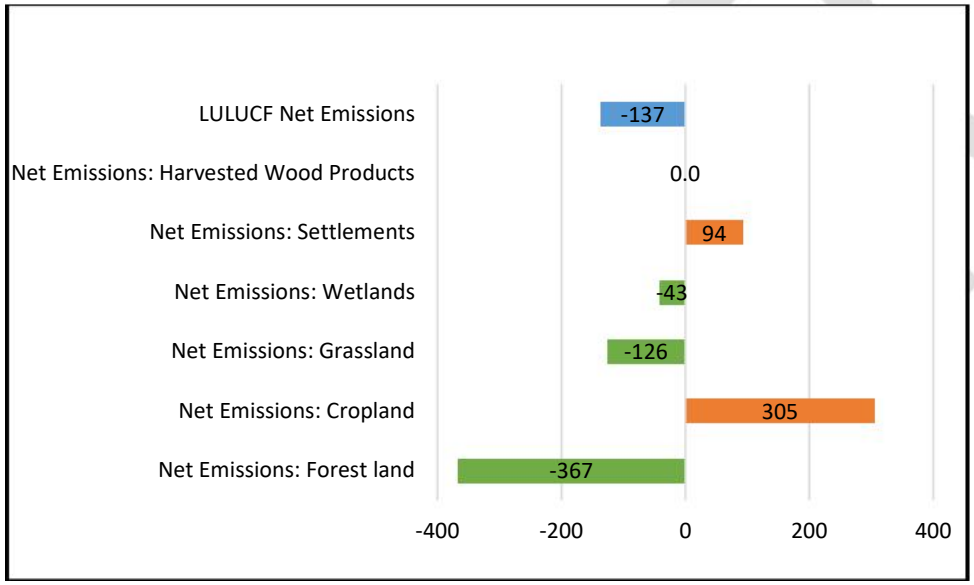
High Carbon Materials
Develop a Food Waste Action Plan
Implement Food Waste Action Plan
Maximise value from waste through reduction of greenhouse gas emissions via diversion of organic waste from landfill into recycling and energy production
Maximise Recycling Services by expanding the inclusion of flexible plastic packaging , hard rigid plastics and food in Perth City Centre
Ensure the effective collection of consumable surplus food from all stages in the supply chain, from farms to retail, and redistribute it to community food organisations
Circular Economy
Undertake Circular Scan
Develop a Circular Economy Routemap
Deliver reduction of single use consumption and make better use of existing products
Develop an action plan for textiles and sustainable fashion
Deliver action plan for textiles and sustainable fashion
PKC Internal Improvements
Develop Resource Management Plan for Education & Children's Services
Implement Resource Management Plan for Education & Children's Services
Asset Management Review of Waste & Recycling Infrastructure
Implement Capital Asset Management and Waste/Recycling Programme
Review PKC Purchasing Policy in line with Scottish Legislative Single Use Plastics Ban coming into force in 2022
Work with the Resources Management Association (RMAS) to decarbonise sector
Establish a Stakeholder Advisory Group to review & develop the Waste & Circular Economy Action Plan

Priority Theme 5: Land use

Strategic context

Unlike the majority of the other activities addressed in this plan, the way we use our land both generates and sequesters (removes) carbon from the atmosphere. For example, CO_2 is released from when the soil is disturbed (304kt CO_2 in 2019). On the other hand, our growing forestry estate is capturing carbon and storing it (-367.1kt CO_2) this is referred to as carbon sequestration. Peatland also captures and stores carbon when in a pristine condition however, a large proportion is degraded, affected by extraction or draining. In its damaged condition, peatland releases carbon, but through restoration can provide multiple benefits to biodiversity, flood mitigation and carbon savings.

Table 1 CO2 Emissions of each sector of Land Use, Land Use Change and Forestry (BEIS, 2019)



Transforming how the land is managed and improving agricultural practices, tree planting, and peatland restoration can play a major and essential part in achieving net zero whilst also contributing to improved biodiversity, a reduction in flood risk and a range of other benefits. It is important to recognise that most of our land is in private ownership and operates on a commercial basis. In addition, the agriculture and forestry sectors are a major part of the Perth and Kinross economy, contributing to economic wealth and providing significant employment.

Indirectly how land is used also contributes to the scenic beauty of our landscape which is the basis of our tourism industry. This requires us to work with landowners to ensure the economic sustainability of our landward areas whilst maximising the potential to reduce emissions and sequestrate carbon. Doing this successfully will generate significant investment in our rural areas creating jobs and long-term sustainability.

Policy Drivers

The Scottish Government has set national targets for elements of the land use sector. These include targets for 20,000 ha of peatland to be restored annually, with a commitment of £250M over the next 10 years towards this. Increasing woodland expansion is another area of focus, with the target for annual creation increasing to at least 18,000 Ha from 2024. The December 2020 Scottish Government Climate Change update provides details of the Governmental Roadmap for these sectors.

At both a UK and Scottish Government level, there is a shifting emphasis in the way land is managed. The potential contribution the landward area can make towards renewable energy, particularly

solar and onshore wind is supported, as is increased hydro but to a lesser extent. The replacement of the EU based rural grant schemes is currently being considered. However, it is clear that they will have increased emphasis of environmental stewardship and the net zero agenda.

In recent years, the links between biodiversity and climate change have also been more fully recognised in Government priorities. Biodiversity is now recognised, like Climate Change, as a global emergency. Not only is the effect of climate change threatening biodiversity, enhancing biodiversity is part of the solution to reducing emissions and building resilience. The policy emphasis is changing from one of protecting biodiversity (or, as a minimum, no net detriment) to one of seeking net gains.

Reflecting the important contribution the landward sector can make to both climate change and biodiversity has led to significant funding announcements over the last year. These include increased funding for forestry, peatland restoration and biodiversity. Another area set to be announced in the near future is an overhaul of the agricultural grant schemes. Whilst the majority of these funding streams will go directly to the landowners, some will be available to Councils. The Council needs ensure there are pipeline projects to capitalise on funding streams and needs to review several policy areas to ensure they support private sector investment in our route to net zero.

Areas of Focus

Strengthening Planning: During the recent public engagement, feedback from the public was their perception that current policies are not enforced rigorously enough, which leads to tree and biodiversity loss. The Enforcement Charter will be reviewed to ensure appropriate priority is given to cases impacting on climate change and biodiversity. A monitoring exercise will be conducted in the summer of 2022 to assess the effectiveness of planning policies and planning conditions.

Climate change features prominently in the new National Planning Framework is progressing through parliament, which sets the framework for planning policy throughout Scotland and our own Local Development Plan (LDP). The Forest and Woodland Strategy supplementary guidance will also be reviewed to ensure it supports the increased target for the right type of tree planting in the right place. Research will be undertaken into the net impact of development, often referred to its “carbon footprint” and consider opportunity to work this the development industry to offset any negative impact, preferably on-site but where this is not possible offsite.

Landscape Scale Change: Delivering the potential of our landward area to reduce its impact and sequestrate increasing volumes of carbon will require collaboration between public agencies and land managers. The Council has been collaborating with Perth & Kinross Countryside Trust, NatureScot, the National Parks, Forestry Authority Scotland and various agricultural and land-owning interests to investigate the potential of a partnership project to work with land managers to facilitate the transformational change required. At present, the pilot project concentrates on North Perthshire. However, the successful delivery will require a Perth & Kinross-wide approach, as well as helping maximise land managers access to national funding streams.

Biodiversity: Building on the concept behind Scotland's first Biodiversity Village (St Madoes and Glencarse) there is emerging interest from around 20 towns, villages and neighbourhoods across the council area to achieve similar status. Through the Tayside Biodiversity Partnership, we will work to support them. We will also support the Perth City Leadership Forum to declare Perth as Scotland's Biodiversity Capital by taking a coordinated and partnership-based approach to the City. This offers the potential to attract investment by working with national agencies and businesses to create a Council wide network of biodiversity communities.

Greenspace and other Council Land:

The Council's many greenspaces and other Council controlled land provides a valuable way for us to demonstrate our commitment to lead by example. Transforming parks and greenspaces into multi-functional areas that provide play and recreational opportunities whilst enhancing biodiversity, providing flood attenuation and sequestrating carbon requires a co-ordinated approach and community consultation. To deliver this will require a phased programme (10 years) to address the key greenspaces across the Council area.

Redeveloping of the Westbank site in Perth is an important action to expand the nursery's ability to grow the necessary trees, shrubs, and pollinators to supply the stock for our greenspaces and to support community-based action.

Impact of Land Use related projects

The Council commissioned research from the James Hutton Institute in mid-2021 to look at the potential contribution, both positive and negative, of land use activities in our rural area. The most significant areas include grassland management, tree planning and peatland restoration as follows:

- annual emissions from degraded peatland are estimated annually to be 273 kt CO2e (for context total Domestic emissions are 266 kt CO2e). It will be extremely challenging to tackle all of these areas, but even just addressing the emissions from land already in designation areas will save 76.5 kt CO2e/yr.
- the additional sequestration potentially associated with the woodland creation targets in the Forest and Woodland Strategy will lead to an increased sequestration of approximately 13kt CO2e once mature. If significant landscape scale changes were to be implemented, this has the potential to be more than 200 kt CO2e.

Whilst the net impact of our landward sector is improving and currently in net positive (sequestering), we need to accelerate the pace of change to deliver on net zero at the earliest opportunity. Both forestry and peatland rehabilitation have long lead in times before the full scale of sequestration is achieved, so significant action is required in the next five years to realise significant savings by 2045.

It is hard to quantify the potential carbon saving to be gained through creating a network of biodiversity communities or transformation of our greenspaces, but any net impact will be positive. The positive

impact on biodiversity in the rural areas and in, and around, our urban areas is significant. Our greenspace are often the critical biodiversity corridors within largely built-up area and are a lifeline for biodiversity. In the landward sector, more sensitive agricultural practices, appropriate tree planting and peatland restoration have the potential to enhance the habitats of numerous protected and endanger species.

Key challenges and opportunities

Except for the operation of the planning system and improvements to land under Council control, the majority of the actions relate to land over which the Council has a varying degree of influence. The delivery of the Land Use objectives, therefore, will be largely only successful through effective partnership working. The role of the Council will be as a facilitator or supporter of these projects both from a staff and resources perspective.

It has already been noted that there are significant funding opportunities already announced and more details expected in the future. Most of the funding opportunities are the subject of applications and many are also competitive bids for funds which are likely to be oversubscribed. The ability of the Council and its partners to prepare robust applications, particularly for large scale strategic and innovative projects will be key to the successful transformation of our land management sector.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Key National Policy and Legislation	Explore options for 20 minute neighbourhoods, further protection of peatland, and future use of vacant and derelict land	Regional Land Use Frameworks developed		18,000ha of new woodlands created annually								
		Bioenergy Action Plan published							At least 250,000ha of peatland restored			
			At least 20,000ha of peatland restored annually (every year)									
Peatland Protection and Restoration	Identify opportunities for forestation and peatland restoration across Perth and Kinross											
	Identify measures to support private landowners in forestation and peatland restoration	Support the delivery of peatland restoration projects through delivery of Landscape Scale Project or Projects with partners										
	Develop a landscape scale pilot project in conjunction with partners											
Trees and Woodland	Review existing policies on trees including revising the Forest and Woodland Strategy	Support the implementation of the Forestry and Woodland Strategy										
	Investigate and develop Tree Strategy for our parks and maintained open spaces with native trees	Planting for increased tree cover										
	Develop landscape scale pilot project with partners (In conjunction with Perthshire Nature Connections Partnership)	Role in our delivery of landscape scale project										
Adapting our approach	Review existing policies on grounds maintenance and prepare strategy to enhance sustainability and biodiversity during site upgrades	Implement new greenspace maintenance										
	Develop strategy to ensure sub-fleet machinery are net zero compatible	Implement replacement program for net zero compliant machinery										
	Review current planning policy framework to identify potential improvements	Prepare a suite of enhanced policies to be incorporated in LDP 3										

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Key National Policy and Legislation	Explore options for 20 minute neighbourhoods, further protection of peatland, and future use of vacant and derelict land		Regional Land Use Frameworks developed	18,000ha of new woodlands created annually								
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Peatland Protection and Restoration	Identify opportunities for forestation and peatland restoration across Perth and Kinross											
	Identify measures to support private landowners in forestation and peatland restoration		Support the delivery of peatland restoration projects through delivery of Landscape Scale Project or Projects with partners									
	Develop a landscape scale pilot project in conjunction with partners											
Trees and Woodland	Review existing policies on trees including revising the Forest and Woodland Strategy		Support the implementation of the Forestry and Woodland Strategy									
	Investigate and develop Tree Strategy for our parks and maintained open spaces with native trees		Planting for increased tree cover									
	Develop landscape scale pilot project with partners (In conjunction with Perthshire Nature Connections Partnership)		Role in our delivery of landscape scale project									
Adapting our approach	Review existing policies on grounds maintenance and prepare strategy to enhance sustainability and biodiversity during site upgrades		Implement new greenspace maintenance									
	Develop strategy to ensure sub-fleet machinery are net zero compatible		Implement replacement program for net zero compliant machinery									
	Review current planning policy framework to identify potential improvements		Prepare a suite of enhanced policies to be incorporated in LDP 3									

Priority Theme 6: Climate resilience

Strategic context

Climate resilience relates to the ability to anticipate, prepare for, and respond to climate induced events – both acute events and longer-term trends. The impacts of climate change are already starting to be perceived across the council area, with 91% of surveyed residents indicating that they are already noticing climatic changes. In recent years, we have experienced increasing incidences of flash flooding in urban areas, as well as river flooding. Communities throughout Perth and Kinross including Perth, Comrie, Alyth, Aberfeldy, Almondbank, Kinross, Milnathort and Pitlochry have been affected. There have been landslips and closures of the rail line north and south of Perth due to flooding as well as increased scour on our bridges.

With climate change, it can be anticipated that there may be more chaotic and variable weather patterns, with the scale and frequency of partially dictated by how much future warming is limited over the coming two decades. Both the built and natural environment will be impacted.

Policy drivers

Under Section 44 of the Climate Change (Scotland) Act 2019 (previously 2009), the Council must, in exercising its functions, act in the way best calculated to deliver any statutory adaptation programme. This statutory programme is updated every 5 years and is currently the Scottish Climate Change Adaptation Programme 2 (SCCAP2) 2019-2024.

There are two other key pieces of legislation. The Civil Contingencies Act (2004) identifies how climate resilience plays a significant role in identifying risks and reducing the impacts to be better prepared and more resilient to emergencies. The Flood Risk Management (Scotland) Act 2009 places various duties on the Council, including the preparation of local flood risk management plans to target the areas of highest flood risk and ensure actions are locally targeted and delivered.

Climate resilience and adaption is mentioned in numerous other policies, strategies and legislation including:

- Scottish Planning Policy 2014
- Community Empowerment Act (2015)
- Planning etc. (Scotland) Act 2006 & 2019
- National Planning Framework 4 (2021)
- Building (Scotland) Regulations 2004
- Roads (Scotland) Act 1984
- Scottish Land Use Strategy 2016-2021
- Scottish Biodiversity Strategy
- Scottish Forestry Strategy
- Scotland's Economic Strategy
- Scottish Soil Framework
- Marine (Scotland) Act 2010
- Water-resilient places (2021)

Areas of focus

The focus areas for the Resilience theme are:

- ***Resilient organisations*:** Key actions include having an improved understanding of the risk, as well working to build organisational capacity and mainstream climate resilience into project development and delivery processes. Actions also include continued partnership support for the Tayside Local Resilience Partnership and helping businesses to prepare for, and build resilience to, climate change.

- ***Resilient and empowered communities*:** Actions associated with this area are about empowering individuals and communities to take action to build resilience. Continuing to support and develop community resilience forums and other groups to develop proactive measures can have a significant impact, as will promoting natural flood management practices with riparian landowners and communities. More widely, it is necessary to develop an awareness raising campaign promoting the necessary behavioural changes identified in the SCCAP 2.

- ***Resilient infrastructure:*** Actions focus on addressing several of the potential infrastructure vulnerabilities. These include undertaking bridge scour assessments and delivering the appropriate remedial works, as well as looking at rural road drainage. In our parks and open spaces, it will be necessary to develop green solutions to help manage the risks of flooding and erosion. More widely we need to examine how to maximise the planning and delivery of blue-green infrastructure in our towns and developments.

- ***Flood risk management:*** Approximately 10% of homes and businesses in Perth and Kinross are now considered to be vulnerable to flooding, and this is likely to increase with climate change. Any actions which focus on managing flood risk are very important to residents and businesses. Actions focus on delivering the Council's Flood Risk Management Plans which were published in 2016. A national public consultation on the second cycle of these Plans recently closed, and updated plans will be published by SEPA in December 2021 and by the Council in 2022. Complementary to this, it is important that the Planning System is used to its capacity to avoid an increase in flood risk.

- ***Resilient ecosystems:*** Linked with the flood risk management actions described above, is the proposal to develop an integrated catchment approach for the River Tay – this would look at several key areas: biodiversity enhancements, natural flood management, carbon sequestration and water quality enhancement. The Council similarly needs to continue its contribution and support to the delivery of Nature Rich Leven and other catchment management approaches. More widely, it is important to update the Local Biodiversity Action Plan to reflect necessary adaptation measures to for our native flora and fauna and work with partners to make Perth a biodiversity exemplar and climate resilient city.

Impact

The scale of the impact is hard to quantify due to the uncertainty around if, and when, climatic events will occur. In general, each £1 spent on resilience measures will generate between £2-£10 pounds in savings. The benefits of the actions include a reduced risk of disruption to infrastructure, improved economic and social resilience, improved flood risk management, healthier ecosystems, and improved water quality.

Key challenges and opportunities

One of the biggest challenges for resilience action is knowing when a state of resilience has been reached. This can make it hard to generate a shared vision and impetus for action although, as demonstrated by recent events, this is required. It is important to raise awareness among the public of the risks and required actions.

Improving resilience will require a behavioural shift from reactive to proactive measures by residents and businesses, as well as the Council. For example, the primary responsibility for avoiding or managing flood risk rests with land and property owners. While the Council plays an important proactive role in flood risk management, it cannot do this alone and needs residents and businesses to make themselves and their properties more resilient to reduce the impact of flooding.

Resilience is interlinked with climate mitigation – many of the actions to reduce emissions also improve resilience. Resilience needs to be wider than just climate change – if systems are unhealthy or at breaking point, a minor climate disturbance can cause serious damage.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Key National Policy and Legislation	**UK Climate Change Risk Assent (UKCCRA) 3 published**			**Scottish Climate Change Adaptation Programme (SCCAP) 3 Published**		**UK Climate Change Risk Assessment (UKCCRA) 4 published**			**SCCAP4 Published**		**UK Climate Change Risk Assessment (UKCCRA) 5 published**	
Resilient Organisations Actions	Undertake a strategic climate risk assessment for Perth and Kinross following publication of UKCCRA3	Build organisational capacity in adaptation and mainstream it into project development, delivery and asset review processes		Review organisation alignment with SCCAP 3		Review changes in the UK CCRA on climate risk in P&K			Review organisation alignment with SCCAP 4	Continue to embed climate resilience aligned with SCCAP 4		
	Continue to work with Tayside Local Resilience Partnership and explore potential of expanding remit to wider climate focus											
	Increase business membership in resilience groups	Develop the ability of organisations and businesses to prepare for and build resilience to climate change										
Resilient Infrastructure Actions	Develop and implement bridge scour protection programme											
	Develop and implement green solutions for protecting open space and core paths from flooding and erosion											
	Review Road Management policy and guidance	Develop and implement rural road drainage review and improvement programme										
	Explore the potential for green-blue infrastructure for Perth, working in strategic partnership with Scottish Water	Expansion of green-blue infrastructure across Perth and Kinross										
Resilient Ecosystems Actions	Undertake research review climate impact on local ecosystems and update LBAP as required	Accelerate progress on delivering the Local Biodiversity Action Plan 2016-2026	Develop and implement new LBAP									
	Working with partners to make Perth a biodiversity exemplar and climate resilient city											
	Explore the potential for an integrated catchment management approach for the River Tay catchment and continue supporting Nature Rich Leven	Support the delivery of catchment scale action										

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Resilient and Empowered Communities Actions	Support community groups and Communities Resilience Forums to address challenges to ensure communities adapt to climate change , whilst supporting them to develop proactive preventative measures.											
	Promote natural flood management and work with riparian landowners and communities on addressing climate change and implementing actions of new catchment management plans											
	Develop and build a public awareness campaign promoting the behavioural changes identified in the SCCAP2			Public engagement and support for the recommendations of SCCAP3					Public engagement and support for the recommendations of SCCAP4			
Flood Risk Management Actions	FRM Cycle 2: Implement Flood Protection Schemes& Undertake Flood Studies						FRM Cycle 3: Implement Flood Protection Schemes, Undertake Flood Studies & Review climate change impacts on existing flood protection schemes					
	Bodies of Water - Inspection, Assessment and Clearance & Repair Works											
	Strengthen policy and enforcement surrounding SUDS and Flood Risk			Reflect increase flood management requirements in LDP3		Use planning system to avoid an increase in flood risk						

Priority Theme 7: engagement and education

Strategic context

While elements of this area have been touched upon in the above six thematic areas, due to the need for clear and coordinated communication to drive behaviour change and support with staff, elected members, students, residents and businesses, a separate Engagement Plan has been developed.

Education has been highlighted as a theme because it is important to recognise that Climate Change will impact disproportionately on the younger members of our society, and it is our duty to minimise the impact by acting now whilst preparing our children and young people for the challenges facing their generation and future ones. It is important that we ensure that our young people are climate literate as well as recognising and nurturing their interest in climate change by recognising their right to a voice and ensure their views are acted upon.

Policy drivers

Under the duty placed on Councils by the UN Convention on Children's Rights, this requires that children and young people are involved in the decisions that affect their lives and that children's rights are always respected, protected and fulfilled by public authorities. Climate change is an issue that young people are particularly passionate about.

The main policy document around this is that Scotland's "Vision 2030+ Report". This provides a strategic plan and recommendations on how the Scottish Government will support Learning for Sustainability up to 2030. The main recommendations include: all learners should have an entitlement to Learning for Sustainability; every practitioner, school and education leader should demonstrate Learning for Sustainability in their practice; every school should have a "whole school approach" to Learning for Sustainability that is robust, demonstrable, evaluated and supported by leadership at all levels; and school buildings, grounds and policies should support Learning for Sustainability.

Impact

This is a high impact area; the UK's Commission on Climate Change has identified that 59% of necessary emissions reductions require some element of behavioural change to be achieved. This will be especially important in achieving our transport, buildings and waste ambitions.

Using schools as conduit for education can be especially powerful as often through what a child learns, it is possible to influence behaviour in their wider family.

Areas of focus

An Engagement Plan is under development as a means of mapping engagement and stakeholders across a wide spectrum – this will be maintained 'live' and aim to be as comprehensive as possible. The Plan maintains a data base of stakeholder groups and individuals sorted by interest area and level of influence.

The Plan, amongst other things, collates a list of projects/activities linked to Engagement. For example: -

- linking with the Corporate Events team to run 'pop-up' stalls at regular market type events to promote general climate change activity or specific action groups work;
- developing in-house climate change training materials for Council staff and elected members;

- developing climate change induction materials as part of the overall portfolio for new elected members;
- developing climate change briefing materials or community councils;
- linking with Community Planning Partnership to have climate change activity on the ongoing agenda;
- inputting into the development of the Climate Commission and engaging with residents and businesses as part of the Perth and Kinross Offer;
- developing engagement plans for young people;
- continuing to develop approaches for climate education in Learning for Sustainability;
- reviewing and revising school operations.

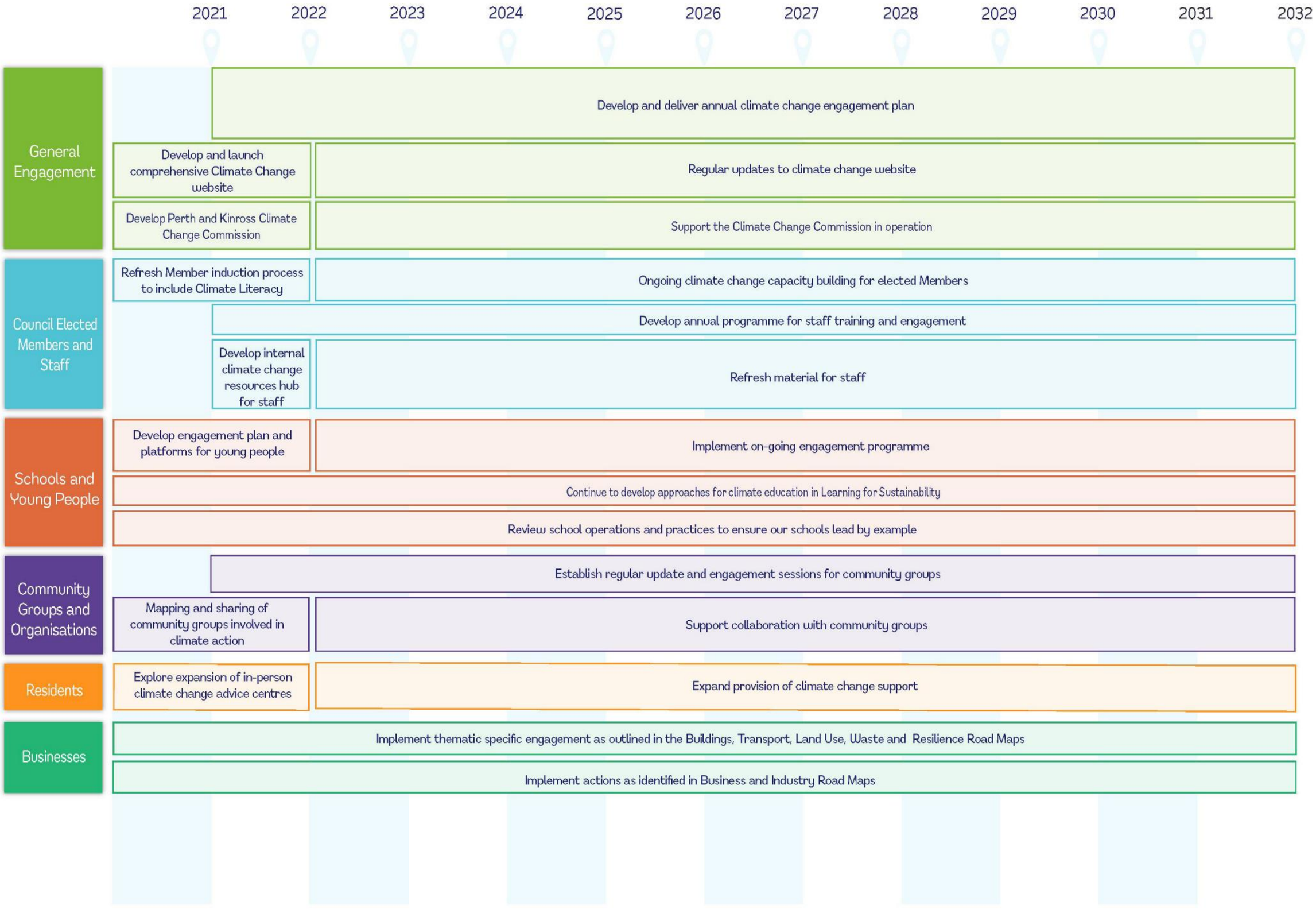
Development of a dedicated one-stop Climate Change web platform is a key element of stakeholder and public engagement. This is being assembled by an external web developer over the course of November and December 2021. This will map out and form links to climate change activity within the Council and in the wider community. It is the intention that this platform is running from early 2022.

Key challenges and opportunities

One of the key challenges will be ensuring that there is consistent and coordinated messaging across all the communication channels and engagement tools. If messaging is overwhelming or contradictory it can put people off making changes.

The Council already has many channels into our communities and businesses. It is necessary to capitalise on this existing engagement to convey climate messages to avoid multiple teams duplicating engagement.

The Council has historically not been effective at reaching and engaging with children and younger people on environmental and planning topics. It will require meaningful engagement that is children and young people designed and envisioned to build on current effective communications platforms and approaches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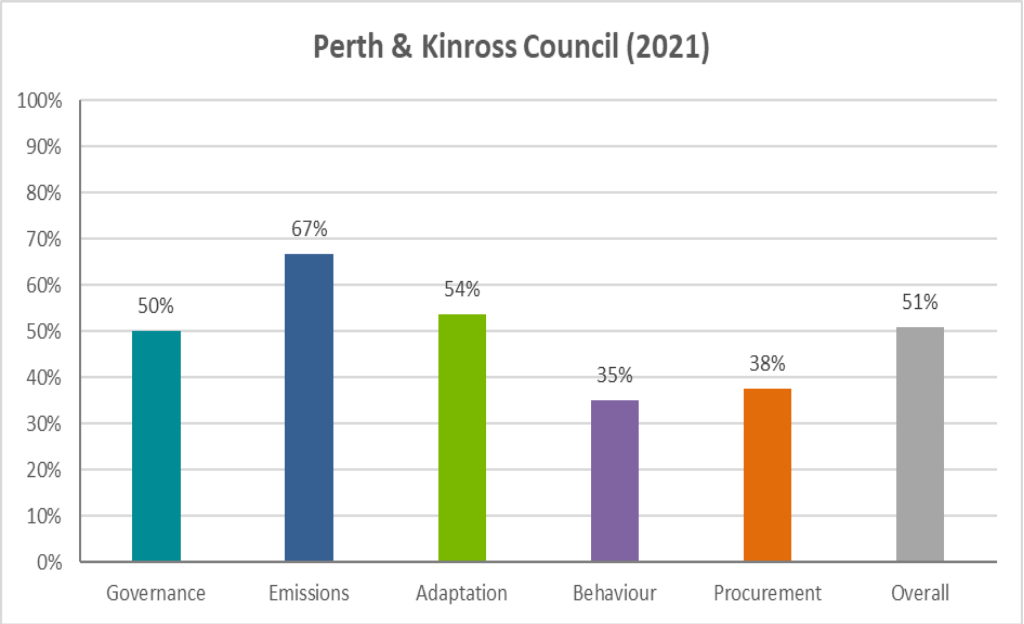
General Engagement
Develop and deliver annual climate change engagement plan
Develop and launch comprehensive Climate Change website
Regular updates to climate change website
Develop Perth and Kinross Climate Change Commission
Support the Climate Change Commission in operation
Council Elected Members and Staff
Refresh Member induction process to include Climate Literacy
Ongoing climate change capacity building for elected Members
Develop annual programme for staff training and engagement
Develop internal climate change resources hub for staff
Refresh material for staff
Schools and Young People
Develop engagement plan and platforms for young people
Implement on-going engagement programme
Continue to develop approaches for climate education in Learning for Sustainability
Review school operations and practices to ensure our schools lead by example
Community Groups and Organisations
Establish regular update and engagement sessions for community groups
Mapping and sharing of community groups involved in climate action
Support collaboration with community groups
Residents
Explore expansion of in-person climate change advice centres
Expand provision of climate change support
Businesses
Implement thematic specific engagement as outlined in the Buildings, Transport, Land Use, Waste and Resilience Road Maps
Implement actions as identified in Business and Industry Road Maps

Priority Theme 8: Governance

Governance is a crucial aspect to the successful delivery of the Climate Action Plan and the wider net zero agenda. The lessons learnt from several public and private sector organisations is that the successful climate action requires climate change to be embedded into all levels of organisational governance and embedded in key functions.

The Zero Waste Scotland Climate Change Assessment Tool (CCAT) assists public sector organisations to self-evaluate their capability and performance under the public sector duties of the Climate Change (Scotland) Act 2009. Based on a matrix system, climate change progress is scored across five different categories of work within the Council: Governance, Emissions, Adaptation, Behaviour and Procurement.

The CCAT completed for Perth & Kinross Council in July/August 2021 gave an overall score of 51%. This is a small improvement on the score of 47% when last measured in 2017/18. It also identified 39 prioritised actions across the 5 categories for the Council to take forward. An organisation that is climate change ready would typically score close to, or the maximum of, 100% overall.



The assessment shows the Council has demonstrated good progress towards managing and reducing carbon emissions associated with waste, energy and water consumption and fleet. Data collection systems are effective, allowing good tracking of the Council's carbon footprint. Governance and accountability for delivering climate change is improving, with climate change being seen as a corporate priority – demonstrated by the Council acknowledging the climate emergency in June 2019 and inclusion of climate change adaptation as a strategic risk on the Corporate Risk Register.

The overall scores for behaviour and procurement are low, with a need for improved internal climate change communication to raise awareness and engage and influence staff behaviour. This is also reflected in the absence of appointed climate change champions

within individual services and teams. Consideration of climate change impacts will be included in business and service planning and delivery, with priority given to developing carbon accounting and climate change risk assessment processes for those projects subject to financial appraisal.

Areas of focus

The focus areas for Governance are:

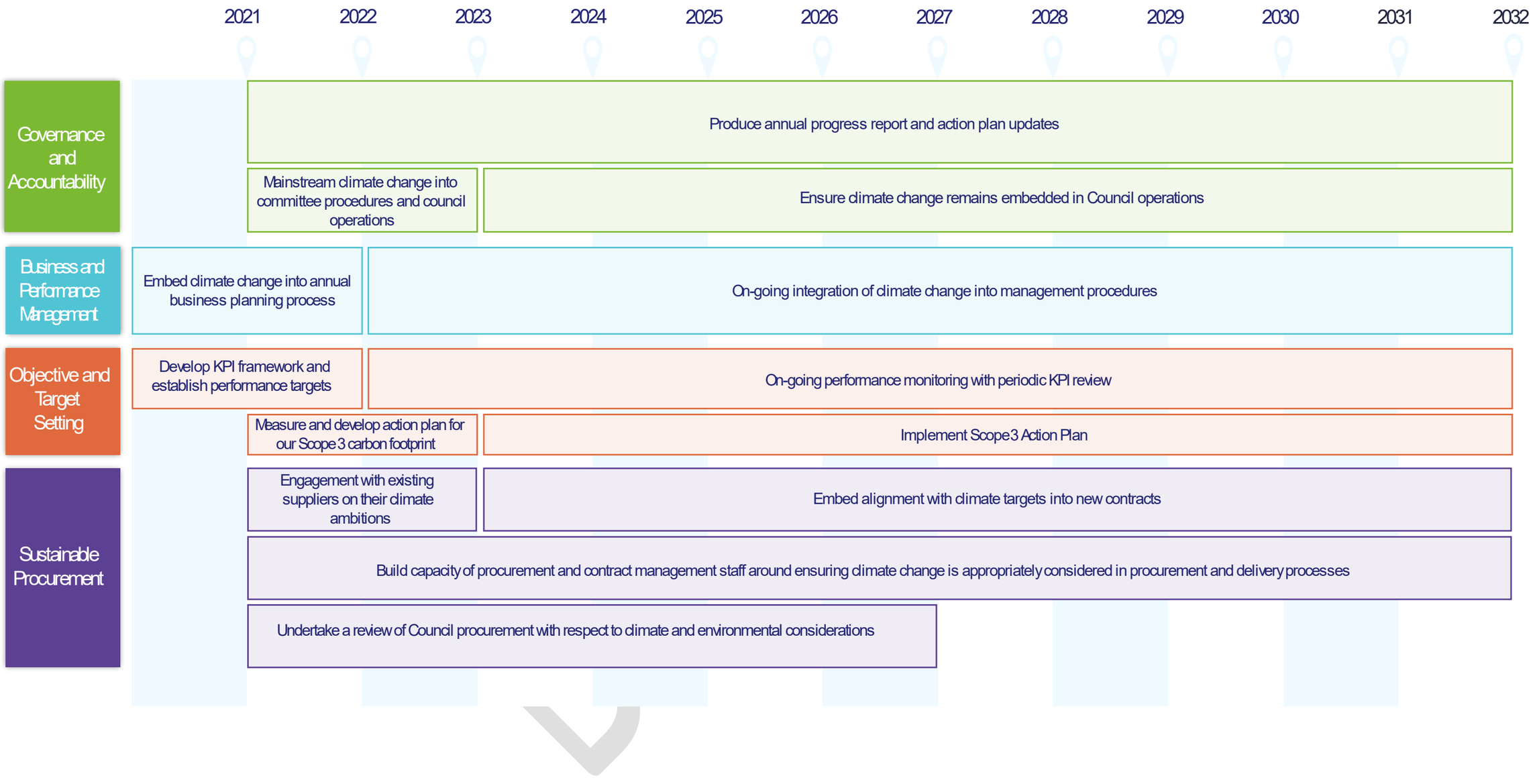
- ***Governance and accountability*:** While climate change is everyone's responsibility, it is necessary to establish formal climate governance arrangements. It is proposed a report and updated action plan will be prepared for Council in October each year. To ensure that progress on climate action is monitored more frequently, quarterly progress updates will also be provided to elected members

  To support elected members in decision making on climate change, the Committee reporting process will be reviewed to include this area more prominently.

- ***Business and performance management:*** In order to embed climate change into Council operations, this will be included into the annual BMIP process as a core area and that identified climate risks and associated actions are considered within existing corporate risk management processes. It is important that responsibility for meeting climate targets is devolved to the level where services are delivered, a first step is to undertake research for how other local authorities have developed and implemented devolving energy and carbon budgets and develop a feasibility report for a similar approach for the Council.

- ***Objective and target setting*:** The Council, together with the Perth and Kinross Climate Change Commission, will need to develop interim emissions targets for both the Council's operations and the wider local authority area. An important first action is to have an improved understanding of the full carbon footprint – including from other greenhouse gases and also from Scope 3 emissions. While we await a more enhanced approach to emission reporting, the proposed framework presented below provides a list of key Performance Indicators s which can be used to provide more responsive feedback. This will evolve over time.

- ***Sustainable Procurement*:** This needs to be considered across all Council procurement processes – both direct procurement and also through Tayside Contracts, commissioning arrangements and other Scottish Frameworks. This will help drive improved climate performance.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Governance and Accountability
Produce annual progress report and action plan updates
Mainstream climate change into committee procedures and council operations
Ensure climate change remains embedded in Council operations
Business and Performance Management
Embed climate change into annual business planning process
On-going integration of climate change into management procedures
Objective and Target Setting
Develop KPI framework and establish performance targets
On-going performance monitoring with periodic KPI review
Measure and develop action plan for our Scope 3 carbon footprint
Implement Scope 3 Action Plan
Sustainable Procurement
Engagement with existing suppliers on their climate ambitions
Embed alignment with climate targets into new contracts
Build capacity of procurement and contract management staff around ensuring climate change is appropriately considered in procurement and delivery processes
Undertake a review of Council procurement with respect to climate and environmental considerations

Resourcing the Strategy and Action Plan

The UK Climate Change Committee's Sixth Carbon Budget (December 2020) indicated that a feasible path for the UK to meet its commitments requires average annual reductions in UK emissions equal to the total emission reductions achieved between 2012 and 2019. The Committee suggest this is clearly feasible, provided effective policies are introduced across the economy without delay. It estimates net costs of meeting the budget to be equivalent to less than 1% of GDP and so, to that end, climate investment needs to be dramatically scaled up. By 2030, across Scotland there needs to be £5-6 billion investment annually, up more than 10 times current levels.

It is too early to provide a realistic estimate of the share of this estimated £5-6 billion cost across Perth and Kinross. It will, however, have significant implications for the use of the Council overall budgets, and in particular of key capital and revenue programmes around waste and the circular economy, transport, fleet, and the non-domestic and domestic estate. Furthermore, the council requires to consider its level of early commitment to the climate challenges within its future budget decision making and will be required to consider and, potentially, grow these commitments over the period to 2045.

The Investment Blueprint for Perth & Kinross Council states that Council capital expenditure will be aligned with the vision and plan for a net zero and climate resilient Perth and Kinross. It is important that our financial appraisal modelling fully embraces whole life costing and whilst the Council has made progress in this area (e.g. Passivhaus Schools Project), it needs to become embedded in our overall approach.

A number of the identified actions can be delivered within current resources either through adopting new ways of working or reprioritisation. However, significant resources will be required to deliver the net zero agenda. This will have to be addressed through the capital and revenue budget process in future years.

No single approach will provide the funding required to deliver a net zero Perth and Kinross and we will need to work with partners, communities and businesses to minimise the costs through efficient joint working and maximising the funding opportunities. This will include transforming the way we think and act, as reflected in the framework set out for the Perth and Kinross Offer. The list below highlights just a few of measures/opportunities which could lessen the funding challenges: -

- ***Joint working*:** many of the challenges are new but common across local government, both within Scotland but also internationally. It is important the Council works with others to develop both solutions and learning opportunities. We are already collaborating in several areas, working with a range of other authorities on the pilot Local Heat and Energy Efficiency Strategies and collaborating over the potential procurement of electric vehicles with Tayside authorities. Joint working opportunities need not be confined to the public sector with examples of successful public/private partnerships emerging.
- ***External funding:*** Both the UK and Scottish Governments have made significant funding commitments to support climate change initiatives. The challenge for the Council is to

ensure that we have our strategy in place and projects sufficiently advanced to be able to attract these funding opportunities as they become available. Many of the opportunities will be through a bidding process, often with tight deadlines for submission. Ensuring that we have projects in the pipeline to maximise grant funding requires to be prioritised.

- ***Charging structure:*** There is a need to look at our charging structure in part to ensure these reflect the carbon impact of the activity but also to divert activity away from polluting activities to carbon saving initiatives. – possibly a 'carrot and stick' approach. It is important, however, that our customers can see the benefits of the higher charges being directly invested in the improvement of services or contributing to the climate change agenda.
- ***Rent structure:*** We must also consider our rent structure, which at the moment does not fully recognise the running costs of our buildings. Funding energy saving measures for our Council house and commercial property stock is unlikely to be affordable without a combination of additional grant income and a review of rent structures. We must guard however, against increasing fuel poverty and ideally, any increased costs would be offset against gains, through lower heating costs.
- ***Market involvement:*** The Council will need to examine the opportunities to involve itself in a more commercially focussed approach. This includes, for example, consideration of:
    - the introduction of charges for electric vehicles (EV) and our role in the future provision of EV charging infrastructure, as Transport Scotland are withdrawing support from 2022. Decisions will be required about whether we continue to be a provider of new EV infrastructure or partner with a commercial supplier. This will also include taking decisions on the charging rationale such as seeking commercial or reduced rates of return or operating on a not-for-profit basis.
    - the Council's involvement in the energy and heat market. Such opportunities have the potential to act as an income stream to support the transition to a low carbon economy. These should focus on where we can provide the service more efficiently or fill gaps in the market. It is likely such initiatives will be delivered by an arms-length company or an Energy Service Company (ESCO).
- ***Communities*****:** Harnessing the capability and capacity of our communities is a key element of our strategy to support our residents and businesses make the required transformational change. Communities often have access to funding streams which are not available to the Council, and we must maximise these opportunities by working together. Through the Perth & Kinross Offer, we must enhance our support for communities and the third sector, maximising the opportunities to deliver transformational change as efficiently as possible.

Monitoring and reporting

Regular monitoring and reporting are important to ensure that progress remains on track. Provisional Key Performance Indicators (KPIs) have been proposed in **Table 2**. Both overarching and theme specific KPIs have been identified. These will be reported on to the Council annually and published on the Council's Climate Change Website, to provide transparency to the public. As our climate change work progresses, these KPIs will be adapted as required.

Table 2 Overview of Provisional KPIs

Climate Change Theme – Action areas	Existing or proposed indicators	Data source
Overarching KPIS		
High level KPIs	Perth and Kinross Area-wide CO2 emissions (kt CO2)	BEIS
	Perth and Kinross per Capita CO2 emissions (kt CO2)	BEIS
	Perth and Kinross Council Scope 1, 2 and 3 emissions (kt CO2e)	PKC Staff for annual PBCCR Report
	Carbon Disclosure Project (City Score)	CDP
	% of Climate Change Indicators showing positive change	PKC CC Team
	Climate change grant funding secured (£k)	PKC CC Team
Transport and Connectivity		
Increase active transport across Perth and Kinross	Modal split - % of journeys made by non-personal car methods	Scottish Household Survey and Transport Scotland

	% child journeys to school by walking/cycling	Transport Scotland
	% journeys to work by walking/cycling	Transport Scotland
	Total vehicle kms - split by Trunk roads and Local Roads	Transport Scotland
Accelerate the EV transition	Number of public EV charging points (by category)	PKC Transport Planning
	Proportion of personal vehicles registered as EV	DVLA and ChargePoint data
	% Council fleet vehicles that are electric or other zero direct carbon fuel technologies	PKC Fleet Management
	% Taxi/Private Hire vehicles licenced by PKC that are electric	PKC Civic Licensing
Improve public transport provision	% Residents satisfied with public transport	Scottish Household Survey
	% Modal share attributed to public transport	Transport Scotland
	Population served by Demand Responsive Transport Schemes	
Reduce vehicles in City and town centres	Number of passengers using Park and Ride services	PKC Public Trans
	Monitored air quality achieving annual mean concentration for Nitrogen dioxide (NO_2) and Particulate Matter (PM_{10})	© Crown copyright 2019 Air Quality in Scotland
Ensure resilient transport systems	Number of public road closures due to flooding or other climate change impacts	
Energy and Buildings		
Non-Domestic PKC Properties	Scope 1 and 2 Emissions from Council Estate (tonnes CO_2)	PKC Energy Management

	Energy intensity of Council Estate (kWh/m2)	PKC Energy Management
	Renewable energy generated (MWh)	PKC Energy Management (note also includes from Domestic Estate)
Non-Domestic Perth and Kinross properties	Perth and Kinross CO2 emissions estimates by sector: • Industry • Commercial • Public Sector	BEIS
	Average EPC of non-domestic rented sector	Energy Savings Trust
Domestic PKC Properties	% Council housing meeting the Energy Efficient Standard for social housing	Local Government Benchmarking Framework
	% Council housing EPC B and above	Housing Team
Domestic P&K Properties	Total domestic electricity and gas consumption (GWh) and average consumption by floor area (GWh/m2)	BEIS
	Percentage of households in fuel poverty	Scottish House Condition Survey
	Number of households provided with energy efficiency and/or low carbon heating advice	PKC Staff
	Total Domestic Emissions associated with Other Fuel sources (oil and kerosene)	BEIS
Business and Industry		
Data & Strategic targeting	Number of registered businesses by growth sector (and % SME): • **energy** (including renewables) sector	Growth sector statistics - gov.scot (www.gov.scot)

	• **sustainable tourism** (tourism related industries)	
	% of large businesses (250+ employees) with a set target for reducing carbon emissions	To be developed by B&I CC working group
Engagement & Empowerment	Number of businesses signed up to the 'Race to Zero' campaign or equivalent	To be developed by B&I CC working group
	Number of businesses supported through climate change initiatives	To be developed by B&I CC working group
Just transition and skills shortage	Share of Green Jobs in Perth and Kinross overall employment	To be developed by B&I CC working group
	Skills and training KPI – To be developed	To be developed by B&I CC working group
	Total turnover and employee numbers from Sustainable Tourism	Scottish Annual Business Statistics
Waste		
Ensure alignment with the Scottish Government Climate Change Route map	Total household waste generated (tonnes) and household waste generated per person (kg)	SEPA
	Total household waste landfilled as % of all household waste	SEPA
	Total household waste recycled/composted as % of all household waste	SEPA
Promoting a rapid transition to a Circular Economy	To be developed	To be developed by Waste Climate Change Working Group
Developing and delivering thematic action plans for the high carbon emissions materials:	Carbon impact of household waste per person (tonnes CO2e)	SEPA
	Whole Life Cycle Emissions for PKC Collected Waste	PKC Waste Services (ZWS Carbon Metric tool)

	% of households with food waste collection	PKC Waste Services
	% Residents satisfied with their local refuse collection service	Local Government Benchmarking Framework
Maximise value from waste by reducing Waste sent to landfill	% of households served by twin stream recycling	PKC Waste Services
	Dry Mixed Recycling contamination rate (%)	PKC Waste Services
Land Use		
Planning	% of Local and Major planning consents that contain approvals for biodiversity net gain	PKC Development Management
Landscape Scale Change	Area of new woodland (ha net)	Scottish Forestry
	Area of peatland restoration (ha net)	NatureScot/ Peatland Action
	Total LULUCF net emissions (incl. Forest land, Cropland, Grassland, Wetlands, Settlements and Harvested Wood Products)	BEIS
	% of Perth and Kinross land covered by woodland and subset that is % native woodland	Scottish Forestry
Biodiversity	% Tayside LBAP Actions and Scottish Pollinator Strategy Actions delivered or on-target	TBAP
Greenspace and other Council controlled areas	Number of trees planted	PKC Greenspace team
	Number of community volunteering hours in biodiversity related projects	PKC Greenspace team and TBAP

	Area grassland managed for biodiversity improvement objectives (ha)	PKC Greenspace team
	% of sites where pesticides are used	PKC Greenspace team
Engagement and education		
General	Views on Climate Change Webpage and Social Media channels	
Community Groups	Number of community groups active on climate change related projects	
Schools	% of schools with Eco School Status	PKC ECS Team
Businesses	Number of businesses engaged with on climate matters	
Resilience and Adaptation		
Resilient organisations	Annual Scotland Adapts Capability Framework score	PKC Staff
Resilient and empowered communities	Number of community groups engaged in proactive climate resilience work	PKC Staff
Resilient infrastructure	Number of Sustainable Urban Drainage Systems Introduced	PKC Staff
Flood risk management	Number of homes and businesses identified as at flood risk	PKC Staff/ NFRA
Governance		
Procurement	Scope 3 Emissions – Procured goods and services and capital works	PKC staff (significant work required for baselined)
Governance and accountability	% of Members and senior officers who have undertaken Climate Literacy training	PKC Staff
Business and performance management	% of staff who have climate change included in job description	PKC staff