PLYMOUTH CLIMATE EMERGENCY ACTION PLAN 2019

Moving Towards Carbon Neutrality by 2030

Plan 1 of 11
16 December 2019

City Council Final Version
OFFICIAL

CLIMATE CHANGE

We are facing a climate emergency

On 18 March 2019, City of Plymouth councillors voted unanimously to declare a climate emergency, we committed to meeting the most significant challenge facing our city and our planet.

The enormity of what we must achieve cannot be understated and it will not be an easy journey but the reason we cannot fail is clear: we must leave a positive legacy for our children and our grandchildren. The City Council cannot solve climate change alone, we must all play our part. As others have shown, small actions to drive change can have global consequences.

This Climate Emergency Action Plan is the developing journey of the council and the city to be carbon neutral. This document is not just words on a page. This document seeks to drive change, inspire action and change mind-sets. It has already helped best practice to be shared within Plymouth and put pressure on the Government through lobbying for increased action to stabilise our climate.

The words and actions in the plan are not driving change, the commitment, resolve and sheer determination of the people who have contributed to its development and those that are already delivering against this agenda are making the difference. This document sets out actions and timeframes, but its biggest role is a call to action. As a City Council, we can't achieve this alone. But if all organisations and individuals in the city come together, then we have a real fighting chance of achieving something we can all be proud of.

Together, we will deliver more of the things we already do well faster, we will reduce emissions and identify new and innovative ways to reduce energy use and have cleaner energy, we will use our collective influence and power to ensure that government gives us more tools and resources to help stabilise our climate on our accelerated timeframe.

Even with a challenge of such enormity, we must still press forward with a sense of optimism, as that is when innovation and new thinking emerges. Plymouth has a long and proud history of being pioneering and achieving things people said were impossible. We can show people that a change of this magnitude can be achieved without leaving anyone behind and that each of us individually can make a difference.

Our journey is just beginning – we have much to learn with many of the answers we need still to be found. All I can ask is that you come on this journey with us. We do not want to look back at this time and think "I could have done something more, but I didn't".

Allow us to say to the children and young people of this city with honest hearts that we are doing all we can to protect their futures, this is about the health and wellbeing of all who live in the city.

Sue Dann
Cabinet Member for Environment and Street Scene, Plymouth City Council

Plymouth's Climate Emergency Action Plan

This document sets out how we intend to respond to the city-wide climate emergency. It explains why we need the Climate Emergency Action Plan and why the 2030 target is so imperative to tackling climate change. The Action Plan assesses Plymouth's current carbon emissions and outlines the challenges associated with this ambitious 2030 target. It sets this against the timescale of current national policy, recognising that not all the solutions to tackling climate change currently exist. For the purpose of the declaration of a climate emergency, and this Climate Emergency Action Plan, we are defining carbon neutrality as the point when we achieve a net zero carbon budget by getting as close to zero greenhouse gas emissions as possible by 2030, and then offsetting any residual emissions via other credible initiatives.

The Action Plan also lays down the emergency response strategy that the city will implement to respond to the climate emergency. It sets out the objectives we aim to reach, the types of actions that we will prioritise in the first phase of the response and the specific interventions that the city will deliver over the next two years. This Action Plan has been produced under the leadership of Plymouth City Council, but its successful delivery requires collective action from across the city, from organisations and individuals. A city-wide collaborative effort is required if we are going to meet this enormous challenge head on and leave a positive legacy for our city.

Collectively we can deliver more of the things we already do well, faster, to reduce emissions and identify new and innovate ways to do more. We also need to use our collective power to ensure that government gives us more tools and resources to help stabilise our climate on our accelerated timeframe.

Plymouth cannot solve global climate change, but we are committed and determined that we will fully play our part. We will think big and act quickly. We owe that much to future generations.

This Action Plan provides a framework for taking action, securing further funding and lobbying national government.

The need for declaring a climate emergency

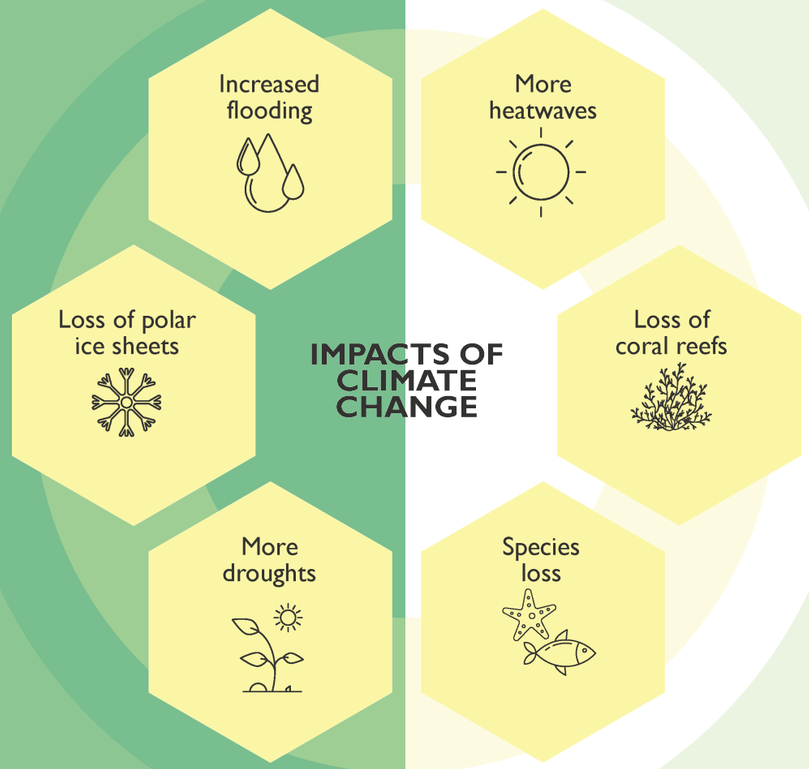
The earth is close to 1°C warmer than it was 100 years ago and without action this could increase to 3°C, which will be catastrophic for our society and the natural world. As a result of climate change people in Plymouth can expect to experience rising sea levels and heavier rain storms.

There is overwhelming evidence that the changes we are experiencing in our climate, predominantly in the form of global warming, are caused by human activity. Governments have agreed to take action to limit the global temperature rise to well below 2°C above pre-industrial levels and to pursue efforts to limit it even further to 1.5°C. The UK government has committed to reducing greenhouse gas emissions to zero by 2050.

It is our belief in Plymouth, and now also that of over 50% of other Local Authorities and organisations across the country, that current government commitments do not go far enough, nor quickly enough, to successfully address the existential issues for our society in relation to climate change. The emergency status is now needed to prompt rapid action at a local, national and international level.

We are also clear that we cannot do it alone. The climate emergency needs to be responded to at every level from the global, to the individual. In Plymouth we need to respond at a city-wide level and as such organisations and individuals from across the city need to come together to find solutions and ensure substantial change happens quickly. This is the ethos we are embedding within the suite of actions set out in this Action Plan.

It is also embedded in Plymouth City Council's Corporate Carbon Reduction Plan which will drive change within the City Council and it is hoped it will be adopted by organisations across the city as they develop their own plans for how they will reduce their own emissions.



Why carbon neutral by 2030?

The latest report by the Intergovernmental Panel on Climate Change is very clear that limiting global warming to 1.5°C by 2030 is necessary to prevent significant global worsening of floods, drought and extreme heat. The report also makes it clear that urgent and unprecedented action needs to be taken in order to meet this target.

Cities have an opportunity to lead the de-carbonisation agenda, providing local vision and delivery. As such, we need to have a target that reflects what the science tells us.

A target that did not reflect the science and the need for urgent action would fail to acknowledge both the responsibility and the capability that the city has to tackle climate change. The scale of the challenge is huge, requiring technological changes, policy changes and changes in how we live.

We see this Action Plan as a dynamic, living document that will be updated and reviewed annually. That is why it is Plan No.1 of 11 we will produce over the course of the period that we have declared as a climate emergency. It will be used to instigate action with partners and stakeholders coming together to do more, helping to inspire and give confidence that we can all respond to the imposing threat of climate change. Ultimately, we want this Action Plan to help facilitate a city-wide conversation, inspire rapid local action and create bottom up pressure on government so that we can reach our 2030 ambition.

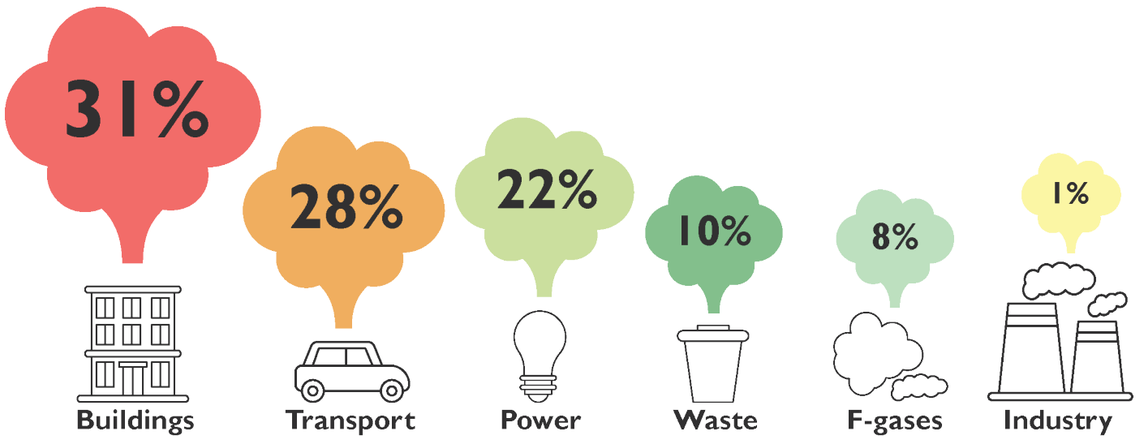
The city's current annual emissions

To understand the city's current emissions, the City Council commissioned the Centre for Energy and Environment at Exeter University to provide forecasts to support our 2030 net zero carbon target.

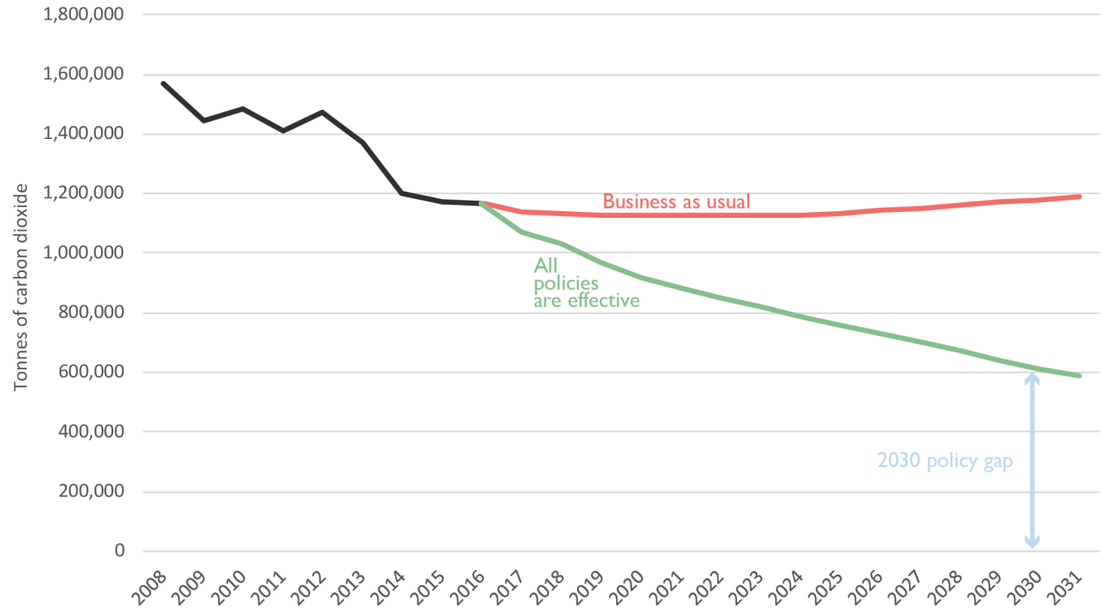
The diagram below illustrates the breakdown of the city's greenhouse gas emissions. Buildings and transport make up nearly 60% of all emissions and are the two sectors which require the greatest change and input at a local level.

Emissions from the power sector are mostly determined by policy at a national level, for example the closure of coal fired power stations and the construction of offshore wind farms. Waste contributes 10% of emissions, whilst F-gases, including emissions from industrial refrigeration and electrical switchgear, are at 8%.

Emissions of 1% from industry only account for industrial processes that release emissions, such as asphalt or concrete production. The emissions that arise from manufacturing, for example, are counted within the power or buildings figures.



Trajectory of Plymouth's emissions forecast



The diagram above shows the trajectory of Plymouth's emissions forecast to 2030 for two different scenarios:

Business as usual charts emissions if no national policies were implemented between now and 2030, with emissions beginning to rise steadily as population grows.

All policies are effective charts emissions if all current government policies and aspirations are successfully implemented.

The 2030 policy gap the remaining annual emissions of greenhouse gases that still need removing if all current policies and government aspirations are successful.

For Plymouth to achieve its 2030 target we need to act three times faster than envisaged by the current government policies.

The challenges

There are numerous challenges associated with the ambitious 2030 target.

Even in the best case of national policies being implemented successfully, there is still a huge gap to reach the net zero target by 2030. Moreover, national policy is aligned to a target of achieving net zero carbon emissions by 2050 and for Plymouth to achieve its 2030 target we need to act three times faster than envisaged by the current government policies.

Delivering ahead of national policy is not an easy task, but it is not impossible. As an example, some technologies that will have an impact by the 2050 target are unlikely to be viable by 2030, but with collective pressure we could encourage research and development to be accelerated. Similarly, current powers held by organisations across Plymouth are not yet sufficient to enforce the necessary actions across all sectors to meet the 2030 target, so we need to push for changes.

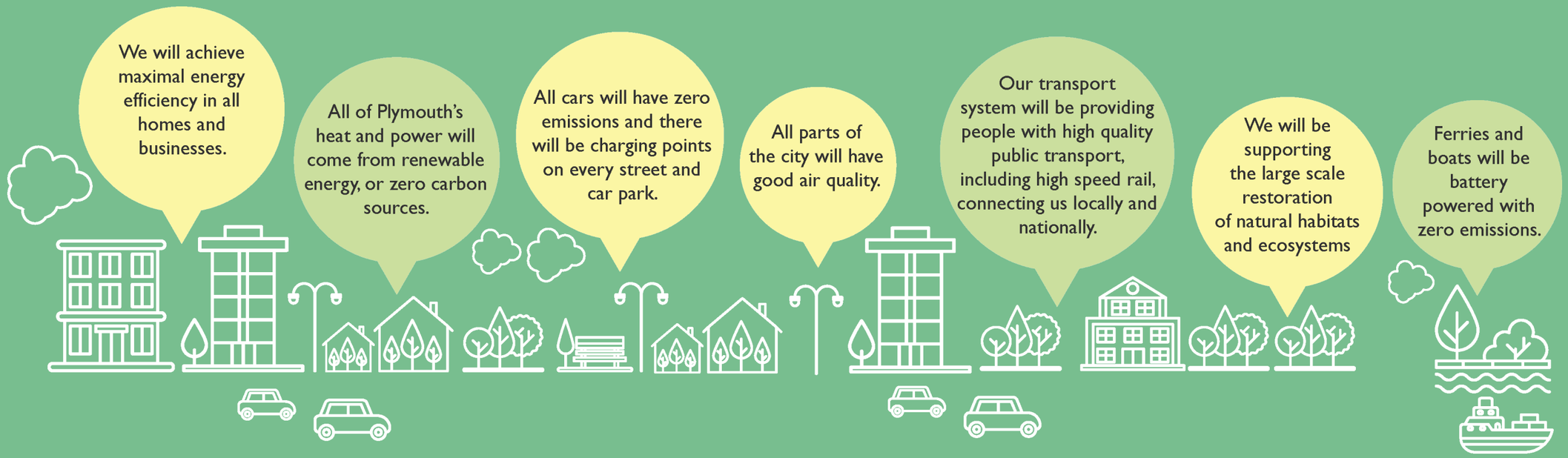
Resources required and costs

We want our city to lead the way in transforming how cities function in the future and we fully appreciate the scale of the challenge. It is also recognised that we need to start delivering city-wide action immediately, even though we do not yet have all the answers. This Action Plan provides a framework for engagement, for taking action, securing further funding and lobbying national government.

At this stage it is not possible to detail the full costs of Plymouth becoming carbon neutral by 2030. Some high level work has been completed on costs by Exeter University, which suggests that reaching carbon neutrality in Plymouth by 2030 would cost 5.8% of the city's GDP. This equates to approximately £442m, or £1,625 per household. However, the cost of not taking action to tackle climate change far outweighs the cost of taking action now. This is because the impact upon people, buildings and infrastructure in Plymouth as a result of unchecked climate change will be far worse – in both economic terms but also social and environmental terms. Doing nothing, or continuing as we have as a society is therefore no longer an option.

Recognising that additional resource is required to tackle the climate emergency, the City Council is committing revenue and capital budget to support the delivery of the outcomes and actions identified in both this Climate Emergency Action Plan and its own Corporate Carbon Reduction Plan. Other organisations across the City are also committing resources to tackle their own emissions and contribute to the city-wide programme of change. We will also need to maximise funding from other sources – including developers and government.

What does a carbon neutral city look like?



CLIMATE CHANGE

Emergency response strategy

This climate emergency response needs to deliver three key objectives:

- Facilitate a city-wide conversation
- Inspire rapid local action
- Create bottom up pressure on government

To do this we need to bring together the activities happening across the city that are helping to reduce carbon emissions. We also need to be able to respond quickly to opportunities and technical advancements. The Action Plan is therefore a dynamic document that will be updated annually, recording the actions being undertaken and those planned, so that others can see opportunities for collaboration and making similar changes themselves. We have therefore committed to producing an Action Plan every year through to 2030 so that everyone can see what we have done and the progress we are all making by working more collaboratively together.

In responding to a climate emergency we must be mindful that some of the solutions to becoming carbon neutral by 2030 are yet to be invented. So too will the context in which we are responding change as new policy approaches, new funding allocations and wider societal behaviours begin to change. As such the approach to tackling the climate change is structured as three interrelated phases between now and 2030, as detailed in the following page.

This first Action Plan focuses on delivering the Emergency response phase. This stage, from 2019-2021, focuses on implementing actions that will rapidly and credibly reduce carbon emissions as well as driving changes needed to rapidly increase the rate at which we reduce our carbon emissions, and ultimately reach carbon neutrality. This provides a credible response to the climate emergency and avoids spending time preparing longer term plans which may become out-dated quickly in a rapidly changing environment.

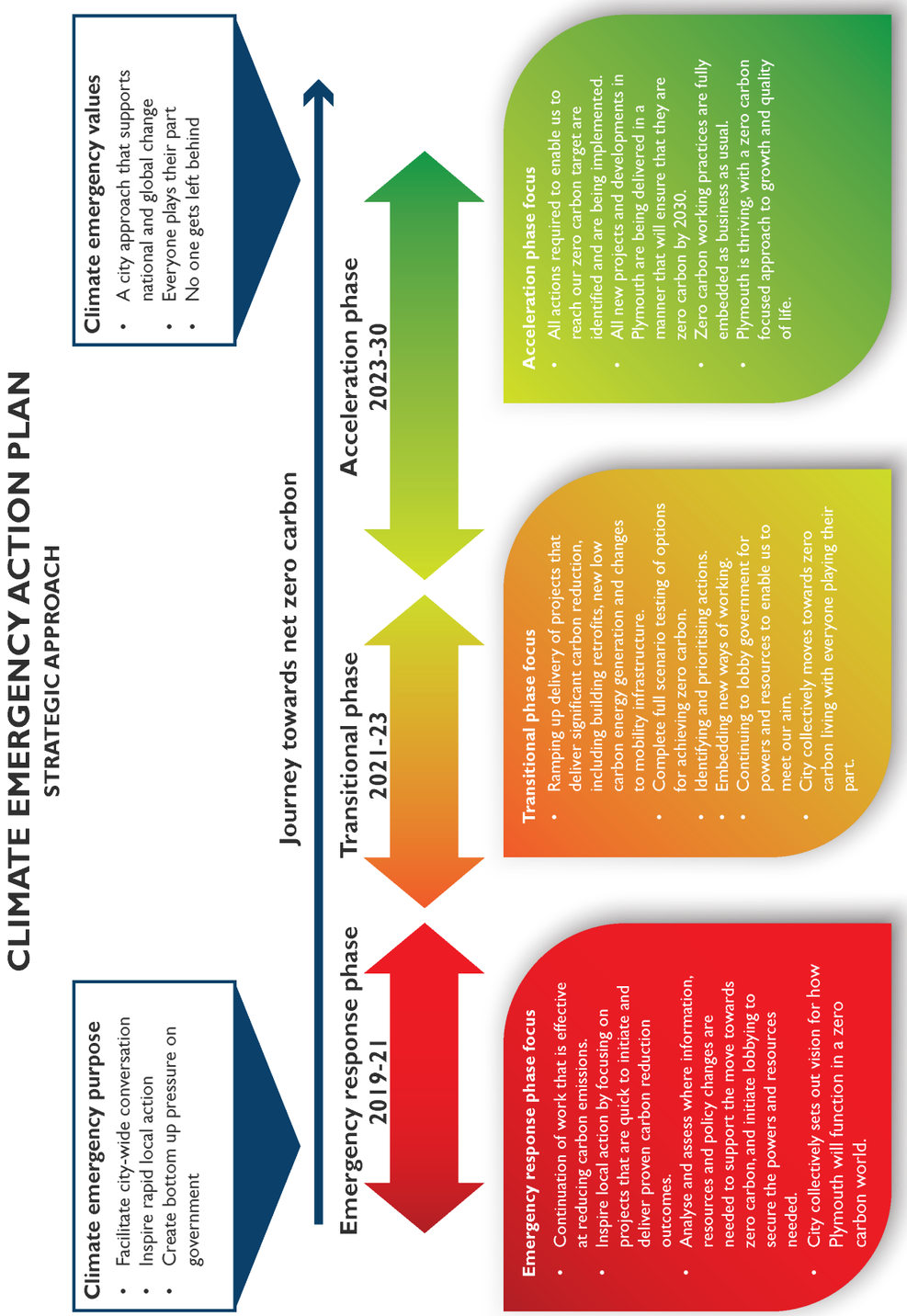
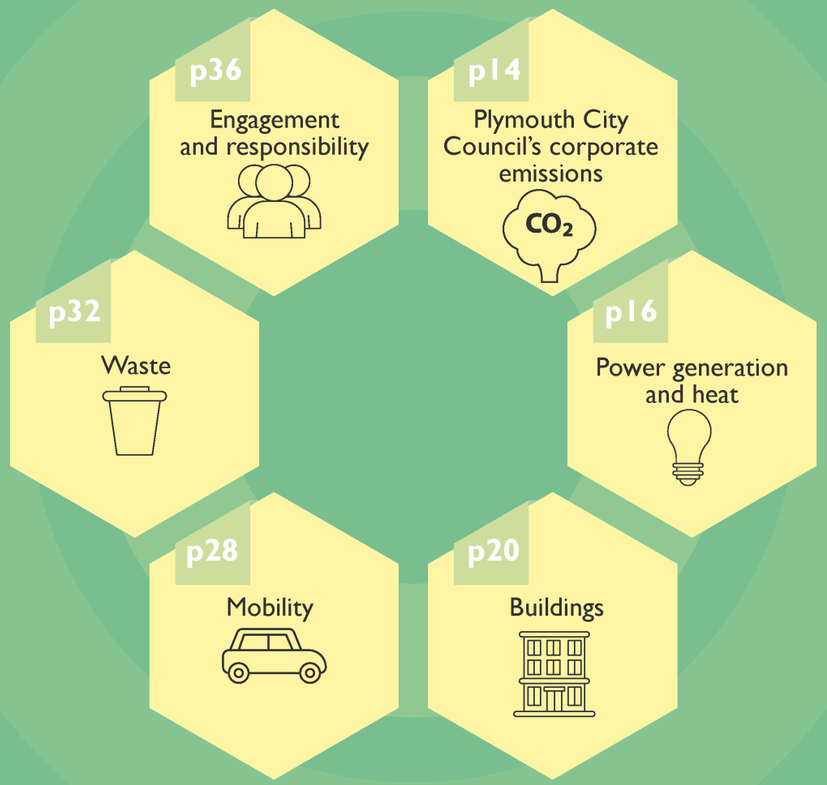


Image © Clean Earth Energy

Focus of the Climate Emergency Action Plan



The following sections provide an overview of actions that will be taken in Plymouth to tackle the climate emergency. The focus is upon those sectors that are responsible for the majority of emissions, the importance of engaging people and organisations in taking action, and highlighting the role of leading by example. The actions are grouped according to whether they are:

1. Immediate Actions that have received the required approvals and commitment to go ahead, or can be rapidly mobilised.

2. Requiring assessment for practicality, impact and cost, where further thought and research is required before deciding whether they will be implemented. There are many potential solutions that can feed into tackling the climate emergency, but we need to ensure the actions we take will have significant impact.

3. Requiring resources, new powers and/or change at a national level, as they sit outside of the direct control of organisations within Plymouth. As such, we may need to lobby government, or other organisations to implement these.

CLIMATE CHANGE

The City Council's corporate emissions

The City Council recognises that our response to the climate emergency must involve the rapid reduction of our own corporate emissions. We want to lead by example in our efforts to reach carbon neutrality by 2030. As such, we have developed a Corporate Carbon Reduction Plan to sit alongside this city-wide Climate Emergency Action Plan.

As an organisation, Plymouth City Council's emissions account for approximately 1% of the city's overall greenhouse gas emissions. Whilst the Council's emissions have been reducing year-on-year, the pledge to make Plymouth carbon neutral by 2030 has accelerated the work to do more, more quickly to reduce the Council's own emissions. The Corporate Carbon Reduction Plan sets out actions that will be taken focusing upon the activities that are under the direct influence of Plymouth City Council as part of our business such as buildings and fleet. The plan also outlines actions that relate to policies, governance and behavioural changes that contribute to the City Council's carbon emissions that need to be addressed.

City Council's Corporate Carbon Reduction Plan

The City Council's Corporate Carbon Reduction Plan describes the greenhouse gas emissions and significant energy uses within Plymouth City Council's estate, including:

- All City Council buildings used to deliver the Council function.
- Vehicles and transport.
- Roads and street furniture, including lighting and traffic lights.
- Staff and Councillor travel.
- Waste that is generated by the City Council.
- Communal areas owned by City Council.

And the document also outlines changes that will take place within Plymouth City Council covering:

- Governance.
- Behaviours.
- Engagement.
- Finance, including strategic investment policy.

Plymouth City Council is developing a district heating and cooling system utilising low carbon heat pump technology.

PV SOLAR PANELS

Plymouth City Council is installing PV solar panels with a total capacity of around 600kWp on roofs at the following locations:

- Ballard House
- Materials Recovery Facility at Chelson Meadow
- Roofs at Prince Rock depot
- Expanding the existing roof top PV at The Box, Plymouth City Museum and Art Gallery

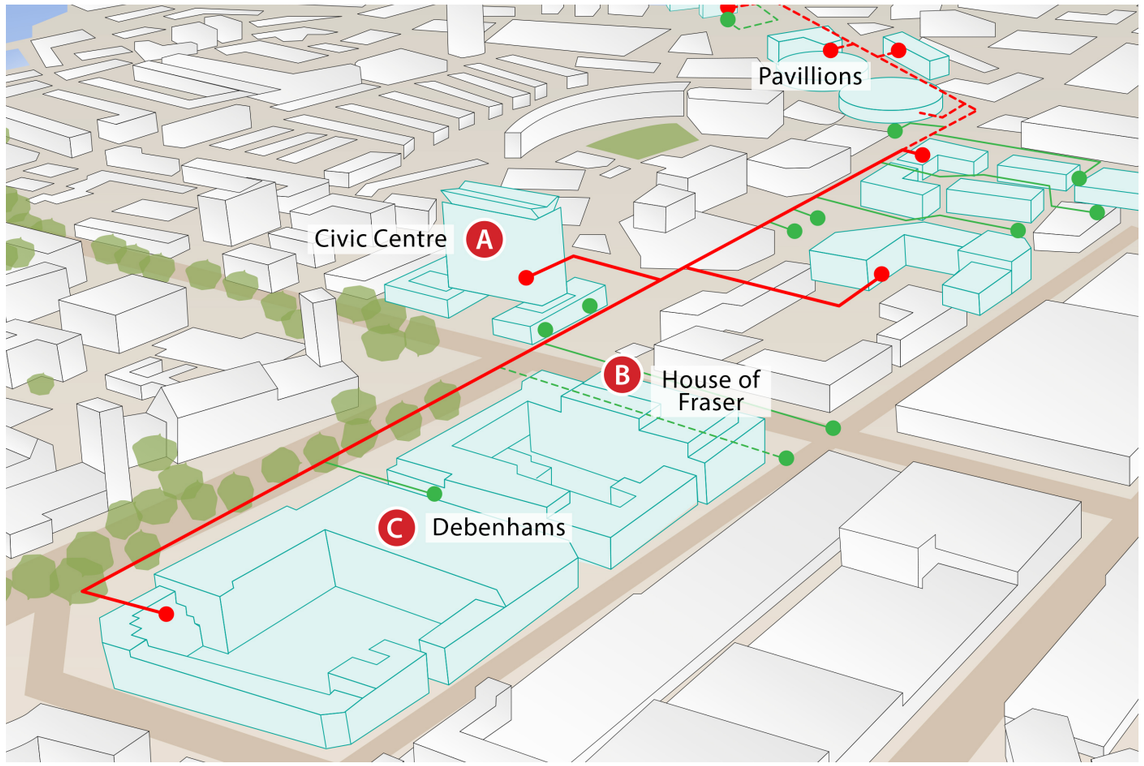
The new solar PV installations will contribute to bringing down the Council's electricity based carbon emissions and increase the amount of renewable energy in Plymouth. These projects will have minimum impact on the landscape of Plymouth as they will be installed on existing rooftops.

Image © Plymouth Energy Community

Power and heat

Carbon emissions resulting from electricity consumption in the city have reduced significantly since 2005. This has been largely changed at a national level due to an increase in the contribution of new renewable energy projects that make up the energy mix.

The production of power is largely outside the control of organisations within city, with the majority of the city's power coming from outside Plymouth. Nevertheless there are opportunities to generate low and zero carbon power and heat within the city. Both the marine environment and southern location of Plymouth bring a wealth of opportunities for renewable energy. And our city receives some of the highest levels of solar energy in the UK, enabling solar installations to form part of the future solution for Plymouth.



DISTRICT HEATING

The City Council has recently drilled bore holes in the city centre to assess the viability for a low carbon heat network. By linking buildings using heat pipes, both heating and cooling can be provided in a more efficient way and a range of heat sources can be utilised, including combined heat and power, renewable sources and waste heat.

Action plan for power and heat

Immediate actions

- Install renewable ground source heat solutions to support the low carbon regeneration of the city centre and Millbay.
- Work with stakeholders to continue expansion of district energy networks to supply low carbon heat and cooling in suitable areas across the city.
- Work with partners to increase the roll out of heat pumps across the city, and explore innovative lease models that combined solar/heat pump technology.
- Review how the integration of new technology and innovative public purchasing arrangements can help to bring forward new community owned solar farms.
- Work with stakeholders to identify land and roof space for new renewable energy installations with a focus on community owned solutions.
- Promote through the Plymouth and South West Devon Supplementary Planning Document that all new buildings be connected to the electricity network via three-phase supplies.
- Identify opportunities for smart energy infrastructure that helps to balance local supply and demand.
- Collaborate with major utilities and infrastructure providers through the Plymouth Infrastructure Forum to improve coordination and encourage the alignment of planned works with the objective of making Plymouth carbon neutral by 2030.

Assessed for practicality, impact, and cost

- Complete an up-to-date review of potential for renewable energy in Plymouth with a primary focus on PV.
- Develop a renewable heat strategy for the city by appraising the potential for low carbon heat networks, heat pumps and hybrid boilers, including identifying current potential funding models and barriers to uptake.
- Identify options for how smart renewable heat, power generation and storage could be considered when the Plymouth Plan and Plymouth and South West Devon Joint Local Plan are reviewed.

Requiring resources, new powers and/or change at a national level

- Lobby government to extend the Renewable Heat Incentive Scheme beyond its current end date of 2021, and expand the support available through the Heat Networks Investment Project.
- Lobby government to set ambitious new targets for deployment of new renewable power generation and for the removal of VAT on solar and battery storage technologies.

Currently the city consumes 910 Gigawatt hours of electricity per year. Approximately 15% of this total is generated within the city from renewable and waste related sources (142 GWh).

The potential for renewable and waste related generation is estimated to be 279 GWh, which in part includes an additional 34,000 solar installations on the available south facing roofs.

Investing in solar power will offer a positive return for the City Council, providing up to £1.4 million that would otherwise have been spent on fuel bills.

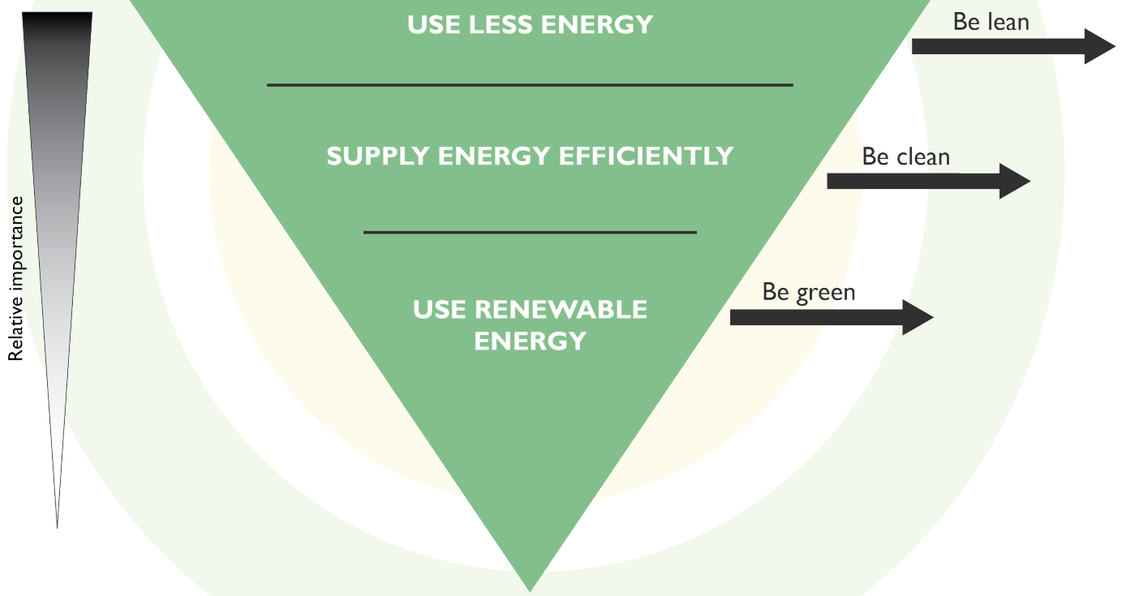
Image © Plymouth Energy Community

Buildings

Most of the buildings that will exist in 2030 have already been built and as such we need to consider how we can best aid the improvement of energy efficiency in both the domestic and non-domestic sectors.

The guiding principle in reducing emissions from buildings is the energy hierarchy:

- Reducing the need for energy in the first instance is always the most effective way of cutting emissions – in housing terms this would involve insulating properties.
- The efficient supply of energy is next – this might mean having an efficient heating system and installing LED lightbulbs.
- Finally, the use of renewable energy completes the hierarchy – this could be solar panels on the roof of homes.

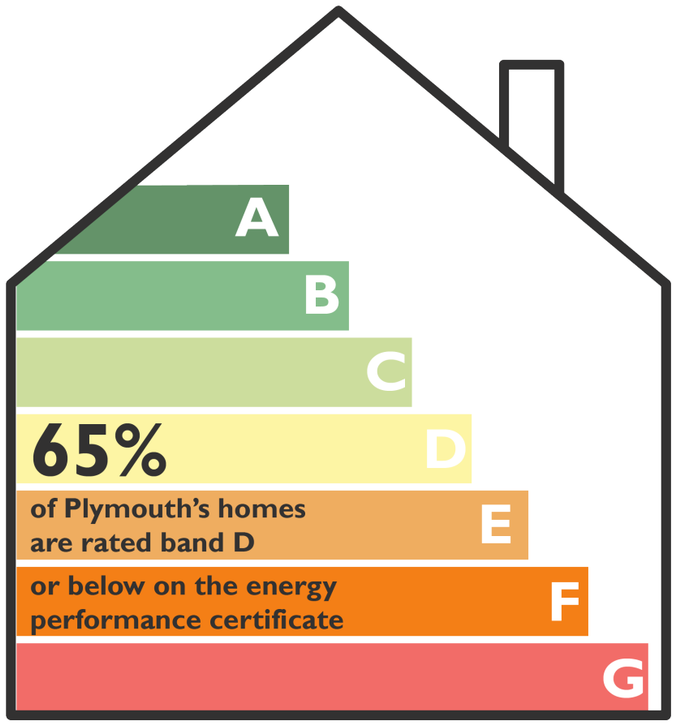


Our buildings are the major source of carbon emissions in the city, being responsible for 31% of the total.

Domestic sector

There are approximately 120,000 homes within Plymouth. Two-thirds of these are currently rated as band D or below on the energy performance certificate. The UK government's Clean Growth Strategy suggests every home needs to be a band C by 2035 if it is to meet its 2050 zero carbon target. This clearly shows the increase in pace needed locally, compared to nationally, to meet the challenge by 2030 in Plymouth.

The City Council is experienced at delivering domestic energy efficiency schemes, utilising a range of funding streams and a raft of different measures. The scale of the climate emergency means that in terms of domestic properties the 2030 target will only be met with a significant increase in government funding and an accompanying change to national policy.



CLIMATE ACTIVE NEIGHBOURHOODS

The City Council's award winning Climate Active Neighbourhoods project has contributed towards Plymouth becoming more climate resilient. 1,000 homes received bespoke energy advice along with a follow up report. The package also included the installation of energy-efficient LED light bulbs, draught excluders, hot water cylinder jackets, heating controls and energy monitors. This suite of measures saved households an average of £200 per year, and across the 1,000 households the project has reduced carbon emissions by 650 tonnes per year.

New homes

New homes will also need to form part of the solution, with Plymouth having a strong growth agenda to build at least 19,000 homes within the Plymouth Policy Area by 2034. The Plymouth and South West Devon Joint Local Plan already contains policies which seek to ensure that new housing is as energy efficient as possible in line with the current building regulations and National Planning Policy Framework.

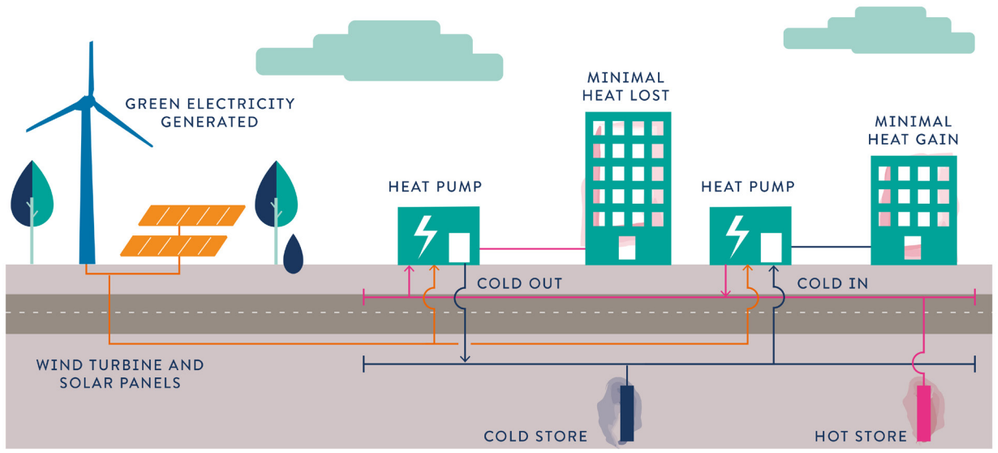
PRIMROSE PARK PASSIVHAUS

The City Council enabled the Primrose Park Passivhaus scheme through its Plan for Homes. A total of 72 affordable family homes have been built certified to Passivhaus Institute standards which provides a rigorous, voluntary standard for energy efficiency in a building, resulting in ultra-low energy buildings that require little energy for space heating or cooling.


Image © Plymouth Energy Community

Plymouth will not be able to decarbonise our homes without a significant increase in support from government. This needs to take the form of both funding to support changes to the existing housing stock and a shift in policy to provide new local powers to ensure that new homes contribute to Plymouth achieving carbon neutrality.

In some parts of the city a low heat network is being developed to provide heating to local businesses.



Non-domestic sector

Improving the energy efficiency of Plymouth's non-domestic buildings will be an essential part of the climate emergency solution.

The UK government has set minimum energy efficiency standards for rented non-domestic properties. In order to let a property, landlords must ensure that it is a minimum of band E on the energy performance certificate, though these standards are in no way sufficient to meet a carbon neutral target of 2030.

Increasing these standards will require a significant policy change by government. Where organisations in the city have control over non-domestic buildings it is hoped that they will deliver above national standards to support the 2030 target. Plymouth City Council in its existing business parks and new developments on its land, will place an emphasis on reducing the carbon emission from these buildings.

BROADLEY PARK WORKSPACE SCHEME

The workspace has been built and designed with the following features to help tackle the climate emergency:

- Solar PV
- LED lighting
- Natural ventilation
- High levels of natural lighting
- Solar reflective glass
- Energy efficient heating linked to the solar PV
- EPC rating of A
- High levels of insulation
- Aerated taps and water flow control measures to minimise water usage
- Reduced running costs to benefit occupiers
- Showers to promote green methods of transport (cycling, running and walking)
- Cycle storage

Action plan for buildings

Immediate actions

- Enable housing opportunities for the delivery of more Passivhaus, modular, Modern Methods of Construction homes and carbon free homes.
- Review opportunities within the Plan for Homes 3 Programme to develop a flagship zero carbon development.
- Ensure all vacant homes brought back into use benefit from energy efficiency upgrades.
- Improve the energy efficiency of heating systems in at least 200 fuel poor households.
- Work with Plymouth Energy Community to provide energy advice to 500 homes.
- Undertake an up to date, bottom-up assessment of opportunities for insulation within existing dwellings by tenure.

Requiring assessment for practicality, impact, and cost

- Investigate the feasibility of establishing a loan fund for owner occupiers to improve the energy efficiency of their homes.
- Proactively enforce the Minimum Energy Efficiency Standards (MEES) which apply to all privately rented dwellings and non-domestic buildings.
- Build on the success of the Climate Active Neighbourhood project and provide simple energy efficiency measures to private households across the city.
- Develop a Climate Change Adaptations Programme fund, to fund the retrofitting of existing properties and explore ways it could provide loans to low income households to enable adaptation works to go ahead.

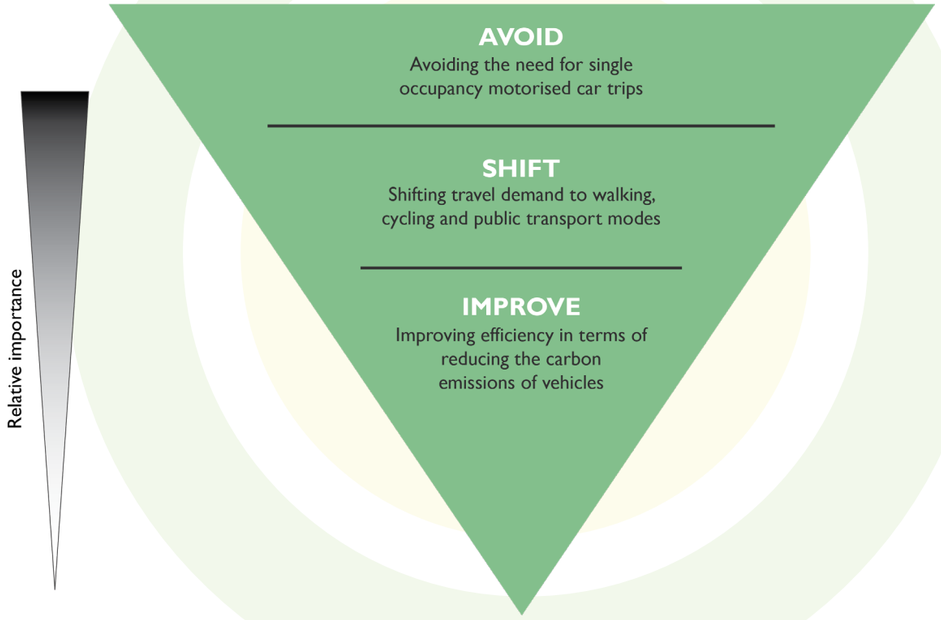
Requiring resources, new powers and/or change at a national level

- Lobby government to change the building regulations quickly to prevent existing planning permissions being implemented to older design standards.
- Lobby government to update the National Planning Policy Framework and associated guidance to planning inspectors, to ensure future Development Plan Documents recognise the importance of tackling climate change to enable carbon neutrality by 2030.
- Lobby government to make changes in planning regulations to allow councils who have made declarations on climate emergency to be able to fast-track reviews of their local plans to accommodate new climate emergency policies.
- Lobby government to make energy efficiency in existing buildings a national infrastructure priority, targeting support at the fuel poor.
- Look at the requirement to submit a planning application for cooling devices.
- Lobby government to bring forward the commitment to a Future Housing Standard to ensure that all new homes and commercial buildings are net-zero carbon from 2025.
- Create an award for mortgage lenders and developers that do the most to support buyers who take into account the future costs of energy in a home prior to purchase.

Mobility

The population of Plymouth and the surrounding area is predicted to grow over the coming decade, which will increase the demand for travel. It is therefore imperative that our transport network provides viable, attractive alternatives to the private car in order for the increased travel demand to be managed in line with our efforts to reduce carbon emissions. Increasing travel choice, managing demand and improving journey time reliability for sustainable modes are needed to deliver a seamless, integrated transport network, to meet the needs of the community regardless of age, gender, wealth and physical mobility.

Mobility hierarchy



Sustainable transport reduces the environmental impact of more carbon intensive travel by offering people an alternative method of travel which is more sustainable:

Plymouth's transport emissions

Transport accounts for 28% of Plymouth's emissions, amounting to 331,000 tonnes CO_2 per year. A combination of technological and behavioural changes will be required to reduce these emissions. With the ban on the sale of petrol and diesel vehicles from 2040, electric vehicles will become commonplace, requiring the development of a comprehensive network of charging infrastructure across the city.

With the right infrastructure and incentives some of the journeys that are taken by car could be avoided. Whilst heavy goods vehicles will be hard to tackle, possible technological solutions include the use of bio-methane, hydrogen, or electrification and the distance travelled by freight could be reduced by improvements to logistics.

Passenger numbers through Plymouth railway station have risen 52% in the last decade and further growth will result from the 'Plymouth Metro' enhanced rail services for local commuters. The modernisation of Plymouth railway station as part of a new £48 million gateway development will make rail travel an even more attractive option.

ELECTRIC VEHICLE CHARGE POINTS

Plymouth City Council has installed 24 electric vehicle charge points, including at Derriford Hospital, Mount Gould Hospital, Cumberland and Thornberry Centres and City College Plymouth.

Action plan for mobility

Immediate actions

- Install up to 100 new electric vehicle charging points in work places across the City before April 2020.
- Install up to 6 new electric vehicle charging points in public car parks before April 2020.
- Create during 2020 up to 9 new public electric vehicle charging hubs including over 50 new innovative pop up charge points.
- Install new electric ferry charging infrastructure at the Barbican by April 2020.
- Bid for funding to develop 30 multi-modal transport hubs including an additional 300 public EV charge points, 400 electric bikes and the establishment of an electric car club between 2020-23.
- Commit to promoting a Car-Free Day across Plymouth during 2020.
- Deliver phase 1 of Transforming Cities Fund sustainable transport investments, this will include: improvements to the passenger concourse at Plymouth train station, 2 new and 5 refurbished bus shelters, 26 new real time passenger information displays, and 7 new web departure boards at locations across the city.
- Deliver Eastern Corridor and Northern Corridor Strategic Cycle Network improvements, as part of the Sustainable Transport capital programme, this will include: 4.7 km of off-road cycle network to connect Southway to the Northern and Eastern Corridor growth areas; new off-road cycle lanes plus the use of quiet roads from Crownhill Road to the A38 and improved access to Shakespeare Primary School; improvement works between North Cross and The Hoe; improvements between the Barbican and Laira Bridge for pedestrians and cyclists along National Cycle Network (NCN) route 27.
- Complete a review of all current transport programmes to ensure opportunities to support the net zero by 2030 target are maximised in all projects.

Assessed for practicality, impact, and cost

- Create a network of mobility hubs that will offer a low carbon multi-modal network for travel throughout Plymouth and the surrounding area. To complement public transport, encourage low carbon transport and to reduce the number of people who own second cars.
- Investigate options for the social prescription of a bike share scheme to allow GPs to prescribe free or heavily reduced bike share memberships to those in need, helping to promote health and wellbeing.
- Assess options to help less affluent neighbourhoods to access electric vehicles and investments that improve air quality will be prioritised.
- Investigate the feasibility of replacing bus fleet with ultra-low or zero emission vehicles by 2025.
- Complete feasibility and business case development for the establishment of an exemplar EV Car Club by 2023.
- Investigate options for delivering a bike hire scheme at a minimum of 10 key interchange hubs in the city by 2023.
- Develop a city-wide Local Walking and Cycling Infrastructure Plan.
- Investigate the feasibility of all significant City Council and developer delivered highway improvement schemes to be subjected to non-motorised road user audits, as recommended by The Design Manual for Roads and Bridges (DMRB).
- Investigate initiatives that make effective use of pricing to incentivise options that support zero carbon travel in line with the mobility hierarchy - encouraging walking, cycling and public transport, with individual car use at the bottom of the hierarchy.

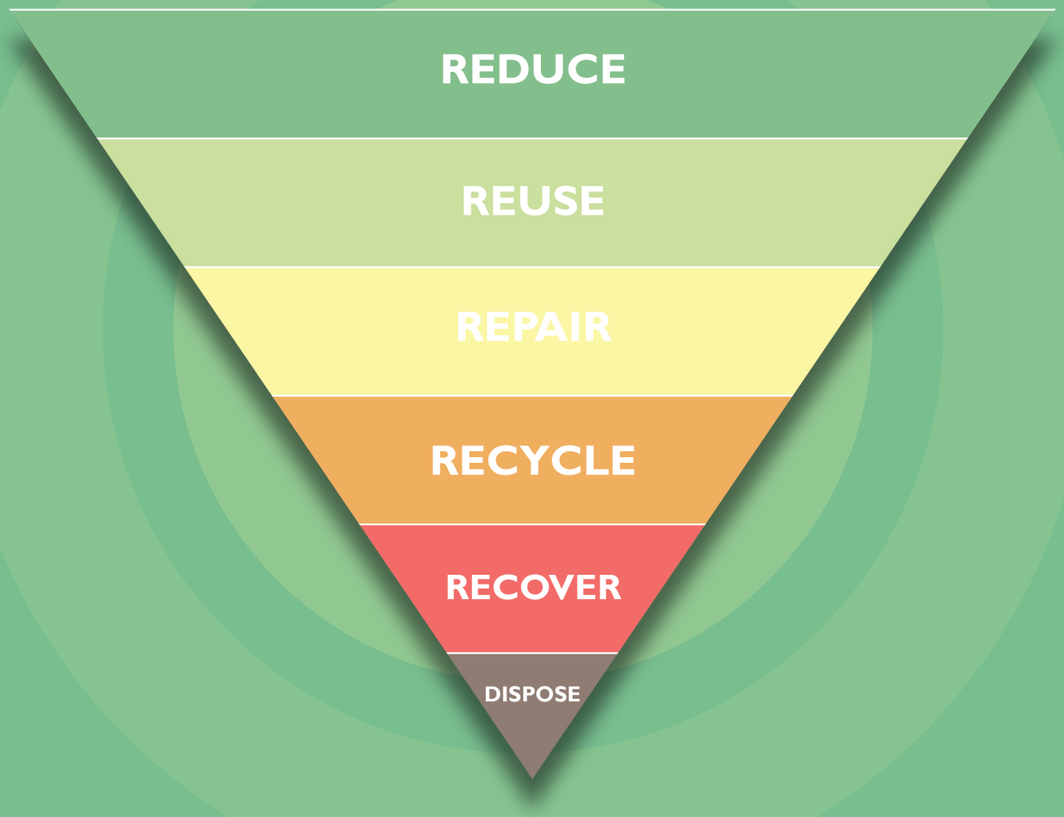
Requiring resources, new powers and/or change at a national level

Plymouth will need to seek much greater government support for initiatives that enable a more rapid implementation of low/zero carbon transport solutions by 2030. To achieve this we will need to:

- Lobby government for changes to current transport scheme appraisal tools to ensure the criteria prioritise positive climate emergency outcomes, such as walking, cycling and bus priority measures.
- Lobby government for initiatives that improve mechanisms and incentives for the rapid uptake of Ultra Low Emission Vehicles.
- Lobby government to review the impact of the UK's international aviation and shipping emissions.

CLIMATE CHANGE

Waste hierarchy



As the landfill site has closed, and the city's waste is now recycled or used for energy recovery, the emissions from the landfill site will decline steadily over time.

Waste

Greenhouse gas emissions from waste account for 10% of Plymouth's emissions, amounting to 118,000 tonnes of CO_2 per year. The avoidance of waste and the effective management of the remaining waste plays a critical role in reducing greenhouse gas emissions.

Within Plymouth the City Council's municipal waste management strategy provides a road map to improving the sustainability of waste management to 2030. It recognises that waste is a resource and the importance of supporting the development of the circular economy which aims to gain maximum benefit from materials and products by keeping resources in use for as long as possible and then recovering material value at the end of life.

To help achieve this outcome it is important that we all follow the waste hierarchy, which prioritises the avoidance of waste and deals with any waste created in accordance with the best environmental option by seeking firstly options for reuse, then recycling, followed by treatment that recovers energy from the waste, and with disposal being the final option when no other treatment is available.

In recent years there has been a significant change in societal attitudes and behaviours are changing, particularly in relation to single use plastics. Public awareness of the need to reduce waste, reuse where possible and to recycle is widespread. Changes in waste management to support carbon reduction is an area where everyone in Plymouth can have a positive benefit. One source of emissions that is often overlooked is the energy used to make the goods that we consume. This is another area where as a city we can make a difference.

MANAGING WASTE

The City Council has invested in strategic sustainable waste management practises and has facilities that create green energy, including:

- The energy-from-waste facility at Devonport, which produces energy in the form of steam and electricity from the treatment of the city's waste. The energy primarily supplies Devonport Naval Base, with any surplus electricity being fed into the national grid. Less than 0.2% of the city's municipal waste stream cannot be treated at this facility and is sent to landfill.
- The Material Recycling Facility (MRF) at Cheslon Meadow, which enables a comprehensive range of materials to be recycled, including glass, paper card, metal cans and a wide range of plastics, including black plastic trays.
- The City Council's landfill site at Chelson Meadow closed in 2008 and has undergone initial restoration to contain landfill gases. Methane gas from the site is collected and is used to generate electricity which is fed into the national grid.

Action plan for waste

Immediate actions
• Launch campaign to reduce waste generation (especially food waste) by 25% by 2025.
• Launch campaign to increase Plymouth's household and municipal recycling rates from 39% to 65%.
• Increase the number of recycling bins in high footfall areas.
• Initiate review of all legacy and recent landfill sites and assess opportunities for additional methane capture and energy production.
• Ensure that all recyclable material under Plymouth City Council's control is recycled in the UK.

Requiring assessment for practicality, impact and cost
• Review of waste management service provisions to ascertain a reduction in carbon emissions from the handling, transportation, treatment of waste and recycling.
• Identify processing gaps in wider South West region waste recycling and treatment facilities and make appropriate provision for particular materials where gaps are identified.
• Work with others to investigate how to achieve the required levels of reduction in CO_2, methane and N_2O emissions from waste operations by 2030.

Requiring resources, new powers and/or change at a national level
• Lobby government to ensure its new Resource and Waste Strategy fully supports the need to address the climate emergency and provides local authorities with the powers and resources needed to increase recycling targets, food and garden waste management and additional measures to reduce the environmental impact of resource use and the creation of waste.

Engagement and responsibility

For the city to be effective in addressing the climate emergency we need a city-wide conversation about how people and organisations can take action to reduce emissions, with everyone playing their part. The conversation needs to be honest and open, and crucially it needs to lead to an understanding of the impact that individuals and organisations can make. Understanding our impact, opportunities and limitations is a vital first step to reducing our emissions.

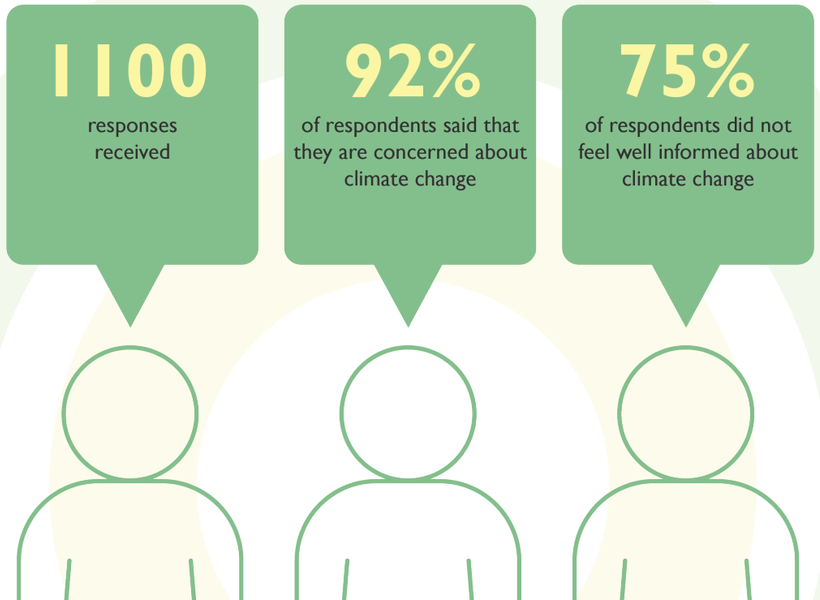
Plymouth City Council is working with the Devon Net-Zero Task Force in order to ensure that actions taken within the city are integrated into a wider strategy being taken by other organisations across Devon.

Public consultation

The City Council has an important role to play in facilitating city-wide conversations and engagement. In September 2019 a public consultation was held which sought responses from citizens around the climate emergency.

Over 1,100 responses were received with 92% of people expressing concern about climate change. However, 75% of respondents did not feel that they were well informed about the issues.

The City Council recognises that it needs to play a central leadership role working with others across the city to raise awareness and understanding around climate change. Importantly we need to ensure everyone understands what part they can play in addressing the climate emergency.



Behaviour change

Making changes in our own lives is a vital component of the solution to climate change. Without significant shifts in the way we think, act and make decisions we will not be able to achieve the level of impact needed to address the issue. The UK's Committee on Climate Change predicts that societal and behaviour change will play a part in over 60% of actions needed to reduce carbon emissions, highlighting that local grassroots action and engagement will have central part to play in achieving net zero by 2030.

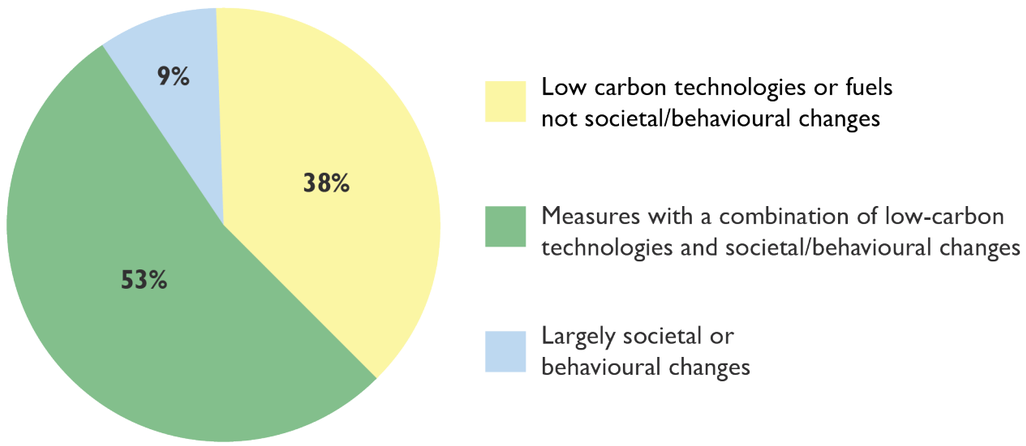


Image © Plymouth Energy Community

City-wide conversation

The 2030 carbon neutral target will only be met through collaborative working between individuals, communities and organisations across Plymouth and beyond. Organisations across the city are already commencing work to support Plymouth's 2030 target and the case studies below highlight some of the current work in the city that will be rapidly expanded. The city has some outstanding natural infrastructure, with award winning green spaces and a recently established National Marine Park. And Plymouth's Plan for Trees includes a three phase delivery programme for increasing tree cover in Plymouth to 2034. As well as the role that this will play in capturing carbon, these spaces are important from a wider environmental and bio-diversity point of view and are a focus for engaging people with climate change and how they can support efforts to tackle the problem.

UNIVERSITY OF PLYMOUTH

- Declared a Climate Emergency
- Adopting a net zero emissions target for 2025

"Achieving net zero emissions is essential, but adapting to future climates is also crucial. As a university, we must get our own house in order in terms of carbon emissions and we are doing so. At the same time, we are committed to transforming lives and responding to the climate emergency. Generating the knowledge and skills that will drive future adaptation and sustainable living are at the heart of our mission."
Judith Petts, Vice Chancellor

NHS

"The climate emergency is a health emergency. In order to provide the best possible quality healthcare for our patients we must increase our efforts to mitigate climate change and our resilience to cope with the effects of a changing climate. This is why our Trust has declared a climate emergency and supports Plymouth City Council's 2030 net carbon zero target."
Ann James, Chief Executive, University Hospitals Plymouth NHS Trust

PLYMOUTH MARJON UNIVERSITY

"We are committed to achieving a net zero campus and are already engaged in master planning work to achieve this. We have solar power already installed on our university's rooftops, and currently all the electricity being purchased comes from low carbon generation. The university will be campaigning and working to reduce waste of all kinds, including electricity, with sustainability being a focus in all future development plans."
John Bailey, Director of Estates and IT Infrastructure, Plymouth Marjon University

In light of the climate emergency and with input from the Marjon community, the university will be creating new sustainability policies. It has already started to implement strategies to improve sustainability and reduce carbon emissions. It is in the process of improving its waste services, energy efficiency and green transport facilities, for example with planned additions for electric vehicle infrastructure. Solar power has been installed on one of the university's rooftops, and currently all the electricity being purchased comes from low carbon generation such as renewable technology. The university will be campaigning and working to reduce waste of all kinds, including electricity, with sustainability being a focus in all development plans for the campus.

Action plan for engagement and responsibility

Immediate actions

- Organise a programme of "climate conversations" to bring together key stakeholders from across Plymouth to review strategic options for delivering net zero by 2030.
- Undertake a rapid review of the city's growth strategy to ensure it supports our aim to achieve net zero carbon by 2030.
- Organise community and school events to harness grassroot enthusiasm to take action to tackle climate change. Including, but not limited to:
    - Support Plymouth Energy Community.
    - Establish a community tree nursery at Poole Farm.
    - Carry out an i-Tree Eco survey and report to understand the value of Plymouth's Urban Forest.
    - Initiate a Plymouth Tree Challenge for people across the city.
    - Create a climate change resilient showcase arboretum in Central Park.
    - Invest in tree planting and rewilding corridors.
- Complete a review by June 2020 of how City Change Fund could enable climate emergency focused community projects with a focus on the climate emergency.
- Promote a Car-Free Plymouth day during 2020.
- Support key stakeholders to develop 'bottom up' carbon foot prints for priority high emitting sectors, encourage sharing of best practice and support the accelerated delivery of actions to reduce emissions.
- Continue to work with other councils with similar ambitions, sharing best practice.
- Launch a city-wide climate emergency communications programme.
- Identify large emitters of greenhouse gases and encourage them in their carbon reduction activities.
- Develop a Flood Risk Improvement Programme by working with the Environment Agency to align capital investment to manage flood risks in communities across Plymouth.
- Implement a biodiversity net gain approach that supports climate emergency actions and ensures high quality environmental outcomes in all developments.

Requiring assessment for practicality, impact and cost

- Investigate and maximise opportunities to leverage funds for tree planting.
- Investigate options for alternatives to fossil fuel-based products for the management of Plymouth's green spaces.

Requiring resources, new powers and/or change at a national level

- Liaise with other Councils across the South West to develop a peninsular approach (a South West Climate Change Peninsula Task Force) which sets out our asks to Government.
- Lobby government to encourage changes to laws, taxation, and investment in infrastructure, to make low carbon living easier.

Climate change is the biggest challenge facing our city's future and without rapid action the consequences will be severe on society, the environment and the economy. Plymouth cannot resolve global climate change alone, but we can play our part by participating fully in a climate emergency response.

This Action Plan is the first significant step in directing action that will reduce carbon emissions across Plymouth and set us on a path to meet our net zero carbon ambition by 2030.

The Action Plan gives an overview of the work that will be undertaken in the next two years as part of the emergency response to the climate crisis. The whole document will be reviewed and updated in one year's time.

CALL TO ACTION

Everyone can play a role in combating climate change and helping Plymouth to become carbon neutral by 2030. Action needs to be taken at all levels, with governments, local authorities, businesses and individuals all needing to play their part.

Responding to climate change not only protects our future environment, economy and culture, but it also provides lots of opportunities for making a better, fairer city.

In order to help change mindsets and open up opportunities for cooperation between organisations, Plymouth City Council will help to facilitate a city-wide conversation on climate change which has at its focus a need to initiate action. Conversations with business leaders will be arranged to bring together senior managers from organisations across the city to inspire cooperation and the exchange of ideas to ensure that transformative initiatives can be replicated and delivered across the city and beyond.

We would like to hear about what you are doing to tackle climate change and support the 2030 ambition. We would also be interested in any suggestions that you may have on how to encourage others to support this crucial initiative.

PLYMOUTH
CITY COUNCIL

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