

Introduction

The Challenge & Opportunity Of Climate Change

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Our planet's climate is changing and warming is accelerating.

Globally, 2010–2019 was the warmest decade since records began in 1850 and each decade since 1980 has been warmer than the preceding one.

It is unequivocal that emissions of greenhouse gases (GHG) by humans have warmed the atmosphere. The greenhouse effect occurs when GHGs in the atmosphere, like carbon dioxide and methane, trap some of the sun's heat. However, since the industrial revolution, human activities, such as the burning of fossil fuels for heat, electricity and transportation, have been changing the balance of the greenhouse effect. The increased levels of GHGs means more heat is being trapped, causing warming at an unprecedented rate.



If we continue emitting GHG emissions as if it's "business as usual", by the end of the 21st century Devon's average summer temperature could increase by over 5°C and average winter temperature by more than 3°C in comparison to the 1961-1990 average. Compared to the same period, average rainfall in winter could increase by 28% whereas summer rainfall could decrease by 44%. Relative sea level is very likely to rise by more than 43cm but less than 90cm.

The effects of these changes will significantly disrupt our current quality of life. The 2022 heatwave gives a glimpse of the effects that are likely to be experienced. This will be felt most acutely by disadvantaged and less affluent groups who have fewer resources to adapt.



However, addressing the climate and ecological emergency is also an opportunity to **create a fairer, healthier, more resilient and more prosperous society**. Some of the benefits include:

- * Improving public health and reducing pressures on the NHS
- * Creating new jobs and skills
- * Improving national energy security and increasing economic prosperity
- * Reducing fuel poverty
- * Reversing the decline of biodiversity
- * Reducing flood risk, improving water and air quality and creating accessible greenspace



The Devon Climate Emergency

In May 2019, a partnership formed to respond to the climate and ecological emergency in Devon (including Torbay and Plymouth). Its members represent public bodies, private sector interests, environmental organisations and academic institutions.

The Devon Climate Emergency (DCE) partners convened a Net-Zero Task Force of specialists to steer the creation the Devon Carbon Plan. Through this Plan, **DCE partners have agreed to work to reduce Devon's emissions to net-zero by 2050 at the latest, with an interim target of a 50% reduction by 2030 compared to 2010 levels.**

'Net-zero' emissions means that any remaining emissions of GHGs will be balanced by removals from the atmosphere.

Devon-based organisations are encouraged to join the partners in endorsing the Devon Climate Declaration and reduce their direct emissions to net-zero by 2030.



Devon's Greenhouse Gas Emissions

Devon's greenhouse gas emissions totalled 7.6 million tonnes of carbon dioxide equivalent (CO₂e) in 2019. This measure reflects the effect of a basket of six GHGs on climate change, converted into equivalent units of carbon dioxide to make their reporting more comparable. The most substantial emitters are Buildings (39%), On Road Transportation (30%) and Agriculture, Forestry and Other Land Use (17%) – see Figure 1. In total, across these sectors, in 2019, 72% of Devon's greenhouse gas (GHG) emissions related to energy use.

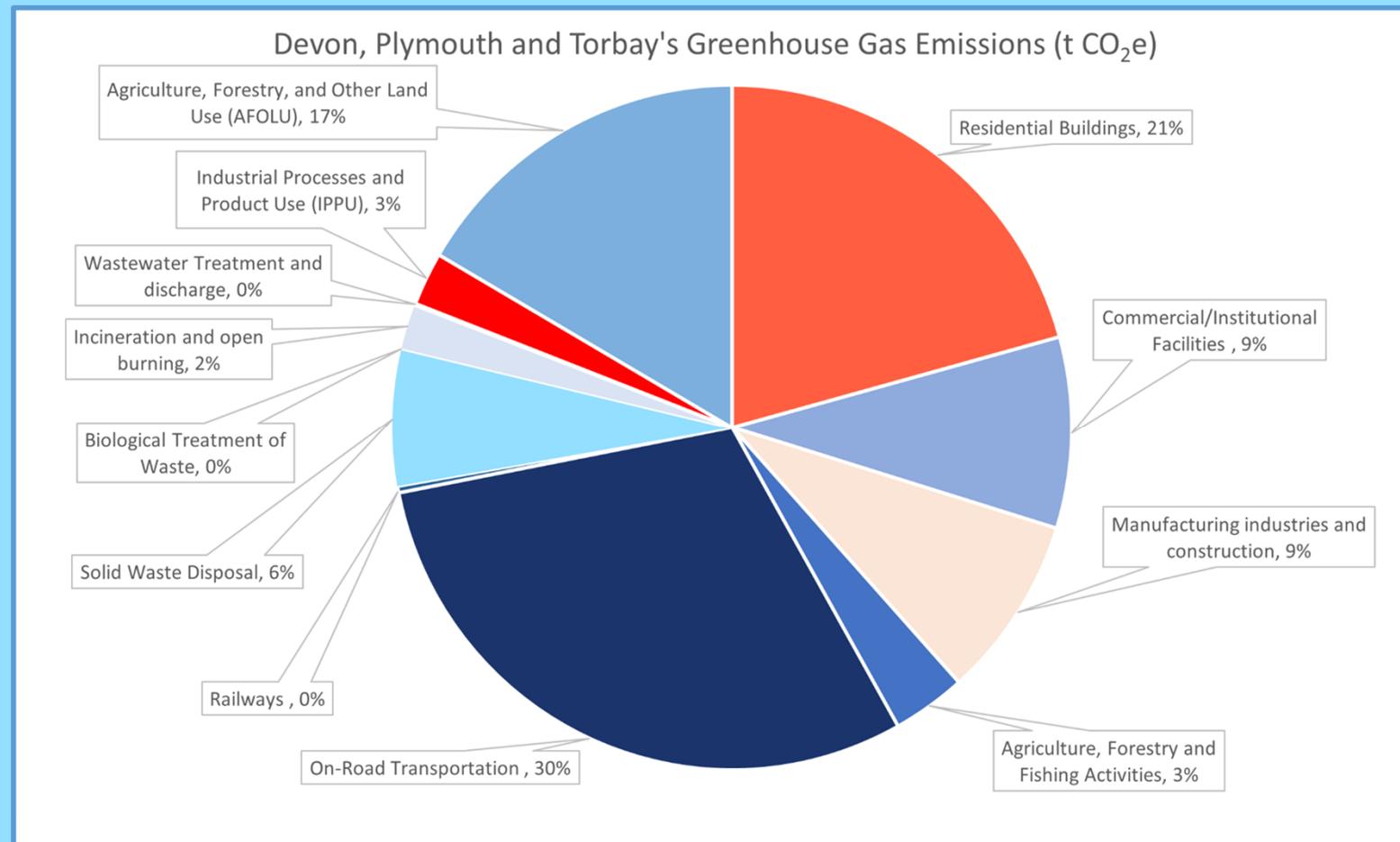


Figure 1 - Devon, Plymouth and Torbay's 2019 Greenhouse Gas Emissions by Sector

The Plan's Approach

Each themed section of this Plan (Economy & Resources; Energy Supply; Built Environment; Transport; Food, Land & Sea):



Describes what needs to happen in Devon to achieve net-zero – irrespective of current legislation or financial barriers

Introduces a set of goals which need to be realised to overcome barriers to achieving net-zero

Proposes strategic-level actions to achieve the goals, identified by specialists, the public and the members of the Devon Climate Assembly

Some of the Plan's actions will directly reduce emissions whereas others are steps to make future emissions reductions possible. Within this Quick Read, the strategic actions are interpreted for different audiences so that everyone can get involved – individuals, community groups, organisations and local policy makers.

Each action in this Plan **helps deliver these objectives.**



Fossil fuels phased out as an energy source



Minimise energy consumption



Engaged communities acting for resilience and a net-zero carbon Devon



Carbon captured and stored from the burning of fuels



Minimise fugitive greenhouse gas emissions



Resilient local economies with access to green finance



A circular use of resources



Maximise carbon storage in marine and terrestrial environments

Indicators to monitor progress towards achieving these are proposed at Section 12 of this Plan.



Chapter 6 Summary

Cross Cutting Themes

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Some themes are cross-cutting to all sections of the plan. These themes are:



Behaviour Change And Community Engagement.

We need to make changes to our behaviour, such as our energy use, eating habits, travel choices, waste disposal and more, in addition to using technological solutions, to reach net-zero. Devon's citizens and communities must be enabled and supported to collectively make these behaviours the new social norm.



Knowledge Sharing, Skills And Learning.

Relevant knowledge and skills need to be shared so everyone can switch to a net-zero lifestyle. This knowledge must be accessible to every individual and community.



Spatial Planning.

Changes to settlements must be planned so that services can be accessed using of active, shared and public transport. Additionally, the evolution of landscapes due to climate change must be managed in order to protect and enhance them.



Access To Finance And Resources.

The Plan's actions will require new finance – this could involve solutions that are already commercially viable; using crowd-sourced funds from communities; and attracting institutional investors. Citizens will also need access to finance.



Procurement & Commissioning.

Organisations must use their procurement power, by specifying environmentally and socially responsible goods and services, to accelerate their supply chains reaching net-zero.

Collaborating on these themes will ensure every individual feels involved with creating Devon's net-zero future and bring communities together with innovation and new economic and employment opportunities.

Actions

Everyone:

- * [Calculate your carbon footprint](#) and watch this [video](#) to understand where to make substantial, long-term changes to your behaviour
- * Participate in local climate action e.g. public consultations
- * Make climate change a part of everyday conversation



Actions:

Communities:

- * Use the [Impact Community Carbon Calculator](#) to understand your community's carbon footprint
- * Hold workshops in your community to develop detailed, local net-zero visions - consider inviting local artists, writers, and musicians
- * Create opportunities to share knowledge and skills within your community
- * Consider donating to, or investing in, crowd-funded net-zero projects
- * Contribute to encouraging behaviour changes to create new low carbon social norms



Actions:

Organisations:

- * Make procurement choices that contribute to reducing emissions, e.g. choosing local businesses to minimise transport emissions
- * Devon's business support services, schools, colleges, universities and community groups to provide equal opportunities for learning and skills sharing for all individuals and communities
- * Innovate through new business models, policy and pilots of initiatives to cut emissions



Actions:

Local Policy Makers:

- * Provide high quality, objective information and education for communities about the crisis nature of the climate emergency
- * Support communities to develop local net-zero visions, and to deliver their low-carbon transformation
- * Foster innovation in technologies, institutions, business models, policy design and behaviour to achieve net-zero
- * Development plans that demonstrate how they will shape places in ways that contribute to radical reductions in greenhouse gas emissions as a primary planning objective
- * Involve communities in an update to the landscape strategies and guidelines within Devon's Landscape Character Assessments to plan positively for achieving net-zero and the changes which climate change will bring



Chapter 7 Summary

Economy & Resources

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The linear economy – in which products are made, used, and thrown away – creates greenhouse gas (GHG) emissions during manufacturing, transportation to the customer and disposal. This behaviour is ecologically damaging. We need an economic model that enables us to thrive while not exceeding environmental limits.

To Do This, We Need To:



Avoid Waste And Create A Circular Economy...

...through redesigning products, to reduce their environmental impacts and improve their reusability and recyclability, purchasing less, repairing, sharing, reusing, buying second hand, and recycling.



Reduce Emissions From Unavoidable Biodegradable Waste And Wastewater Treatment.

This means significantly reducing avoidable food waste, preventing biodegradable wastes from entering landfill, and reducing emissions from treating wastewater.



Use The Purchasing Power Of Devon's Organisations...

...to benefit the environment and local communities. Higher value must be placed on the carbon and social impact of procurement decisions to reduce emissions and support the local economy. Locally embedded anchor institutions can influence other organisations with their actions.



Support Communities And Businesses To Transition To Net-Zero.

They should be supported as the net-zero transition causes sectors to shrink or grow, while new sectors emerge. Citizens should have access to the skills needed for a net-zero economy.

Completing these actions will: (i) save money through more efficient resource use; (ii) create new jobs to progress the net-zero carbon economy; (iii), and boost community cohesion via a collective effort to improve resource management.

Actions:

Everyone:

- * Help create a culture of 'enoughness' by reusing, sharing, swapping and repairing items. Buy second hand. Recycle them when they've reached the end of their life
- * Use recycling facilities and compost food waste
- * Choose banks with a strong ethical investment policy



Actions:

Communities:

- * Establish waste and resources projects, such as repair cafés, clothes swaps, libraries of things, and community fridges
- * Crowd-source funds for community-led initiatives



Actions:

Organisations:

- * Embed local social and environmental value further into tendering procedures, e.g. specify reclaimed and recycled materials, and support community-owned and local companies
- * Create a sustainability strategy to reduce, reuse, recycle and recover resources
- * If you're a food business, use the Courtauld Commitment free toolkit to reduce your food waste and emissions find opportunities for unavoidable wastes to be used as a resource by others



Actions:

Local Policy Makers:

- * Deliver targeted communication to empower people and businesses to adopt more sustainable consumption habits, prevent waste and shift to a culture of sharing, reusing and recycling
- * Improve the reuse facilities at Household Waste Recycling Centres
- * Align Devon's household waste collection services as far as viable
- * Consider reducing the frequency or volume of black bin collections
- * Collect a wider variety of separated materials for recycling, including collecting food waste separately
- * Work with government to incentivise the recycling of materials based on their carbon intensity as well as weight, and to improve commercial waste data
- * Enhance the capture of emissions from waste-water treatment
- * Support immature industries and new models that have the potential to contribute to delivering net-zero
- * Provide training and support on the transition to net-zero to schools, businesses and individuals
- * Continue to engage with government on the design of the Extended Producer Responsibility schemes
- * Support innovations in finance for net zero including regional banks, municipal bonds and crowd-funding



Chapter 8 Summary

Energy Supply

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In 2019, 72% of Devon's greenhouse gas (GHG) emissions related to energy use as a result of electricity generation (12%) and the direct burning of fossil fuel in buildings (24%), transport (30%), and manufacturing and construction (6%).

To Decarbonise Energy Use, We Need To:



Use Less Energy...

...to reduce the amount of new energy infrastructure required to meet net-zero. This can include energy-efficiency measures being implemented in as many buildings as possible, raising awareness of behaviours that will avoid wasting energy, and choosing transport options such as active travel, car sharing or public transport. These changes are discussed in the Built Environment and Transport sections of this Plan.



Transition To Renewables.

7% of the energy used in Devon comes from renewable energy generated within the area. This needs to rise to near 100% by 2050.



Increase Flexibility And Storage.

Maximising renewable resources affordably means creating smarter and more flexible generation and consumption, as well as increasing our ability to store energy. This is to account for the fact that some renewable technologies vary in their energy output (such as wind turbines being dependent on weather).



Develop Carbon Capture And Storage.

Carbon emitted from unavoidable use of fossil fuels needs to be captured and permanently stored using carbon capture and storage (CCS) technology, in order to prevent it from reaching the atmosphere.

This will: (i) provide opportunities for more communities to own and manage energy infrastructure and benefit financially; (ii) boost public health as a result of reduced air pollution and greater active travel; (iii) benefit the economy by increasing local investment and providing new innovation opportunities; and (iv) lower bills for consumers using smart energy systems.

Actions:

Everyone:

- * If possible, switch to a green renewable energy supplier
- * Find out if you're eligible for funding to cover up to 100% of costs to install renewable energy and whether renewables could reduce your bills



Actions:

Communities:

- * Participate in the development of the Devon Energy Plan
- * Support your local Community Energy Company to deliver renewable energy and energy efficiency projects, or establish a new one
- * Help identify and support locations for renewable energy initiatives in your Local Plans and Neighbourhood Plans



Actions:

Organisations:

- * Install renewable energy and energy storage
- * Offer roof space or land to your local community energy company for them to build a scheme and sell you the electricity
- * Switch to a green renewable energy supplier



Actions:

Local Policy Makers:

- * Develop an Energy Strategy for Devon to deploy renewable energy generation to meet future needs
- * Look to allocate locations for renewable and low-carbon energy initiatives in Local Plans and Neighbourhood Plans, ensuring community involvement
- * Include policies in development plans that give positive weight to renewable and low-carbon energy initiatives which have clear evidence of local community involvement and leadership
- * Provide support for communities wishing to develop their own energy infrastructure
- * Provide advice on choosing genuine renewable-energy tariffs
- * Test approaches to making the energy system smarter and more flexible
- * Remain engaged with government funding opportunities to pilot carbon capture and storage technology on industrial facilities in Devon

Work With Government To:

- * amend national planning legislation to make it more straightforward for onshore wind developments to get planning consent, especially those that are community owned
- * enable timely and cost-effective grid upgrades
- * ensure effective incentives are available for the use of renewable heat and waste heat from industrial and commercial facilities, including waste Energy Recovery Facilities
- * reintroduce support mechanisms for smaller-scale renewable electricity generation



Chapter 9 Summary

Built Environment

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Buildings and outdoor lighting produced 42% of Devon's greenhouse gas (GHG) emissions in 2019, due to burning fossil fuels for space & water heating and manufacturing processes (30%) and the consumption of grid-supplied electricity (12%).

To Reduce These Emissions, Several Changes Are Needed:



Retrofit Existing Houses.

We need a high take-up of energy-efficiency measures and low-carbon heating technologies in every one of our 581,000 homes. This retrofitting process must be affordable to everybody and independent and trusted advice needs to be available.



New Buildings Need To Be Net-Zero As Soon As Possible.

We need to be constructing new buildings using low-carbon materials and ensuring they won't need retrofitting in the future, which would be five times more expensive.



Retrofit Existing Commercial And Industrial Premises.

Just like our homes, the 53,000 non-domestic buildings in Devon need upgrading too.



Minimise Energy Use By Amenity Lighting.

Lighting in public areas needs to be efficient and used only when required without affecting people's safety or feelings of vulnerability.

Achieving these goals will generate new jobs to carry out necessary retrofits, protect vulnerable people from cold-related health conditions, and help those in poverty by minimising money spent on energy.

Actions:

Everyone:

- * [Check if you're eligible for free energy efficiency improvements for lower-income householders](#)
- * [Take a personalised Home Energy Check](#)
- * If you have not already done so, [turn the thermostat down](#)
- * [Insulate your home](#)
- * [Install LED lightbulbs](#)
- * [Wash at 30°C](#)
- * [Hang dry your clothes](#)
- * If you're in a position to do so, [install a low carbon heating system](#)
- * Ensure new building work is as energy efficient as you can afford



Actions:

Communities:

- * Work with landlords to retrofit community buildings
- * Raise awareness of the co-benefits of living in retrofitted homes and provide retrofitting advice to encourage people to undertake a retrofit
- * If you have retrofitted properties in your community, organise 'Open Homes' events to show the properties to other local people



Actions:

Organisations:

- * Retrofit your buildings, taking part in trials where these are available
- * Share your retrofitting experience with others
- * Ensure new building work is conducted to a net-zero standard
- * Reduce exterior and public lighting and convert to LED technology



Actions:

Local Policy Makers:

- * Develop projects to expand whole-house retrofit trials
- * Explore putting financial incentives and regulations in place to encourage retrofit (e.g. tax breaks & rebates, low-interest loans and green mortgages)
- * Collaborate with communities to establish a Devon-wide energy advice service
- * Enforce minimum energy efficiency standards
- * Work with central government and developers to accelerate the delivery of affordable new, net-zero homes



Chapter 10 Summary

Transport

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Transport accounts for 30% of Devon's greenhouse gas (GHG) emissions, the majority of which is from road transport (98%).

To Lower These Emissions, We Need To:



Reduce Need To Travel.

Avoiding the need to travel is the most effective way to minimise GHG emissions. This involves choosing to use local amenities and services, as well as carefully planning settlements so key services are easily accessible.



Shift To Sustainable Transport Options.

Active travel (for example, walking and cycling) should be prioritised, followed by public and shared vehicles, and then taxis before private vehicles. The sustainable options should be affordable, accessible and safe.



Use Technology To Reduce Emissions From Vehicles.

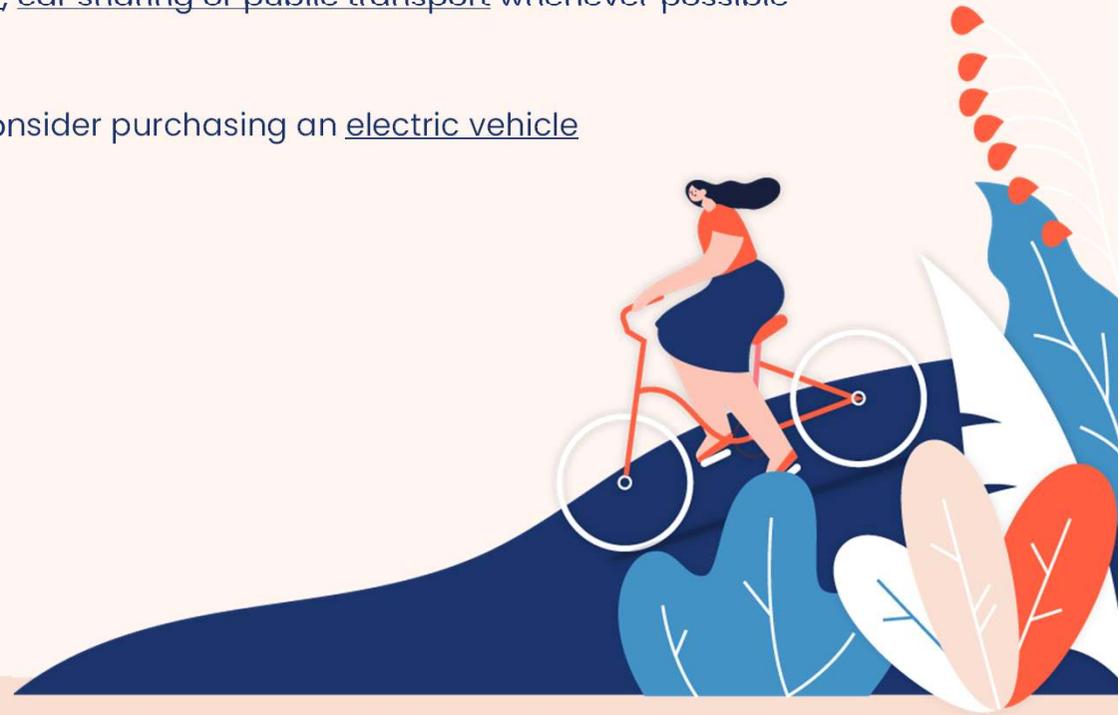
Motorised, personal transport will remain part of ensuring we can travel around Devon. Electric vehicles and other technologies such as biomethane, synthetic fuels, hydrogen and ammonia must be considered and adopted as appropriate.

A shift in transport behaviour will improve health via increased physical activity and enhanced air quality; ensure that vulnerable groups who rely on active travel and/or public transport have easier access to services; and reduce the economic costs of congestion, maintaining fossil-fuel supplies and pollution damage to the built environment.

Actions:

Everyone:

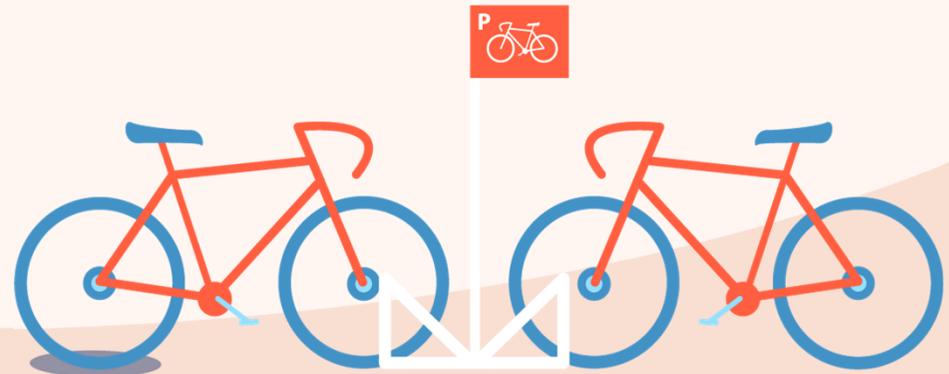
- * Switch to active travel, car sharing or public transport whenever possible
- * Reduce your flights
- * Drive efficiently
- * If you can afford to, consider purchasing an electric vehicle



Actions:

Communities:

- * Promote sustainable travel options for your members or for any events you run
- * Organise regular car-free or reduced car days
- * Explore providing a bike rental scheme or providing a parking bay for a Car Club vehicle
- * Engage local people about reallocating road space to active travel
- * Provide more cycle parking
- * Provide electric vehicle charging in community spaces



Actions:

Organisations:

- * Minimise travel by encouraging employees to work from home and flexibly where possible
- * Review and apply the Travel Devon Toolkit to relevant activities
- * Incentivise staff to get to work via active travel, car sharing and/or public transport
- * Where travel is necessary for business trips, use public transport, hire electric vehicles or switch to an electric fleet



Actions:

Local Policy Makers:

Note: This is a summary of the actions in the Transport section. See the Summary or Full version of the Plan for the complete list.

- * Continue the roll out of the Connecting Devon and Somerset programme
- * Continue to provide employment and community assets across Devon in order to minimise the need to travel
- * Provide up-to-date information and advice about reducing the need to travel and the most sustainable travel choices
- * Encourage more walking and cycling , including the development of Local Cycling and Walking Infrastructure Plans, designing roads and paths for sustainable modes of travel, and supporting community bike rental schemes and cycle confidence/maintenance training
- * Encourage the use of shared and public transport by promoting car-sharing technology and clubs, funding local bus routes, and ensuring fares are affordable
- * Investigate the use of Tourist Levies to fund sustainable travel, and congestion charging and changes to car park pricing to make car-use less attractive
- * Help to make electric vehicles (EVs) more commonplace by supporting EV charging strategies and infrastructure
- * Seize opportunities to trial low-carbon aviation
- * Make freight distribution more efficient by supporting rail transport and electric cargo bikes



Chapter 11 Summary

Food, Land & Sea

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As Devon is a county with two coastlines and a significant amount of farmland, it is crucial to consider food production, land use and the coast when addressing the climate emergency. The mix of emissions in this area is also distinct, as the main greenhouse gases are methane (from the digestion of food by livestock) and nitrous oxide (from manure and fertiliser) rather than carbon dioxide. These emissions accounted for 17% of Devon's greenhouse gas (GHG) emissions in 2019. A further 4% arises from machinery.

Three Main Changes Are Needed To Reduce Emissions In This Area:



Develop Demand For Nutritious And Sustainably-Produced Food.

We need to use our spending power to support local farmers, fisheries and horticulture that demonstrate best practice, and eat less red meat and dairy.



Reduce GHG Emissions And Improve Carbon Storage From Farming.

Practices that enhance soil carbon should be adopted, including regenerative practices, agroforestry and pasture-based livestock farming. Farm machinery should use renewable fuels, and emissions from manures, wastes and fertilisers must be reduced.



Maximise Carbon Storage In The Environment.

We need to protect and enhance existing habitats and ecosystems, and create new ones, which store carbon. This could include planting trees, restoring upland peatlands, and focusing on other habitats in Devon such as hedges; wetland habitats such as reedbeds and valley mires; wet Culm grasslands; soils; salt marshes and mudflats; and sea grass meadows and kelp beds.

By making these changes and enhancing the environment, we will help to address the ecological crisis, minimise flood risk, improve water quality, and encourage eco-tourism by contributing to Devon's beauty and appeal. On an individual level, eating nutritious and sustainably-produced food will improve health and wellbeing, as will having greater contact with nature.

Actions:

Everyone:

- * Aim to have a diet that follows the government's [Eatwell Guide](#), which requires us to eat less red meat and dairy
- * Where possible, choose to eat food that is sourced locally and sustainably-produced
- * Be mindful of your impact on the environment, and treat it with care when out and about, following the [Countryside Code](#)



Actions:

Communities:

- * Set up a local farmers market or community shop
- * Offer cooking skill share sessions to reconnect people with local seasonal food
- * Help people to eat a sustainable balanced diet at your events
- * Take action to protect and enhance local habitats and wildlife - get inspired with Wild About Devon



Actions:



Organisations:

- * Consider buying local through the [South West Food Hub](#)
- * Provide meals in your eateries aligned to the government's [Eatwell Guide](#)
- * Incentivise sustainable food-practices through procurement procedures



Actions:

Local Policy Makers:

- * **1** Support the Devon Food Partnership
- * Work with government to support new initiatives, including a food labelling system showing environmental impact, and preferential trade tariffs to food products that demonstrate minimum food standards
- * Work with government to design an effective Environmental Land Management Scheme that will ensure food production alongside carbon storage and other public goods
- * Look to set-up a Devon Farm Advice Service
- * Support the testing and adoption of low-carbon agricultural practices, and explore how this could be demonstrated on the County farms estate
- * Develop and implement a Local Nature Recovery Strategy, a Nature Recovery Network, and a Trees for Devon initiative
- * Develop a Land Use Framework
- * Develop an online investment platform to provide a match-making service between providers of environmental services and people wishing to purchase them
- * Work with government to introduce more marine protected areas, and to improve the effectiveness of environmental legislation overall
- * Develop and implement a South Devon Marine Natural Capital Plan, including piloting projects increasing carbon sequestration and support for smaller sustainable fisheries
- * Support the development of carbon storage accreditation schemes for a range of carbon-rich terrestrial, coastal and marine habitats
- * Allocate land for horticulture near settlements in development plans where suitable



Slide 44

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This isn't in the document - should this be removed?

Charlotte Brown, 05/09/2022

Chapter 12

Making The Plan A Reality

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Engagement And Ownership

The preparation of this Plan involved extensive collaboration between the Devon Climate Emergency partners, the Net-Zero Task Force, individuals and communities.

The ambition is that everyone in Devon knows about this Plan and is able to play an active role in its implementation. Every individual, organisation and community, including the Devon Climate Emergency partners, are encouraged to look at the actions and select those that they will help deliver.

The partners are [sharing their stories](#) on the website and would love to hear about yours. Your activity can be shared with the partnership and showcased on the website and the monthly newsletter via environmentalpolicy@devon.gov.uk, or find the Devon Climate Emergency on social media.

Devon-based organisations are encouraged to join the partners in [endorsing the Devon Climate Declaration](#) and to reduce their direct emissions to net-zero by 2030.



Funding & Investment

Achieving net-zero by 2050 at the latest will require a major nationwide investment programme, led by national government, but largely funded and delivered by private companies and individuals.

Costs for meeting net-zero in Devon have not been prepared, but may be in a future update to this Plan. The Climate Change Committee (CCC) says there needs to be a national investment of £50 billion annually by 2030. Once the reduced running costs of new technology is taken into account, the annualised net-cost of meeting net-zero is less than 1% of Gross Domestic Product (GDP) through to 2050. However, due to the opportunities to redirect resources away from fossil fuels imports to UK investment, GDP will be around 2% higher than it would have otherwise been by 2035.



Governance And Monitoring

The implementation of the programme of projects in this Plan and the emerging Devon, Cornwall and Isles of Scilly Climate Adaptation Plan will need governance arrangements to provide strategic oversight of their progress.

The Devon Climate Emergency Response Group will continue to oversee delivery, aided by new Theme Boards reflecting the themes of the sections of this Plan, and a new Devon Climate Change Forum. The Forum will provide impartial oversight, challenge and advice on behalf of the people of Devon, meeting once or twice each year. It will include community representation. Part of its role will be to scrutinise progress on an annual basis and make recommendations for the year ahead.

A set of indicators will be used to monitor progress towards achieving the plan's objectives. These indicators will be reviewed by the Response Group and published online.



Closing Remark

Now is the right time to set a target to achieve net-zero emissions and put in place a Plan to reach it. Climate change is too important and urgent a priority to do anything else. The broad-based involvement of businesses, the public sector, voluntary organisations and communities working together will help to create a resilient, net-zero carbon Devon where people and nature thrive.

