

WEST OF ENGLAND CLIMATE AND ECOLOGICAL STRATEGY AND ACTION PLAN 2022



FOREWORD



The West of England is an amazing place to grow up and grow old in. But we are living in the midst of a deadly climate and ecological emergency. We therefore need to take urgent steps to protect our brilliant part of the world.

The scale of the challenge is daunting. It will involve taking action at four equally important levels – locally, regionally, nationally and globally. It won't be easy. In fact, it will be hard. We will all have to do things differently. There will be trade-offs, compromises and we will need to make some very big choices.

Many of the people that I meet and hear from are deeply concerned about the environment. Young people are particularly anxious – they are most alert to climate change and know they have the most to lose. Aware of the great strength of public opinion here in the West of England we have rightly set a very ambitious target to achieve net zero by 2030. I also want to tackle the ecological emergency and to make our region the bee and pollinator capital of the U.K.

I know West of England people wherever they live – from our most rural communities to our market towns and our great cities of Bristol and Bath – want to meet these hugely important goals. Indeed, I often think local people are way ahead of our politicians when it comes to the environmental agenda.

So, I will always strive to ensure that the West of England Combined Authority, which I lead, takes bold action and makes the difficult, but necessary, decisions to rise to the challenge of saving our planet.

The big choices that have to be made cannot be done in isolation. The West of England Combined Authority will need to work in very close partnership with residents, regional partners and our local councils. We will desperately need Government to do much, much, more too – and I will continue to relentlessly make our case to them.

This strategy and action plan is only the start. It sets out practical steps we can take as a region. It highlights the challenges we must address. It sets us on a path that I know people right across the West of England are committed to. But it is a living document and will be amended and updated to reflect changing circumstances and new ideas that we will need to embrace, if we are not only to successfully protect the planet, but make it better than now.

I'm hugely proud of our great region for many reasons. I know that together we can make a real difference in the fight against climate change. Let's get to it and show our country and the world how it can be done.

Dan Norris

West of England Metro Mayor

To tackle the climate and ecological emergencies across the West of England we will need to:

- Drastically reduce emissions – cutting our West of England CO₂ on average by 10% year-on-year
- Halt the decline in the number and range of animals and plants and protect existing wildlife spaces and create more high-quality green spaces and green corridors within our region

Since May 2021 we have:

- Created a £50m Green Recovery Fund and made our first investments
- Secured over half-a-billion pounds to help decarbonise transport
- Established a regional Climate Action Panel of key stakeholders across the region
- Launched new programmes to support residents and businesses to learn new green skills and create green jobs

Now we plan to:

- Increase the scale and pace of housing retrofit within the region with a Retrofit Accelerator
- Halt the decline of wildlife and create more green spaces for pollinators and bees by establishing a Community Pollinator Fund
- Reduce emissions from transport by increasing the amount of electric vehicle (EV) charging points across the region

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OUR PRIORITIES AT A GLANCE

We have set five priorities where action is needed and where the Combined Authority working with partners including North Somerset Council can deliver tangible progress to tackle the climate emergency across the wider West of England region.

Our five themes are priority areas that have been developed in collaboration with our partners. They reflect our understanding of where the emissions are generated in the region.

Key to the delivery for all is funding, data accuracy, skills and training. By targeting these priority areas we are expecting to deliver significant climate and ecological benefits.

Our Priorities	Our Key Actions for 2022/3
By targeting these priority areas we are expecting to deliver significant climate and ecological benefits.	This strategy and action plan sets out actions we will take to 2030. In the next year, progress we will make includes:
1 Low Carbon Transport Decarbonise the transport system, reduce car dependency, manage demand, increase cycling and walking and the use of public transport.	Opening £50m Green Recovery Fund to business case applications for projects to meet our 2030 objectives
2 Low Carbon Buildings & Places Increase the energy performance of buildings and develop low carbon standards in new developments.	Developing and launching the Retrofit Accelerator to increase the scale and pace of retrofit within the region
3 Nature Recovery Wildlife and the natural environment are in recovery, with their decline halted and in line with the West of England Nature Partnership the abundance of wildlife has increased by 30% by 2030.	Enhancing the ecological network to create new spaces and habitats for wildlife including pollinators through delivery of Green Infrastructure projects (Bath Riverline, Chew Valley Lake and Common Connections) and launch the Community Pollinator Fund to make the West of England the UK Pollinator Capital
4 Low Carbon Business Help business and local people benefit from growth in the green economy; maximising government investment in the region and supporting our businesses to grow.	Reducing carbon emissions from our transport system and car dependency through better bus service, delivering walking and cycling infrastructure, travel planning and investing £5m Green Recovery Fund to improve the EV charge point infrastructure and matching this with the recently announced £500m as part of the national EV strategy.
5 Renewable Energy Work to decarbonise the energy system and increase local renewable energy.	Increasing the amount of renewable energy generated within the region delivering over £1m of programmes such as Solar Together, Local Energy Scheme and Rural Community Energy Scheme

OUR STRATEGY

The Challenge

The West of England Combined Authority's ambition is that in 2030:

- the West of England is net zero carbon, and
- wildlife and the natural environment are in recovery, with their decline halted.

These ambitions are separate and have equal standing and status within the region. Although linked, we know that solving the climate emergency alone will not resolve the ecological emergency, and vice versa.

Achieving these formidable ambitions requires rapid and significant action to transform our region. We must work across levels of government, catalyse private sector action, and empower the public to take action as well. We must adapt our behaviours and use existing technology rather than waiting for future solutions. We must adapt to an uncertain and changing national context.

As a Combined Authority, and working with North Somerset Council, our adopted strategies including the Joint Local Transport Plan, Joint Green Infrastructure Strategy and our developing planning policies are already contributing towards our ambitions.

This plan takes us further – setting out a route map between now and 2030. The plan:

- defines our long-term strategic approach to tackling the climate and ecological emergency – the ways that we will deliver and the objective for each priority area;
- sets out our short-term action plan – including those actions already underway;
- describes the medium and longer-term actions we will develop as we continue to build our plans for the future.

The Strategy and Action Plan provides a framework for our action up to 2030, but is not the final word. We will revisit these actions regularly, building up a programme that will realise our ambitions.

A Green, Just Transition

The actions required to address the impacts of climate change and encourage the recovery of nature will create new economic opportunities. But the benefits from this transition must be shared widely, and support provided for those who may lose out. We must ensure the transition to a green economy does not leave anyone in the region behind.

The Strategy and Action Plan will help to tackle some of the most challenging issues we face as a region through this transition, including improvements to air quality, health and wellbeing, supporting nature's recovery, and addressing social inequalities.

We will make hard decisions to cut emissions and protect the natural environment and will support our stakeholders to do the same.

Our actions and decisions will continue to be driven by science-based evidence, but we recognise that the urgency of the challenge means we will need to take decisions while the data remain uncertain. Where gaps in data are identified we will work with our stakeholders to address them.

OUR APPROACH

This Strategy and Action Plan is designed around the five priorities that were developed and agreed by Combined Authority partners. Each section sets out:

- **Our objective for 2030**
- **How we will deliver this objective** – our strategic approach, outlining the key ways in which we will lead change
- **2022/23 actions** – the immediate steps we will take to deliver swift action
- **Medium-term actions and long-term ambition** – our plans to deliver further progress and to continue building our action. Further into the future, these will need to remain flexible so that we can continue to identify the actions needed to meet our ambitions.

We know we cannot meet our ambitions alone. The priority areas are interlinked, and impacts are often connected. The plan also sets out how the Combined Authority's actions will complement work already under way by our Unitary Authority partners, including North Somerset Council, and ensure we continue developing our plans in collaboration.

This plan also includes our asks of government: where we will need devolution, policy direction, regulation, or funding to be able to co-ordinate and drive forward the transition.

We will provide progress reports every six months and update the plan annually to ensure we maintain momentum and ambition. This Strategy and Action Plan is a living document and will remain under constant review.

The Strategy and Action Plan has been prepared in collaboration and consultation with key stakeholders via engagement workshops, including:

- Unitary Authority partners,
- our regional Climate Action Panel, representing key businesses and stakeholders from across the region including Wessex Water, Business West and Bristol University, and
- the Local Enterprise Partnership.

The West of England Combined Authority Committee has agreed five principles for the plan:

- **Take action now on the highest sources of emissions and causes of destruction of the natural environment** and where we can have most impact as a Combined Authority – our five priority themes.
- **Make the hard decisions to cut emissions and protect the environment** – we know that cutting emissions and protecting

the environment will require taking hard decisions that will change the way we live and work in the region. We are not afraid to take these decisions and need our Unitary Authorities, residents and businesses to make the same tough decisions.

- **Take a data led approach** – providing metrics to fully understand the impact of actions taken and decisions made where the data is available. However, we recognise that the data to support some decisions is still in development. Where this is the case, we will not let lack of certainty be used as grounds for inaction or the avoidance of risk.
- Ensure that we are **adapting** to the effects of climate change by protecting and enhancing the natural environment and **ensuring climate resilience in our infrastructure and across our region**
- **Facilitate a just transition** – working to promote the green skills and high-quality jobs within a net zero and nature-rich economy. Ensuring that the decisions that we take do not adversely affect specific social groups.

To ensure that we deliver against these priorities, we will need to act as a region to address the way we work to build our skills, leverage funding and manage data. These issues are reflected in the Action Plan.

OUR APPROACH continued

Role of the Combined Authority

Tackling the climate and ecological emergencies are a priority across the region. Yet achieving it will require changing what we do, how we live and work in the region and how we work together to make our decisions.

In order to meet the challenges we have set ourselves, we must work in collaboration – with regional partners, with residents, with businesses, and with Government.

The Combined Authority and our partner Unitary Authorities must take action, but we also have an important responsibility to enable strategic changes and inspire behaviour change across all five of our priority themes.

There is no simple answer as to who does what. We need a flexible approach with a commitment to joining up, working together, avoiding overlaps and pooling resource where it makes sense to do so.

As a Combined Authority, we will focus on working in partnership with our unitary authorities to fulfil our role to:

- Deliver the actions within this plan to meet our challenging 2030 objectives, including:
 - reducing carbon emissions from our transport system and reducing car dependency

- Significantly increasing retrofit across the region to reduce emissions from homes and other buildings
- Supporting nature recovery by creating new spaces and habitats for wildlife including pollinators
- Change the things within our direct control to help reduce emissions and halt the decline of wildlife including our own buildings, operations and travel and the way that we procure and commission.
- Grow the resources available to deliver action across the region. Developing successful fundable programmes, attracting private investment, and making the case for further investment in the region.
- Deliver changes to our regional infrastructure and planning policies to ensure that they enable us to meet our 2030 objectives
- Grow the skills within the region to support the delivery of action by developing successful skills training programmes, supporting businesses and residents with their own transition towards our 2030 objectives and making the case for further devolution and investment in skills in the region.
- Showcase good practice within the region to ensure we are involving and engaging

our communities and building partnerships where we need to drive effective change.

As Unitary Authority partners and the Metro Mayor, we have already worked together to take action on fulfilling these roles and increasing the scale and pace of delivery towards our 2030 objectives.

Accelerating our ambition: action since June 2021

In 2021-22 we have:

- Increased resources by creating a £50m Green Recovery Fund
- Secured over £500m to help decarbonise transport through the City Region Sustainable Transport Settlement
- Launched new programmes to support residents and businesses to learn new green skills
- Identified a range of strategic green infrastructure projects across the region
- Established a regional Climate Action Panel of key stakeholders and businesses across the region

OUR APPROACH continued

Our Key Actions for 2022/23

We know that the scale of the challenge is huge and meeting our ambitions will not be easy. The successful delivery of our 2030 objectives is at risk if we do not increase the pace of delivery and take difficult decisions now.

This plan sets out a range of actions that we will work with our partners on to deliver to help meet this challenge.

Our key actions for 2022/23 are to:

- 1 Open £50m Green Recovery Fund to business case applications for projects to meet our 2030 objectives
- 2 Develop and launch the Retrofit Accelerator to increase the scale and pace of building retrofit within the region
- 3 Develop the Local Nature Recovery Strategy – enhance and create new spaces and habitats for wildlife including pollinators through delivery of Green Infrastructure projects (including Bath Riverline, Chew Valley Lake and Common Connections) and launch the community pollinator fund to make the West of England the UK Pollinator Capital
- 4 Reduce carbon emissions from our transport system and car dependency through better bus service, delivering walking and cycling infrastructure, travel planning and investing £5m to improve the EV charge point infrastructure

- 5 Increase the amount of renewable energy generated within the region delivering over £1m of programmes such as Solar Together, Local Energy Scheme and Rural Community Energy Scheme

Our Key Asks of Government

In order to meet the scale of the challenge and achieve our objectives, we are clear that government will need to do more to support our ambitions us to go further, faster. We need government to work with us flexibly and responsively, listening to our needs.

To make progress across all themes we will need government to:

- Provide more resources e.g. the skills funding and training frameworks required to ensure the transition towards net zero and to protect and enhance the natural environment. The investment required goes way beyond the resources available to the Combined Authority or unitary authorities. Central Government needs to step up and invest in programmes we are developing.
- Devolve powers and adapt national regulation –it is not just about resources. The Combined Authority and Unitary Authorities need the powers to manage our transport, planning, energy infrastructure and skills systems to achieve our ambitions and need national regulation to reflect this and be supportive of our 2030 ambitions.

Our top 5 asks of government are to:

- 1 **Develop a national retrofit strategy** and provide long term funding streams – piecemeal, stop-start national policy interventions, such as the failure of the Green Homes Grant voucher scheme, are preventing retrofit at scale
- 2 **Provide accelerated powers** for demand management and funding to reduce car dependency and improve alternatives to private car use, including increasing the pace of electrification of the buses and rail services – government's current delivery plans do not have sufficient clarity or urgency
- 3 **Provide sufficient capacity funding to produce, deliver and monitor Local Nature Recovery Strategies** including by launching further rounds of the National Green Recovery Challenge Fund
- 4 **Launch further innovation funding rounds to promote low carbon goods and services** and promote roll out of new energy systems including tidal, hydrogen and nuclear fusion
- 5 **Open further funds to support the mainstreaming of new energy systems** including hydrogen, tidal, nuclear fusion and battery storage

DELIVERING OUR AMBITIONS

As a region, we have committed to going further and faster than the national government to improve meet net zero and protect the natural environment. With this increased ambition, comes increased scale and pace of delivery. We know that this will require a significant increase in funding.

As such, we have collectively agreed to create the Green Recovery Fund – a £50m investment fund to help stimulate further action and leverage in additional funds to the region.

The Green Recovery Fund provides one route to funding the some of the proposals set out in this document, and proposals brought forward for the Green Recovery Fund will need to align with the themes of this Strategy and Action Plan.

Significantly increased levels of investment will need to be leveraged in the coming years to deliver our ambitions. Government have begun to take action on this including creating £500m to improve EV charge infrastructure and announcing its intention to create a Woodland Creation Accelerator Fund to help increase the amount of trees and woodland in the country. The Green Recovery Fund will help us as a region to be able to access these funds.

However, we are clear that this will still not be sufficient. Throughout the plan, we have highlighted where we think additional funds are required from government but as a Combined Authority and region, we are also committed to:

- Working with private sector partners to secure further funding.
- Supporting innovative forms of finance and the green finance sector to develop within the region.

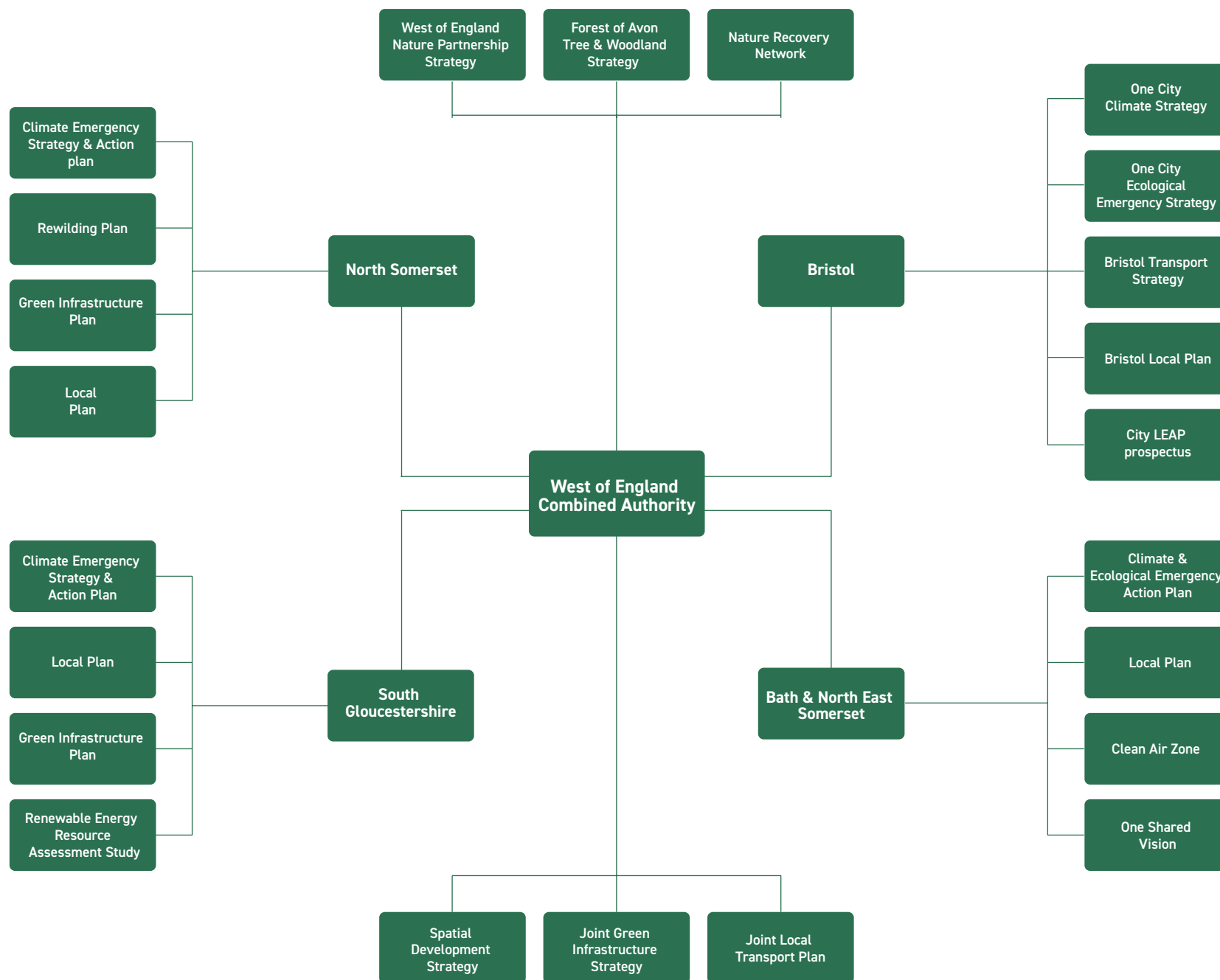
Strategies & Plans in the Region

This strategy and action plan builds on the existing regional strategies within the region, including the spatial plans, Joint Local Transport plan, Joint Green Infrastructure Strategy and action plan. All of our partner Unitary Authorities have also published their own climate strategies and action plans and have declared ecological emergencies.

The Climate and Ecological Strategy and Action Plan is not intended to replace or supersede the policies and activity contained within these documents. It is meant to complement them, providing an overview of our strategic approach and key actions to tackling the

climate and ecological emergencies. As such, it should be read alongside our other regional strategies and action plans. Future actions and the development of this plan will take into account the wider regional strategies.

A snapshot of the key regional documents and strategies is below



UNDERSTANDING THE SCALE OF THE CHALLENGE



THE CHALLENGE FOR:

LOW CARBON TRANSPORT

LOW CARBON BUILDINGS AND PLACES

DELIVERING NATURE RECOVERY

LOW CARBON BUSINESSES

RENEWABLE ENERGY

UNDERSTANDING THE SCALE OF THE CHALLENGE

Achieving our 2030 ambitions will require rapid and significant changes in the region. Current trends are not fast enough, and action must accelerate.

The West of England emitted 4,960kt of CO₂ in 2019. This amounted to 4.3 tonnes per person, slightly lower than the national average of 5.2 tonnes per person.

From 2005 to 2019, emissions fell by an average of 3.3% each year. If the same trend were to continue, the region would still emit 3,300kt CO₂ in 2030.

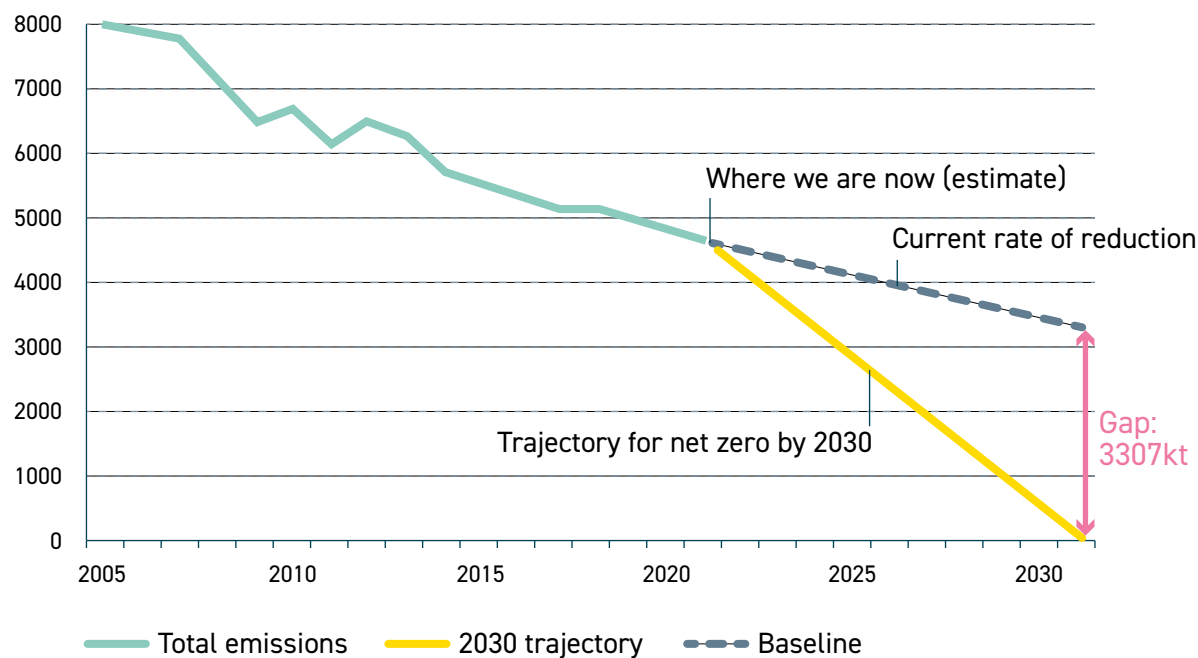
To reach net zero, emissions must fall by 464kt every year – 10% of current levels. This requires a significant acceleration of the progress made in recent years.

The region's emissions arise from transport (44%), domestic uses of power and heating (30%), and businesses (26%). Reductions in emissions in recent years have arisen largely from the decarbonisation of the national electricity grid, which has reduced domestic and business emissions.

On the other hand, transport emissions have remained level over the past 15 years. Increasing fuel efficiency has been off-set by rising car journeys.

Figure 1: West of England greenhouse gas emissions must fall rapidly to meet our net zero ambition.

West of England trajectory to net zero (kt CO₂ per year)



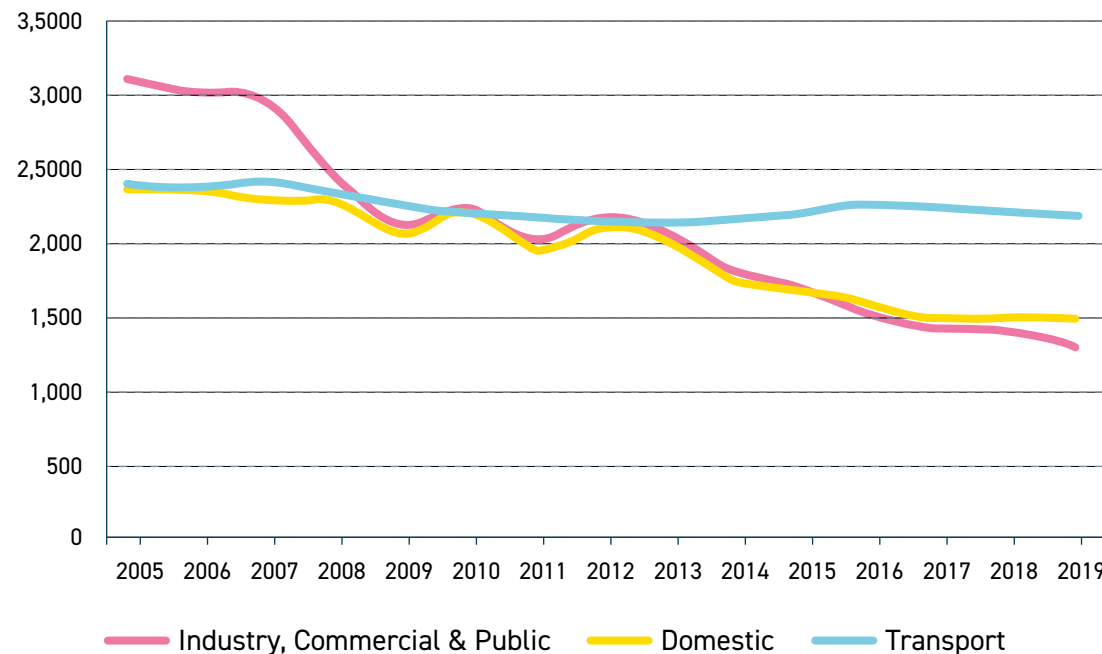
UNDERSTANDING THE SCALE OF THE CHALLENGE continued

And we know that these figures do not provide the full story: they cover only emissions produced within the UK. Our businesses and residents consume imported goods and services, which have their own carbon footprint that is not accounted for here. Emissions embedded in imported goods and services account for over two-fifths (43%) of the UK's total carbon footprintⁱⁱⁱ. Consumers and businesses in the West of England have some control over the products they choose, but action is needed nationally and internationally to fully tackle this source.

The following sections discuss the current position for each of the five priority themes in this plan.

Figure 2: The sources of regional carbon emissions have changed since 2005. Domestic and business sources have declinedⁱⁱ.

CO₂ emissions (kt), West of England



UNDERSTANDING THE SCALE OF THE CHALLENGE continued

The Challenge for Low Carbon Transport

Emissions from transport are among the largest contributors to greenhouse gas and CO₂ emissions in the region, representing 44% of the total. Overall, it is not reducing in line with other emissions. Population growth means that car trips are expected to increase by a further 8% up to 2030^{iv}.

Emerging findings from the West of England Transport Decarbonisation Study show that there is a considerable gap between our forecast carbon emissions reductions and 2030 ambitions. Even considering planned activity and commitments such as the City Region Sustainable Transport Settlement and MetroWest, this will only reduce carbon emissions to around 25% of current levels by 2030.

In order to fill this gap, we need to substantially reduce the use of the private car mileage by 40%, reducing the number of trips and their length. A shift towards electric cars will not be enough.

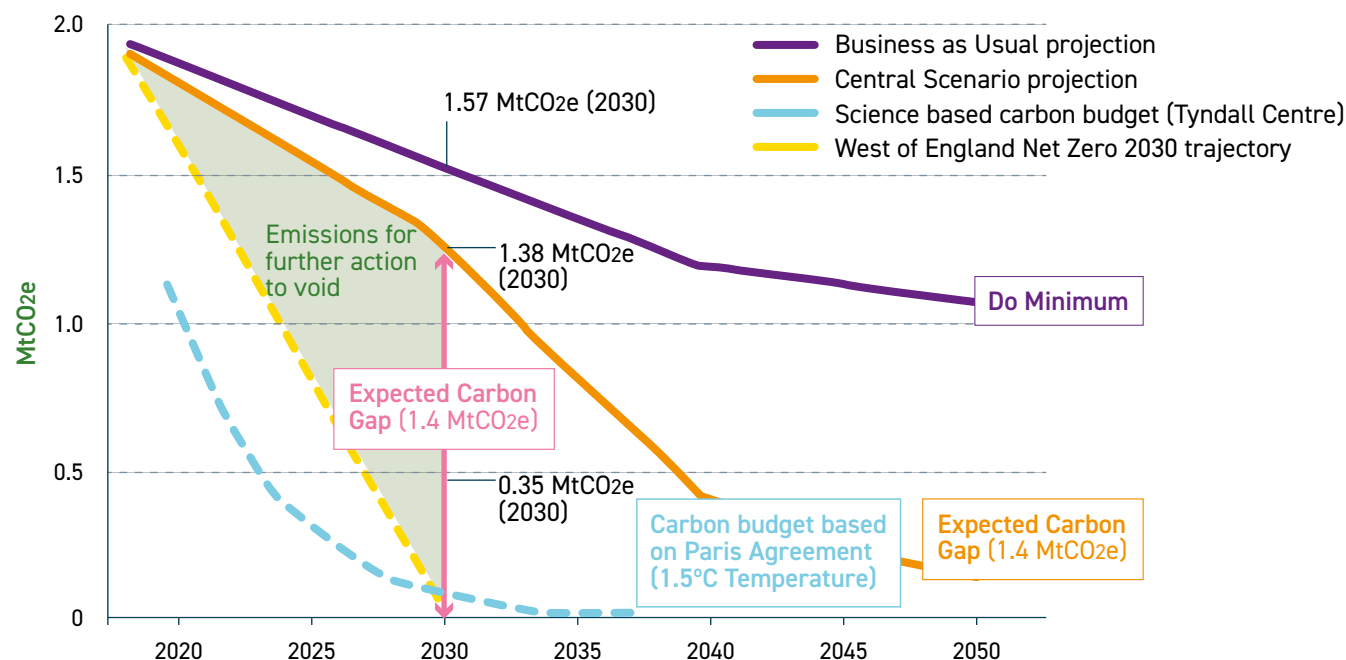
We will need to further ramp up infrastructure improvements to walking, cycling and public transport beyond existing plans to provide alternative journey options to the private car. We will also need a range of demand

management measures to help reduce the number of car trips within the region. Including travel planning, marketing, parking policy, and a package of workplace parking levies and/or congestion charging areas.

This graph illustrates the scale of the challenge in moving transport towards net zero. Our 2030 ambition is broadly in line with the Paris

Agreement, but we will need to do much more to reduce car use given the likely proportion of non-electric vehicles by 2030.

Figure 3: Emissions cuts required by 2030 from transport (yellow line) compared with baseline following national trends (orange line) (WSP)



Reference: Tyndall Centre Carbon Budget <https://carbonbudget.manchester.ac.uk/reports/>

UNDERSTANDING THE SCALE OF THE CHALLENGE continued

The Challenge for Low Carbon Buildings & Places

Heating and powering our homes accounts for just under a third (30%) of the region's CO₂ emissions. To reach net zero, we will need to improve the energy efficiency of our buildings and move over to low-carbon heating sources. A total of 250,000 homes will need retrofitting with insulation and low-carbon heating.

Across the UK, emission reductions from buildings have levelled off since 2015. To achieve a 2050 net zero target, the Committee on Climate Change recommends:

- All new buildings to be zero-carbon by 2025,
- All homes for sale must be rated EPC "C" level by 2028,
- 100% of heating systems off the gas grid to be low-carbon from 2028 – i.e. not coal or oil, and,
- 100% of systems off natural gas by 2033^v.

The West of England will need to act faster than this.

On **energy efficiency**, over 170,000 homes in the region need to increase their insulation and reduce energy use as far as possible. This will lower fuel use and bills, and reduce the costs of decarbonisation. Currently, around 1,700 homes are retrofitted with insulation in the region each year, but the rate needs to increase to 29,000 per year: 21,000 properties installing wall insulation,

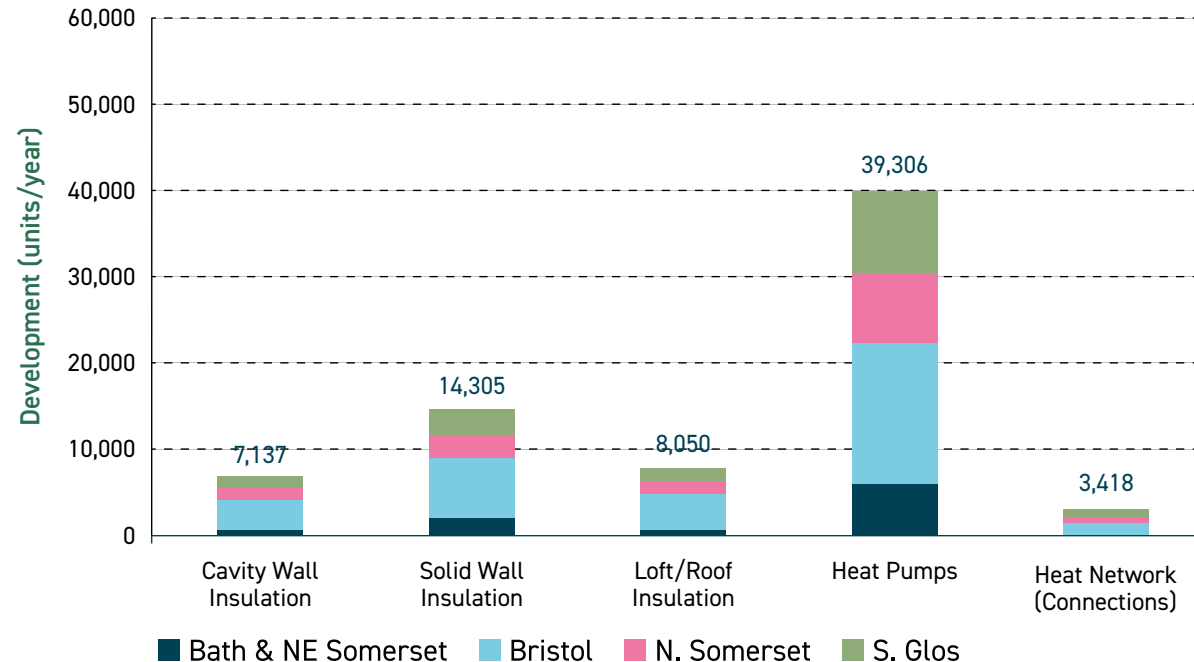
and 8,000 loft or roof insulation^{vi}. And a further 8,400 non-domestic buildings across the region will need improvements to insulation as well.

To **decarbonise heating**, heat pumps or connections to heat networks will be needed for over 250,000 homes and 8,000 non-domestic properties. This will require 40,000 installations per year. This is a significant shift: that rate exceeds the current rate of heat pump

installations in the whole of the UK (30,000 per year)^{vii}.

The costs of retrofitting homes will be high, and beyond the capacity of the public sector to fund alone. Public policy will need to stimulate private investment, to share the costs. By illustration, the cost of increasing insulation and installing heat pumps varies significantly, depending on the age and construction of the building.

Figure 4: Yearly average domestic retrofit installations required in the West of England to meet net zero by 2030^{viii}, Ecuity Economics



UNDERSTANDING THE SCALE OF THE CHALLENGE continued

Many homes in our region have heritage or conservation status that will affect the measures that are appropriate. A conservative estimate would be for an average cost of around £20,000 for a range of insulation measures and installation of a heat pump^{ix}. Applying this figure to 250,000 homes needing measures gives a rough estimate of a total cost of £5bn. Costs could rise if supply chain bottlenecks are encountered as the rate of installations increases.

Buildings and developments have a significant impact on the natural environment, impacting the quality and quantity of habitats such as woodland, wetland, grasslands and our water courses. The Environment Act will introduce the requirement for all new developments to show how they can deliver 10% Biodiversity Net Gain, with the aim of leaving the natural environment in a better state than before. This requirement will come into effect from Winter 2023 and should have a positive impact across the region in terms of delivering our nature recovery objectives. However, it will place an increase demand for skills and jobs within ecological services sector in order to meet the demands of delivering Biodiversity Net Gain requirements.

UNDERSTANDING THE SCALE OF THE CHALLENGE continued

The Challenge of delivering Nature Recovery

In common with other parts of the country, wildlife and the natural environment have come under increasing pressure in the West of England. As an example, numbers of once common songbirds like swifts and starlings have dropped by more than 96%.

A functioning and resilient natural environment is vital to our society, economy, and wellbeing, and will also be crucial to mitigating the effects of climate change. Half of the world's GDP is moderately or highly dependent on nature, and 75% of the crop types grown by humans require pollination^x.

Containing both urban and rural areas, the region provides a network of natural spaces for residents and wildlife. However, we need to expand and better connect these areas and improve their quality as natural habitats to enable nature's recovery, as well as improving access. Currently, the region's natural spaces include:

- 5,583 hectares of accessible green space (4% of the region's area)^{xi}
- 11,657 ha of woodland (9% of the area)^{xii}
- 100km² of water and wetland (8% of the area)

- 366,000 people (32% of the population) have access to substantial green space within 300 metres of home^{xiii}.

The West of England Nature Partnership has mapped the region's Nature Recovery Networks to identify the best opportunities to deliver improvements^{xiv}.

Wildlife habitats across the West of England need to be strengthened to promote the recovery of nature. Nationally, only 28% of habitats of European importance were in a favourable or improving condition in 2019 – down from 53% in 2007^{xv}. Key species are much less abundant than in the past: down to 39% of their 1970 levels nationally by 2019. And abundance of farmland birds has declined by 55% from 1970-2019, and butterflies by 22% since 1976, across the UK.

The RSPB State of Nature Report for the UK set out that this harm is ongoing^{xvi}.

- 41% of species assessed decreased from 2009 to 2019;
- 15% of all wildlife in the UK is threatened with extinction;
- 2% are already extinct;
- Butterflies are down 16% since the 1970s and familiar birds like the house sparrow have reduced by more than half in the last 40 years.

These are the results of long-term damage to ecosystems and habitats, and they will need a comprehensive response to improve the quality, quantity and connectivity of our natural environment. The requirement to develop Local Nature Recovery Strategies, deliver Biodiversity Net Gain and existing work across our networks such as the West of England Nature Partnership will help to address some of this challenge, but we will need to do more to fully address the damage.

UNDERSTANDING THE SCALE OF THE CHALLENGE continued

The Challenge for Low Carbon Businesses

Cutting emissions: Businesses need to fully decarbonise their operations, ranging from heating and powering their buildings to logistics and production processes. Businesses and organisations in the West of England emitted 1,290kt of CO₂ in 2019. These emissions have fallen 40% in the past 10 years, but a significant challenge remains in removing the remaining emissions.

Industrial firms produced 43% of these emissions; commercial businesses 37%, the public sector 16%, and agriculture 4%. Emissions were split roughly evenly between electricity (42%) and gas (35%), with industrial firms also using other fuels (18% of the total). The prevalence of gas and other fuels demonstrates that decarbonising the electricity grid will not solve the problem alone, and that substantial changes will be needed by businesses in how they power and heat their buildings and business processes. Furthermore, firms will need to manage their supply chains to minimise 'imported' emissions embedded in goods and services they import from abroad.

Green jobs: Achieving net zero will need people with new skills and in new jobs. The West of England will need over 45,000 green jobs by 2030. This is made up of jobs in manufacturing

(10%), construction and installation (52%), and operation and maintenance (38%)^{xvii}. Evidence from our unitary authorities and key stakeholders also shows that demand for jobs within the ecological sector is likely to grow with the increased focus on delivering Biodiversity Net Gain.

Employment and skills provision will need to increase to meet this requirement. Around 6,250 people are estimated to currently work in low carbon jobs in the West of England.

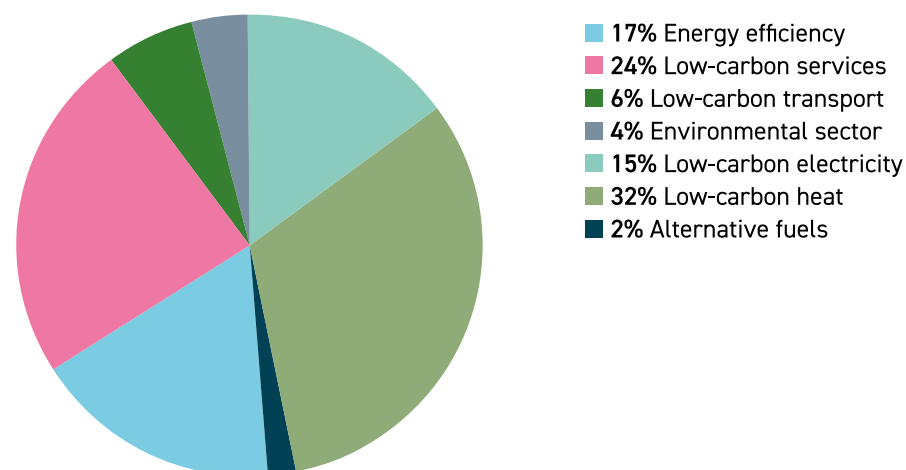
Green business opportunities will also emerge. New low-carbon products and services will require innovation, and the West of England's businesses are well placed to take advantage of these growth areas. The low carbon economy is

predicted to grow by 11% per year up to 2030, creating around one million jobs nationally^{xviii}. Areas of green sector growth include:

- Low carbon electricity products and services, which could grow by 5-7% per year to 2030;
- Products and services for low emission vehicles could grow by 20-30% per year to 2030; and
- Low carbon financial services could grow at over 10% per year to 2030.

As set out above, this could create 45,000 green job opportunities by 2030 in the West of England. And these businesses could lift the region's low carbon GVA from £760m in 2020 to £3.7bn per year by 2030^{xix}.

Figure 5: Forecast low carbon job opportunities by sector, 2030, Ecuity



UNDERSTANDING THE SCALE OF THE CHALLENGE continued

The Challenge for Renewable Energy

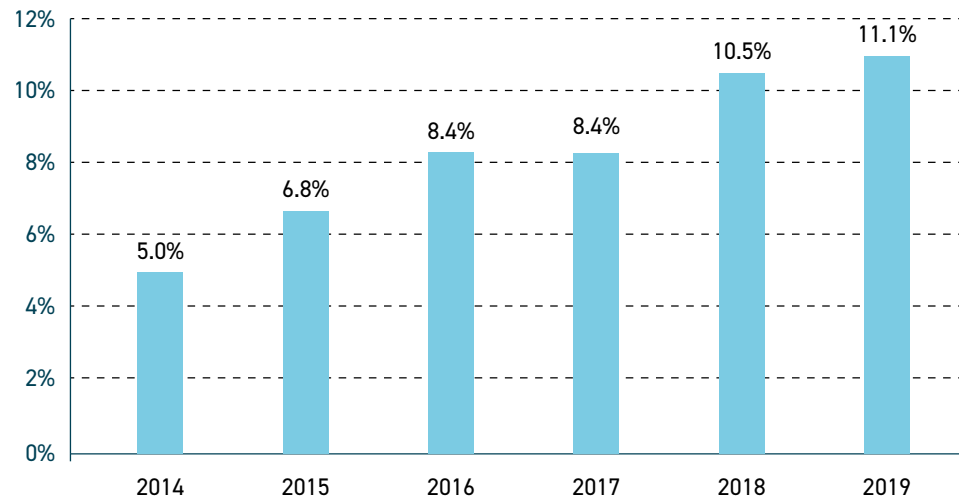
To reach net zero, we will need fully low-carbon electricity. In 2020, national grid electricity was 59% low carbon, comprising 16% from nuclear and 43% renewable^{xx}. The Government is aiming for a fully decarbonised electricity system by 2035, due to grid inflexibility to maintain supply and demand, integrating renewables is still a major challenge.

Within the region, renewable electricity generation has more than doubled since 2014, yet still only provides 11% of the region's electricity consumption.

Photovoltaics (PV) are the largest source regionally, providing almost half (44%) of locally-generated renewables, followed by onshore wind (20%)^{xxi}.

Figure 6: The share of our electricity consumption generated from renewable sources within the region has increased significantly

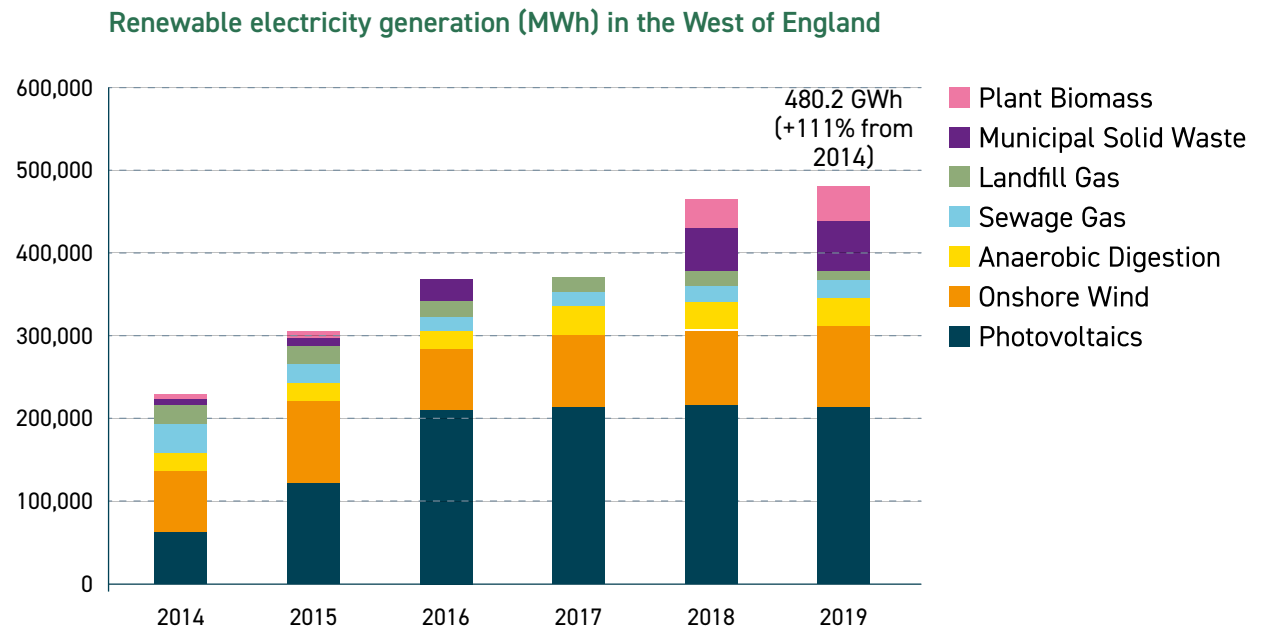
Share of electricity consumption generated from renewable sources within the West of England



UNDERSTANDING THE SCALE OF THE CHALLENGE continued

Community renewable energy schemes will play an important role in increasing generation within the region, and will need to be accelerated. There are currently 18,600 sites with photovoltaic generation across the West of England. Nationally, community schemes generated less than 1% of renewable electricity, but they have a significant role in promoting engagement and support for new renewables developments^{xxii}.

Figure 7: Photovoltaics and wind turbines are the largest sources of renewable generation within the region



UNDERSTANDING THE SCALE OF THE CHALLENGE continued

What does this evidence mean for our Strategy and Action Plan?

The evidence for the region is clear. We are not on track to meet our 2030 objectives for the climate and ecological emergencies.

Our regional emissions and the scale of damage to the natural environment are still too high and are not projected to reduce or recover quickly enough. If we do not take action now to change this pathway, we will continue the pattern of doing irreversible damage to the region, putting the lives and businesses of our residents at risk.

This document provides the strategic framework and long term vision for us to achieve our 2030 objectives. The actions set out provide the first steps in meeting these ambitions and enabling the changes that we need to see across the region. However, we are clear that these alone will not be sufficient for us to match our targets.

As a region, we will need to work collectively to take the big decisions, accepting that there will need to be trade-offs in the way we invest our money and live and work within the region to meet our objectives. Addressing the climate and ecological emergencies will be the greatest challenge of our times, but one that we cannot afford to get wrong.

OUR ACTION PLAN



OUR STRATEGY FOR:

LOW CARBON TRANSPORT

LOW CARBON BUILDINGS AND PLACES

NATURE RECOVERY

LOW CARBON BUSINESS

RENEWABLE ENERGY

OUR ACTION PLAN

Working with partners across the region (including our Unitary Authority partners and the region’s Climate Action Panel) we have identified five core areas that we must focus on to achieve our ambitions. Whilst these areas have been separated for ease of reference within this plan, the actions are often interlinked, and the impacts will be shared between them all.

Our action plan sets out what we will do to make progress towards net zero in each of these five priority areas.

In each section of the action plan, we set out:

Our challenge	Setting out the challenge we must address in relation to this priority
Our focus	Highlighting the areas we have agreed with partners we should focus on to meet that challenge
Action across our region	Highlighting the action being taken by our Unitary Authority partners on each priority
Our call to Government	Setting out what we will call on Government to do to enable swifter progress

- 1

Immediate action we will take in 2022-23
- 2

Medium-term actions we will take or develop with our partners in 2024-28
- 3

Longer-term ambitions that will be further developed in future iterations of our climate and ecological emergency action plan

LOW CARBON TRANSPORT

STRATEGIC OBJECTIVE: Transport CO₂ emissions are Net Zero by 2030

The Challenge	Our focus How we will deliver the objective:	Our actions will be complemented by UA action such as:	Our ask of government:
<p>Emissions from transport, including freight, is one of the largest contributors to greenhouse gas and CO₂ emissions [around 44%] in the region and it is not reducing in line with other emissions.</p> <p>Furthermore, population growth means that car trips are expected to increase. To deliver the scale of change needed on transport, significant modal shift from private cars is vital, with a 40% reduction in car mileage required to meet our 2030 objectives.</p>	<ul style="list-style-type: none"> • Reducing the number of car trips and freight journeys, promoting mode shift to sustainable alternatives • Increasing cycling and walking • Increasing uptake of low carbon vehicles incl electric vehicles • Increasing the uptake of public transport 	<ul style="list-style-type: none"> • Electrification and decarbonisation of their fleet vehicles • Delivery of liveable neighbourhoods • Implementing clean air zones e.g. Bath and Bristol • Delivery of local walking, wheeling & cycling programmes 	<ul style="list-style-type: none"> • Change national policies on demand management including pay per mile options to make them fairer and more easily implemented • Increased funding to support rural bus routes to reduce the number of car trips • Continue support for walking & cycling programmes • Completion of electrification of the rail network in the region • Further devolution of transport powers to enable more local strategic decision making

LOW CARBON TRANSPORT continued

Strategic Objective: Transport CO₂ emissions are Net Zero by 2030

NEXT YEAR WE WILL:	Anticipated timescale
Reduce number of car trips and freight journeys by:	
Reviewing our transport major scheme programme to confirm how our schemes perform in terms of their carbon impact.	Develop for the Oct 2022 Committee
Increasing the pace of transport decarbonisation by progressing demand management measures including Travel Planning, marketing, parking policy, and a package of Workplace Parking Levies and/or congestion charging areas (we will do this by updating JLTP4)	Oct 2022
Developing detailed plans for a liveable neighbourhood in Bristol and confirming areas to develop liveable neighbourhoods in B&NES and South Gloucestershire with a view to rolling out a programme of delivery across the region to reduce reliance on cars.	March 2023
Increase cycling & walking by:	
Delivering 14 cycling and walking schemes as identified in the cycling & walking strategy and work with partners to start to design schemes and proposals to submit to active travel fund (round three).	Deliver throughout 2022/23
Launching e-Bike offer within Bristol, with a view to expanding across the region	Deliver throughout 2022/23
Increase uptake of public transport by:	
Delivering tap on tap off transport ticketing, offering a simpler public transport fares system which provides better value for money through fare capping in place for adult single trips and developing an integrated ticketing plan to provide a single consistent offer to customers across the region.	Dec 2022
Improving frequency and accessibility of rail services through commencement of key infrastructure delivery including MetroWest Phase 1a and Phase 2 and commencing CRSTS delivery	April 2023
Improving frequency and accessibility of bus services through commencement of key infrastructure delivery including commitments made in the Bus Service Improvement Plans and transport hubs in Future Transport Zones	Deliver throughout 2022/23

LOW CARBON TRANSPORT continued

NEXT YEAR WE WILL:	Anticipated timescale
Increase uptake of public transport by:	
Building better bus shelters, enabling green roofs and investing in green areas around stops including commissioning at least 15 new green roof bus stops and designing new standards to improve quality of wildlife habitats and buses and the surrounding verges	March 2023
Launching new transport brand to build a consistent brand across the region to increase awareness of public transport capabilities and provision and build trust amongst users	Sept 2022
Launching public consultation on a new public transport system within the region to prioritise deliverable routes and modes	Autumn 2022
Increase uptake of low carbon vehicles including electric vehicles by:	
Increasing the amount of electric charge infrastructure in the region by investing £5m in a range of new projects (informed by EV charging strategy & feasibility work) and accessing government funds through £500m EV Charging Strategy to enhance our work where possible	Initial Business Case for December 2022 committee

LOW CARBON TRANSPORT continued

IN THE MEDIUM TERM WE WILL:	OVER THE LONG TERM, WE WILL:
Medium Term Actions 2024-2028	Long Term Vision 2028-2030
Open six new railway stations by 2025/26, increasing access to rail for more people across the region	Create a network of 15 minute liveable neighbourhoods that will contribute to the longer-term reduction in emissions
Increase use of rail by 1,300,000 new rail journeys per year by 2025/26 developing our regional rail network (delivering measures outlined in our CRSTS programme and Rail Delivery Plan)	Achieve a significant reduction in car usage through the successful implementation of demand management
Increasing bus travel by 500,000 new bus journeys per year by 2025/6 through the development of our regional bus network in the delivery measures outlined in our CRSTS programme and Bus Service improvement Plan	Improve our sustainable public transport system, offering an affordable, convenient and easy to use alternative to the car for all our rural and urban residents
Limit the increase in emissions of new development by designing and implementing planning policy to deliver viable sustainable transport offerings.	Support industry partners to develop future transport fuels or energy systems for transport including the aviation industry
Work with Unitary Authorities to design and implement demand management measures within the region	Have a road network that makes space on roads for cyclists, walkers and wheelers as standard.
Work with government and Unitary Authorities to build a case for further devolution to enable more strategic decisions to be made on public transport in the region.	Work with government and Unitary Authorities to build a case for further devolution to enable more strategic decisions to be made on public transport in the region.
Expand car-share / car club services to offer services across the region, working with Unitary Authorities and private operators to shape and deliver	

LOW CARBON TRANSPORT continued

Low Carbon Transport Case Study

Delivering bus service improvements – metrobus and the Greater Bristol Bus Network

The region has a strong track record of success in delivering improvements to bus services which have led to increases in passenger numbers. Over the last 15 years we have worked together to improve bus services over the region with the introduction of projects such as the Greater Bristol Bus Network, Bath Transport Package and metrobus. Representing an investment exceeding £300m, following the introduction of these schemes the region saw an increase in use of 42% until 2017, and a further increase of 6% following the introduction of metrobus, bucking the national trend.

The West of England councils working in partnership with bus operators, brought several key corridors up to showcase and metrobus standards with:

- Over 150 new buses offering higher service frequencies including biomethane-fuelled metrobus services.
- Around 1,000 improved bus stops including new shelters, level access and more than 300 new real time information displays.
- Significant new bus priorities, including a new bus lane and bus-only junction on the M32.
- Improvements to pedestrian and cycle access and safety.

LOW CARBON BUILDINGS AND PLACES

STRATEGIC OBJECTIVE: Retrofit 250,000 homes and 8,000 commercial properties by 2030 to net zero standards. Carbon neutral developments in New Homes Standard

The Challenge	Our focus How we will deliver the objective:	Our actions will be complemented by UA action such as:	Our ask of government:
<p>Emissions from heat is one of the largest contributors to greenhouse gas and CO₂ emissions [around 35%] in the region. Most of our heat is supplied by gas.</p> <p>Retrofitting and improving the energy efficiency in buildings and homes is highly complex as a result of different levels of ownership, building types including commercial and industrial buildings and responsibility for property maintenance</p> <p>Population growth, and government requirements, mean an increase in housing. With no action this will lead to an increase in emissions unless they are fitted with low carbon or carbon neutral heating systems and are built to high energy efficiency standards.</p> <p>New developments and Buildings can also have a significant impact on the natural environment. From Winter 2023, all new developments will be required to deliver 10% Biodiversity Net Gain.</p>	<ul style="list-style-type: none"> • How we will deliver the objective • Increase the number of new carbon neutral homes and buildings being developed that deliver Biodiversity Net Gain • Increase the energy performance of homes and buildings across the region • Reduce reliance on fossil fuel based heating systems 	<ul style="list-style-type: none"> • Our actions will be complemented by UA action such as: • Revising local plans to support and accelerate net zero developments, biodiversity net gain and the use of land for the generation of renewable energy • Delivering retrofit programmes to support low income households including Green Homes Grant, Social Housing Decarbonisation Warm & Well initiatives • Delivering low carbon & new energy heating systems e.g. supporting skills training and apprenticeship training opportunities within construction and retrofit sector through planning requirements and procurement 	<p>Our ask of government:</p> <ul style="list-style-type: none"> • Provide policy consistency for the sector through a national retrofit strategy • Provide long term, sustainable funding for large scale retrofit programmes, including our Retrofit Accelerator • Instil confidence in the retrofit supply chain by establishing and maintaining clear quality accreditation standards for retrofit installers • Change National Planning Policy Frameworks to support the development of carbon neutral buildings and the use of land for renewable energy generation

LOW CARBON BUILDINGS AND PLACES continued

STRATEGIC OBJECTIVE: Retrofit 250,000 homes and 8,000 commercial properties by 2030 to net zero standards. Carbon neutral developments in New Homes Standard

NEXT YEAR WE WILL:	Anticipated timescale
Increase the energy performance of homes and buildings across the region by:	
Increasing retrofit across the region. Working in partnership to develop and launch the regional Retrofit Accelerator to increase the scale and pace of retrofit within the region by creating a hub for homeowners to access information on retrofit and increase the number of accredited surveyors, co-ordinators and designers	Summer 2022
Developing further retrofit interventions, building on the retrofit accelerator, and focussing on development of supply chain and skills (developing a business case for this to access funding from the Green Recovery Fund)	Autumn/Winter 2022
Delivering the Low Carbon Challenge Fund's Innovative Housing Retrofit Scheme to retrofit 25 hard-to-treat properties within the region, acting as a demonstrator for new technologies and to support the wider roll out of retrofit	March 2023
Continue to grow delivery of the Low Carbon Challenge Fund Green Business Grants to improve energy efficiency of commercial and industrial properties (developing a business case for this to access funding from the Green Recovery Fund)	March 2023
Delivering training programmes to increase the number of retrofit installers within the region including construction skills	Throughout 2022/23
Working with South West Net Zero Hub to deliver retrofitting schemes to improve energy efficiency to homes in fuel poverty including Green Homes Grant	Throughout 2022/23
Increase the number of new carbon neutral homes and buildings being developed that deliver Biodiversity Net Gain by:	
Requiring increased development of low emission and net zero new build homes standards through our planning policy	Consultation in 2022, adoption in 2023

LOW CARBON BUILDINGS AND PLACES continued

NEXT YEAR WE WILL:	Anticipated timescale
Increase the number of new carbon neutral homes and buildings being developed that deliver Biodiversity Net Gain by:	
Developing a long-term strategic plan setting out where homes, jobs and infrastructure are to support low emissions developments that are linked with biodiversity objectives including increasing wildlife abundance and new habitat creation.	Consultation in 2022, adoption in 2023
Use planning policy to ensure delivery of minimum 10% Biodiversity Net Gain across new developments	Throughout 2022/23
Reduce reliance on fossil-fuel based heating by:	
Using planning policy to develop and implement an energy hierarchy for preferred energy systems to influence new developments and help shift from fossil fuel heating	Consultation in 2022, adoption in 2023
Releasing the regional Placemaking Charter, setting out the quality standards expected in the region for developers, architects and house builders.	Summer 2022

LOW CARBON BUILDINGS AND PLACES continued

IN THE MEDIUM TERM WE WILL:	OVER THE LONG TERM, WE WILL:
Medium Term Actions 2024-2028	Long Term Vision 2028-2030
Support new low emissions developments that maximize the use of onsite renewable heat and energy are linked with biodiversity objectives including increasing wildlife abundance and new habitat creation (through local and regional planning policy)	Increase the scale and pace of retrofit within the region to ensure that the majority of properties within the region achieving EPC C as a minimum, as a result of local interventions, improved national policy and access to funding.
Support retrofitting of over 1,000 homes through the Retrofit Accelerator programme and supporting supply chain and skills development	Only build carbon neutral new properties and buildings.
CA and UA using their unique position as strategic planning and housing authorities to raise awareness and understanding of retrofit options for various building types;	Deliver a widescale transition towards non-fossil fuel reliant heating systems across all buildings within the region.
Develop a range of sustainable funding mechanisms for retrofit and the transition to non-fossil fuel reliant heating within the region, including securing private and government funding.	Deliver a minimum of 10% biodiversity net gain to increase wildlife abundance and protect green spaces across all new developments and infrastructure projects in the region.
Stimulate the market for non-fossil fuel heating systems encouraging the transition from gas and oil boilers through encouraging behaviour change, the innovation of new technology, and improving supply chain capacity for new energy systems.	
Increase the number of Energy Performance Certificates for both housing and commercial buildings in the region, up from the 44% figure to raise awareness of energy performance and the improvement measures required to retrofit to achieve 'grade C' to help reduce emissions from buildings.	

LOW CARBON BUILDINGS AND PLACES continued

Low Carbon Buildings & Places Case Study

Delivering developments with robust employment and skills plans-

On Site Bristol is a unique training provider delivering high quality construction apprenticeships with Bristol City Council and for local employers. These construction training apprenticeships (with 220 SMEs) have enabled job matching with job seekers. There is preparation to launch the 'Building Bristol' scheme which requires all major developments to have robust employment and skills plan utilising frameworks such as TOMS to increase the opportunity for apprenticeships and green jobs in the area.

NATURE RECOVERY

STRATEGIC OBJECTIVE: Wildlife and the natural environment are in recovery, with their decline halted

The Challenge	Our focus How we will deliver the objective:	Our actions will be complemented by UA action such as:	Our ask of government:
<p>Rapidly changing climate and habitat degradation</p> <p>Protecting and enhancing the natural environment of the West of England including key priority habitats such as woodland, wetland, grasslands is integral in maintaining the ecosystem services.</p> <p>A lack of accessible green space has broad impacts including on community health and wellbeing and climate resilience.</p>	<ul style="list-style-type: none"> • Improve the quality and connectivity of existing spaces for nature and wildlife • Create new spaces for nature and wildlife • Enable business, other stakeholders and residents to contribute to nature's recovery including unlocking investment in nature-based solutions 	<ul style="list-style-type: none"> • Reduction in use of pesticides and effective management of public spaces to allow nature recovery and rewilding • Tree-planting and protection schemes • Local plans and planning policy to create new spaces for nature and wildlife and protect existing spaces • Investment in strategic projects to restore nature in line with existing strategies e.g. joint Green Infrastructure, Nature Recovery network, Tree and Woodland 	<ul style="list-style-type: none"> • Provide capacity funding to produce Nature Recovery Strategies and their ongoing delivery • Ensure sufficient funding is available to delivery Biodiversity Net Gain • Establish training routes and frameworks to support anticipated increase in need for ecologists and nature recovery experts • Increase funding available for the delivery of large scale projects

NATURE RECOVERY continued

STRATEGIC OBJECTIVE: Wildlife and the natural environment are in recovery, with their decline halted

NEXT YEAR WE WILL:	Anticipated timescale
Improve the quality and connectivity of existing spaces for nature and wildlife by:	
Improving existing natural spaces including Common Connections, Bath Riverline and Chew Valley Lake (Delivering Green Infrastructure Strategy projects)	Throughout 2022/23
Developing a Local Nature Recovery Strategy that provides a coherent regional vision for nature's recovery, building on the West of England Nature Recovery Network and helps direct investment in the natural environment into the most effective areas	By March 2023 (subject to confirmation of government timelines)
Opening Green Recovery Fund for projects to create new habitats and improve quality and connectivity of existing spaces for nature	Autumn 2022
Planting more trees and create habitat spaces along strategic corridors (incl. CRSTS and strategic nature recovery networks) and improved bus shelters (as part of replacement programme)	Throughout 2022/23
Working with partners (incl. Natural England) to develop a monitoring framework for the natural environment in the West of England to enable us to measure progress towards our ambitions, including the possibility to use a wildlife index to measure abundance and diversity of wildlife amongst the current ecological network	In line with nature recovery strategy
Create new spaces for nature and wildlife by:	
Launching the Community Pollinator Fund to increase the number and quality of habitats for pollinators and bees across the region	May 2022
Using planning policy to set out where homes, jobs and infrastructure are needed linking in with the biodiversity and ecology objectives, including those set out in Joint Green Infrastructure Strategy, Environment Act, Tree and Woodland Strategy, including the delivery of at least 10% Biodiversity Net Gain	Formal consultation in 2022, adopted 2023

NATURE RECOVERY continued

NEXT YEAR WE WILL:	Anticipated timescale
Ensuring that transport and planning projects delivered by the Combined Authority positively contribute towards nature's net recovery, including delivering at least 10% Biodiversity Net Gain	Throughout 2022/23
Supporting WENP and the Forest of Avon Trust in accelerating action to deliver the ambitions of the Forest of Avon Plan and access government funds such as Woodland Creation Accelerator Fund	Throughout 2022/23
Enable business, other stakeholders and residents to contribute to nature's recovery, including unlocking investment in nature-based solutions by:	
Launching the West of England Placemaking Charter for creating high quality, biodiverse places that support access to nature and encourage health and wellbeing	May 2022
Working with business to protect pollinators and create green spaces by holding first regional Bee Bold Day and creating a targeted business campaign around this, including reducing pesticide use	May 2022
Supporting and promoting UA and partner organisations (e.g. WENP, Eat Local) engagement campaigns to raise awareness of and engagement with the natural environment, and encourage conservation volunteering and pro-environmental behaviours	Throughout 2022/23
Working with partners to support the development of platforms that enable businesses to invest in the natural environment (e.g. Bristol and Avon Catchment Market)	Throughout 2022/23
Using regional skills programmes including Skills bootcamps and adult education budget to build skills required for ecology and natural environment sector.	Throughout 2022/23

NATURE RECOVERY continued

IN THE MEDIUM TERM WE WILL:	OVER THE LONG TERM, WE WILL:
Medium Term Actions 2024-2028	Long Term Vision 2028-2030
All Combined Authority investments in infrastructure to deliver aspects of nature protection and recovery including minimum 10% Biodiversity Net Gain	Support the ambitions of the West of England Nature Partnership to: <ul style="list-style-type: none"> • Increase the abundance of wildlife from 2020 levels by 30% by 2030 • Increase our semi-natural broadleaved woodland cover by 2500ha (from 8,000 to 10,500 ha, or by 31%) • In addition to woodland, create 2000 hectares of wildlife-rich habitat outside the protected site network • Close at least 40% of the Nature Recovery Network connectivity gaps through the creation of new habitat • Ensure all water catchments are in at least moderate ecological status, with half in good ecological status by 2030 • Ensure 70% of designated sites are in favourable condition by 2030.
Delivery of over 375ha of improved natural green spaces by 2025/6	
Provide strategic support to develop regional relevant skills required for nature recovery	
Lead on work with industry and commerce to recognise economic reliance on nature	
Develop and implement planning policy to deliver a coordinated strategy on climate change adaptation and mitigation, including the management of natural capital and ecosystem services	
Use the Green Recovery Fund to support upscaling of measures to increase the abundance and distribution of species and quality and quantity of habitats.	

NATURE RECOVERY continued

Nature Recovery Case Study

Avonmouth Severnside Enterprise Area (ASEA) A joint £80m project by Bristol City Council, South Gloucestershire Council and the Environment Agency is being constructed to protect the ASEA, which includes 2,500 homes, against flooding. The Severn Estuary is an important ecological area.

The scheme will create at least 80 hectares of new wetland habitats around Hallen Marsh and Northwick for internationally important birdlife.

LOW CARBON BUSINESS

STRATEGIC OBJECTIVE: Support businesses and individuals to meet our 2030 objectives and benefit from a growing green economy

The Challenge	Our focus How we will deliver the objective:	Our actions will be complemented by UA action such as:	Our ask of government:
<p>The UK Government estimates that the green economy could grow 11% each year, significantly faster than the projected growth of the economy.</p> <p>The physical risk of climate change e.g. flooding, heatwaves, wildfires, could have a detrimental impact on businesses, their supply chains and workforce.</p> <p>The region is currently missing the skills required to deliver the 2030 net zero ambition.</p>	<ul style="list-style-type: none"> • Support businesses to transition to low emission, sustainable practices and adapt for climate resilience • Prepare business for emerging green economies • Support local people to access green jobs and bring 23,000 green jobs across the region 	<ul style="list-style-type: none"> • Providing information advice and guidance to businesses on how to decarbonise their operations • Supporting low carbon industries (incl. retrofit) to grow through business support and providing training opportunities to ensure quality labour supply 	<ul style="list-style-type: none"> • Continue to provide funding for Growth Hub Net Zero Advisors to encourage businesses to decarbonise • Encourage all businesses to make a climate resilience plan, to ensure that they understand their risks and liability against a changing climate to help ensure business continuity • Launch further innovation funding rounds to promote low carbon goods and services • Work with Metro Mayor to create a trade campaign focussed on increasing investment and trade in low carbon goods and services in the west of England

LOW CARBON BUSINESS continued

STRATEGIC OBJECTIVE: Support businesses and individuals to meet our 2030 objectives and benefit from a growing green economy

NEXT YEAR WE WILL:	Anticipated timescale
Support businesses to transition to low emission, sustainable practices and adapt for climate resilience by:	
Delivering 400+ free carbon surveys and funding 200+ small & medium enterprises to make energy saving improvements to their buildings and equipment will be completed for SMEs as part of the Green Business Grant Scheme	By March 2023
Developing and implementing a carbon literacy programme for businesses to improve their understanding of climate and ecological emergencies and actions they can take to help address it	By March 2023
Using the Growth Hub Net Zero Cluster to support and promote low carbon business practices with our Net zero enterprise advisers incl. developing a regional communications campaign to business and industry – measure, monitor and reduce emissions, prepare for the local impacts of a changing climate, protect, and restore nature.	Throughout 2022/23
Continue to grow delivery of Low Carbon Challenge Fund Green Business Grants to improve energy efficiency of commercial and industrial properties (developing a business case for this to access funding from the Green Recovery Fund)	March 2023
Ensure local people to access green jobs and bring 23,000 green jobs across the region by:	
Delivering careers advice to school aged children through the Careers Hub to encourage them into careers to support key skills needed to support our 2030 ambitions, including ecology	By March 2023
Using Workforce for the Future to deliver business support to 220 SMEs to understand what skills / knowledge they need in place to meet the 2030 ambitions and support the growth of modern methods of construction	Throughout 2022/23
Revising the regional skills and employment plan to focus on green job growth.	By March 2023

LOW CARBON BUSINESS continued

NEXT YEAR WE WILL:	Anticipated timescale
Prepare business for emerging green economies by:	
Helping key sectors (incl. manufacturing & engineering) to innovate new sustainable technologies and supply chains via a range of projects, including through DETI and Made Smarter projects	Throughout 2022/23
Encouraging innovation in low carbon services, goods and technologies by awarding 50 new R&D grants to SMEs and 15 new products, processes or services (via Business Innovation Fund)	By March 2023
Revising our regional procurement strategy to maximise the use of social value weighting to procure locally sourced goods and services.	Sept 2022
Using Invest Bristol & Bath to create a campaign to attract new green businesses to the region	Throughout 2022/23

LOW CARBON BUSINESS continued

IN THE MEDIUM TERM WE WILL:	OVER THE LONG TERM, WE WILL:
Medium Term Actions 2024-2028	Long Term Vision 2028-2030
Deliver multimillion-pound infrastructure projects to support our 2030 objectives and grow the economy including flood defences to protect and enable 19,400 jobs and £3.8bn of GVA.	Enable businesses to develop new sustainable products and services that support the delivery of renewables, retrofit, increase circularity, protect and restore nature.
Develop programmes to re-skill existing trades/ industries (especially fossil fuel reliant) implemented by 2025.	Ensure that the region has the workforce and skills to deliver our 2030 objectives by providing training and reskilling opportunities to new green jobs, particularly targeting fossil-fuel reliant sectors and engineering.
Update the Green Skills Report by 2025 to identify new green skills gaps and ensure that skills provision is aligned to industry needs including renewable energy, biodiversity and ecology.	Prepare our regional economy for a lack of energy security and local climate risks – including key regional infrastructure such as transport/ buildings/IT infrastructure, health care, food, water.
Work with all schools and colleges within the region to green their curriculums and ensure work experience and training opportunities aligned with identified green skills gaps.	
Deliver Digital Transformation Programme by April 2025 to support green skills development and business growth through the improvement of digital infrastructure and capacity within the region.	

LOW CARBON BUSINESS continued

Low Carbon Business Case Study

Low carbon challenge fund: Bascom Ltd

With a Green Business Grant, this printer and mailing house replaced an inefficient air compressor with a new unit and automatic controls.

The project cost £7,745 and was awarded a £3,098 grant. The new equipment will reduce energy use by 10%, meaning an annual reduction of 3 tonnes of greenhouse gases and annual saving the business £830 on energy bills.

RENEWABLE ENERGY

STRATEGIC OBJECTIVE: Decarbonise the energy system and increase local renewable energy production

The Challenge	Our focus How we will deliver the objective:	Our actions will be complemented by UA action such as:	Our ask of government:
<p>Renewable energy generation in the region has increased by 75% in five years, mainly from photovoltaics and wind, but still represents a relatively low proportion of energy use [BEIS 2021].</p> <p>Average domestic fuel bills have more than doubled in the last ten years pushing households into fuel poverty.</p> <p>The National Grid will decarbonise by 2050. But decarbonising mains electricity quickly is crucial in order to realise the benefits of electric vehicles, heat pump electric heating, etc.</p>	<ul style="list-style-type: none"> • Increase renewable energy generation across the region, including through local, community focussed generation • Work in partnership to develop new smart approaches to the decarbonisation, storage, management and distribution of energy 	<ul style="list-style-type: none"> • Using local planning policy and development funds so support renewable energy and community energy generation e.g. Bath & West Community Energy, Bristol Energy cooperative, City Leap 	<ul style="list-style-type: none"> • Allow innovation within regulation of grid to test and trial new approaches to maximise smart energy use and renewable energy generation and storage • Open further innovation funds to support the mainstreaming of new energy systems including hydrogen, tidal, nuclear fusion and battery storage • Continue funding for local Net Zero Hubs to provide technical support and capacity for local energy generation systems • Create funding schemes to derisk community energy generation schemes, providing loans or grants for development costs

RENEWABLE ENERGY continued

STRATEGIC OBJECTIVE: Decarbonise the energy system and increase local renewable energy production

NEXT YEAR WE WILL:	Anticipated timescale
Increase renewable energy generation across the region, including through local, community focussed generation by:	
Using Green Recovery Fund to stimulate further renewable energy generation and capacity, including securing ongoing funding for Local Energy Scheme	From April 2022
Undertaking a feasibility study to de-risk the development stage of community energy, including creating a revolving fund	Sept 2022
Delivering Solar Together to increase number of Solar Panels in the region and reviewing its impact to decide if we will participate in a second round	September 2022
Delivering Innovative Local Energy Scheme (round 2) to support the implementation of innovative renewable energy projects of between 50kW and 5MW, that also deliver community benefits	From April 2022
Encourage development of renewable energy schemes across the region (working with the South West Net Zero Hub to allocate funding and advice focussed on proven cheaper technologies e.g. solar, wind)	Throughout 2022/23
Continue to develop and fund the Low Carbon Challenge Fund's Innovative Local Energy Scheme to support renewable energy generation	Throughout 2022/23
Work in partnership to develop new smart approaches to the decarbonisation, storage, management and distribution of energy by:	
Ensuring new developments gas & electricity requirements are accurately included energy planning building on North Fringe & SW Bristol development plans (EPIC project)	Throughout 2022/23
Increasing energy innovation funding coming to the region, working with partners such as Western Power	By 2023
Developing a long-term strategic plan setting out where homes, jobs and infrastructure are to support low emissions development that they are linked with renewable energy generation and storage ambitions	Throughout 2022/23

RENEWABLE ENERGY continued

IN THE MEDIUM TERM WE WILL:	OVER THE LONG TERM, WE WILL:
Medium Term Actions 2024-2028	Long Term Vision 2028-2030
We will work with Western Power Distribution to develop proposals to trial a new flexibility solution in the West of England and enable new approaches to develop lower cost alternatives for grid reinforcement	Reduce reliance on the wholesale energy market, increasing self-sufficiency through the generation of more locally supplied renewable energy
Conduct a feasibility study/options analysis into ways of financing local renewables, including a tariff by 2025	Increase community energy to 10% of locally generated renewables
Explore the feasibility of other energy generation options such as tidal energy and hydrogen power by 2025 and develop business cases to implement them	Implement a local renewables tariff, if proven feasible
Increase the amount of energy storage within the region by reflecting its strategic priority within spatial planning, encouraging business innovation and increasing funding to support installation of energy storage systems.	Deliver infrastructure enhancement projects to facilitate the roll out of more renewable generation taking into consideration ecological impacts and regional place

RENEWABLE ENERGY continued

Renewable Energy Case Studies

The South West Net Zero Hub (formerly the South West Energy Hub)

The South West Net Zero Hub works with public sector and not-for-profit organisations to increase the number, scale and quality of low carbon energy projects across the West of England and wider South West, reducing the region's carbon footprint.

The Hub provides expert advice and support to get energy projects started, including solar panel installations, battery storage, public building retrofit and biomass boilers and supply. Current projects will save an estimated 16,800 tonnes of CO₂ emissions each year.

The Hub also runs the Rural Community Energy Fund which has granted £462,470 across 27 renewable energy projects.

The £4m South West Energy Hub is funded by the Department for Business, Energy and Industrial Strategy and hosted by the West of England Combined Authority

Low Carbon Challenge Fund: 150-meter Wind Turbine

The West of England Combined Authority has awarded £500,000 capital grant to an innovative, onshore wind turbine in Avonmouth, Bristol as part of our Local Energy Scheme. The project is being developed by the local community in Lawrence Weston, working collaboratively with its partner organisations. The funding comes from the European Regional Development Fund (ERDF).

Bristol City Leap – a new approach to £1 billion city scale decarbonisation

Bristol City Council has delivered £60m of investment into renewable and low carbon technologies over the past 5 years. It is now aiming to rapidly accelerate action by working in partnership with the private sector.

The City Leap Energy Partnership is creating is designed to attract £1bn of new investment into Bristol's energy projects and support the creation of a zero-carbon, smart energy city by 2030. The initiative will focus on a range of project types, including low-carbon heat networks, renewable energy from wind and solar, as well as energy efficiency, electric vehicles and smart energy systems using emerging technology. City Leap will seek to leverage its work on the Council's estate to deliver projects in the domestic and commercial sectors.

As well as tackling the city's environmental challenges, City Leap will deliver significant social and economic benefits for the citizens and businesses, including investment in local facilities and jobs, clean air, and warmer healthier homes.

GOVERNANCE AND MONITORING

We must work together to ensure we maintain momentum, take the tough decisions needed and monitor our progress towards meeting the goals our local leaders have agreed for the region. To do this we will put clear governance and monitoring arrangements in place.

To maintain the momentum required to deliver against our ambitions by 2030, we will update the Combined Authority Committee on progress every six months, following a review with the Mayor and the members of the Climate Action Panel. This reporting will follow the Combined Authority's monitoring and evaluation framework.

Each year, we will update the actions set out in our five themes, to ensure that we continue to develop a pipeline of actions that will meet the ambitions.

This responsibility will sit with the Combined Authority's Head of Environment, who will manage the process, engaging Unitary Authorities through a dedicated working group. This will build on existing governance structures such as the Environment Officers Steering Group.

As actions are developed to the business case stage (where applicable), we will estimate the carbon reductions and ecological benefits they will deliver with more precision and will evaluate these estimates during delivery. This approach will make sure that our actions evolve as we gain new learning and when things change nationally.

We will also carry out an assessment of the West of England's progress against the pathway to net zero carbon outlined earlier in this document. We will work with the Unitary Authorities in the region to continue to improve our understanding of the sources of carbon emissions, and progress made by government, businesses, and households.

The plan supports the delivery of a number of the United Nations Sustainable Development Goals, including 'climate action', 'affordable and clean energy', 'good health and wellbeing', 'decent work and economic growth', 'industry, innovation and infrastructure', 'sustainable cities and communities', 'responsible consumption and production', 'life on land', 'partnership for the goals'. We will carry out an assessment of our progress, through this plan, of our contribution to these goals.

MEASURING THE REGION'S PROGRESS

To track the region's progress towards our ambitions of net zero and nature recovery, we will establish a dashboard of indicators summarising the current position for each of the five priority areas.

These indicators will help to demonstrate where the region is on track, and where further progress is needed from the Combined Authority, government, and other partners.

As far as possible, these indicators will draw on public statistics. In some areas, data are not currently available at a local level. We will work with our partners to identify suitable metrics, and will investigate where data-gathering is required to fill the gaps.

A first draft of these indicators is included in the appendix. It is important to note that the covid-19 pandemic will have a significant impact on many of these indicators, and that the latest data available do not always show these effects yet. Transport outcomes in particular have been heavily affected by covid measures, and do not necessarily reflect the underlying trends.

In addition, our projects and programmes will be based in evidence. Specific evidence-gathering will be conducted to inform the design of projects as they are developed.

GLOSSARY & APPENDIX



WEST OF ENGLAND NET ZERO SCOPE

BIODIVERSITY NET GAIN

POTENTIAL FUNDING SCHEMES

CARBON OFFSET GUIDELINES

DRAFT INDICATORS OF PROGRESS

REFERENCES

GLOSSARY & APPENDIX

West of England Net Zero Scope

The West of England declared a climate emergency in July 2019 and has set an ambitious goal for tackling climate change:

'In 2030, the West of England is net zero carbon'

There isn't a globally recognised definition of a net zero city or region. In line with national reported data, we will target emissions including the following:

- Scope 1 emissions: direct use of fuels within the region, for example in cars and gas boilers
- Scope 2 emissions: energy used within the region that is produced elsewhere, such as electricity used by regional businesses
- Certain scope 3 emissions including waste and transport.

produced within the region on an end-user basis.

We use the following working definition of a Net Zero region:

'A Net Zero region will set and pursue an ambitious target for all emission sources covered within scope 1 and 2 including selected scope 3 emissions, specifically including waste and transportation. Any remaining hard-to-decarbonise emissions can be compensated with certified greenhouse gas removal'

Biodiversity Net Gain

Biodiversity Net Gain (BNG) is an approach that aims to leave the natural environment that is subject to development in a better state than before. It is often linked to planning applications and development through the National Planning Policy Framework (NPPF) Paragraphs 170(d), 174(b) and 175(d) and the Natural Environment Planning Practice Guidance (PPG). The Environment Act provides that all planning permission granted under the Town and Country Planning Act 1990 will be subject to a requirement for the developer to submit a biodiversity gain plan which shows how at least 10% net gain can be achieved. The net gain will be calculated using the approved Biodiversity Metric which was developed to help stakeholders assess changes in biodiversity value.

Under the Act, habitat identified to deliver the net gain must be secured for at least 30 years via obligations/conservation covenant and can be delivered on or off-site.

GLOSSARY & APPENDIX continued

Potential funding schemes

Funding scheme	Description
Woodland Creation Planning Grant	Landowners, land managers and public bodies (other than Forestry England) can apply to the Forestry Commission to support the design of new woodland under the Woodland Creation Planning Grant (WCPG). Up to £1,150 funding to support gathering and analysing information needed to make sure your proposal meets the requirements.
England Woodland Creation Offer (EWCO)	EWCO is one of a suite of Forestry Commission initiatives to support woodland creation and tree planting across England. Landowners, land managers and public bodies can apply to the England Woodland Creation Offer (EWCO) for support to create new woodland, including through natural colonisation, on areas as small as one hectare. You could receive over £10,000 per hectare to support your woodland creation scheme.
Small Business Research Initiative (SBRI) competition	Innovate UK has opened a £5m Small Business Research Initiative (SBRI) competition to demonstrate and deploy innovative solutions that integrate climate and environmental factors into financial services. The competition will fund companies to develop cutting-edge solutions for greening finance and to trial these solutions with partners in the finance industry. Under an SBRI competition, successful organisations win a contract for developing their innovation. <ul style="list-style-type: none"> • £50,000 in the first to define a minimum viable product • £1m in the second to refine and deploy a solution with a formal industry partner.
Hydrogen BECCS Innovation Programme	Backed with £5m in government funding, the new Hydrogen BECCS Innovation Programme will support the development of technologies to produce hydrogen generated via BECCS (bioenergy with carbon capture and storage). The BECCS process produces hydrogen from biomass and waste, with the ability to capture and store the carbon released during the process. Applicants from small businesses and large companies, to research institutions and universities, will be able to bid for a share of £5m new government funding under Phase 1 of the Hydrogen BECCS Innovation Programme. Each project will be able to bid for up to £250,000 to help develop their project plans and demonstrate the feasibility of their proposed innovation. Phase 1 will then be followed by a second Phase, that will provide further funding to support the most promising Phase 1 projects to demonstrate their projects.
Veolia Environmental Trust	The Trust's Community Grant Scheme is available to constituted not-for-profit organisations, local authorities and Environmental Bodies (EBs). Grants of between £10,000 and £75,000 are available to create or improve buildings or outside spaces for the benefit of the community.

GLOSSARY & APPENDIX continued

Potential funding schemes continued

Funding scheme	Description
HSBC Green SME Fund	HSBC UK has announced the launch of a £500m Green SME Fund as part of its commitment to support businesses of all sizes to transition and thrive in a low carbon economy. The new £500m fund is available for businesses with a turnover of less than £25m and will offer 1% cashback on loans, starting from £1,000 to help SMEs invest in green activities. This is the first green offering for small businesses with a cashback proposal in the UK.
Green Heat Network Fund	<p>The GHNF is a capital grant programme that aims to stimulate the growth of low-carbon heat networks that will support the delivery of the UK's 2050 climate change commitments and expand the current heat networks supply chain.</p> <p>It will be open to public, private and third sector applicants in England, will open for applications in April 2022 and is anticipated to run to 2025. The GHNF will be a key part of plans to reduce carbon emissions from heating homes and businesses by 2050.</p>

GLOSSARY & APPENDIX continued

Carbon Offset guidelines

Carbon offset through purchased credits should only be considered as the final option when all other reduction or avoidance measures have been exhausted. The Science Based Targets initiative (SBTi) encourages reduction when transitioning to net zero, but ultimately net-zero is based on the ability to remove an equivalent amount of tCO₂e to what you emit. This does not apply to any offset capability that is the result of initiatives implemented within the green environment theme, such as additional tree planting or habitat restoration.

Prior to embarking on external carbon offset, there are a number of factors which must be considered:

- Limited availability of offsets on the market and increasing costs: The demand for offsetting is increasing, in particular from the private sector and high carbon industries. In some cases, nature-based offsets have increased more than threefold between June 2021 and January 2022.
- UK-based or international: UK-based schemes are approximately 10 times the cost of similar schemes overseas due to the increased costs of planning, manufacture, installation and monitoring.
- Nature based or technological offset: Whilst nature-based solutions have the potential to deliver additional biodiversity benefits they are becoming less popular due to their reliability and long term security. In contrast significant social value can be delivered through offsetting schemes in developing countries, such as providing clean cooking facilities and community energy facilities.
- Offsetting through sequestration on land either owned by the Unitary Authorities or stakeholders would only be considered if it met the relevant standards, such as the Woodland Carbon Code or the Peatland Code and was independently verified.

GLOSSARY & APPENDIX continued

Draft indicators of progress

The indicators below are intended to provide an overview of the region's progress in each of the five priority areas. They are not wholly within the control of the Combined Authority but provide a summary of where we are seeking positive change. In several areas further work is required to develop the indicators or identify sources of data. These areas have been noted in the framework below.

Note: the covid-19 pandemic will have a significant impact on many of these indicators, but the latest data available do not always show these effects yet. Transport outcomes in particular have been heavily affected by covid measures. Public transport usage has recovered from 2020 levels, but remains below 2019. However, the overall longer-term trend is positive.

1. Low carbon transport

How we will deliver	Indicator of progress	Where we are now	Year	Change in the last year	Source
Reducing car trips	Share of people travelling to work by car	60%	2021	▲ +8 pts	TravelWest Travel to Work Survey
Increasing cycling and walking	Proportion of adults who travel at least once a week by cycling	15%	2019/20	▼ -1.1 pts	DfT
	Proportion of adults who travel at least once a week by walking	71%	2019/20	▼ -3.8 pts	DfT
Increasing uptake of low carbon vehicles incl. EVs	Share of vehicles with ultra low emissions	3.2%	Q3 2021	▲ from 1.2%	DfT
Increasing uptake of public transport	Bus trips per head per year	18.8	2020/21	▼ -67%	DfT
	Rail station usage (journeys to and from the region's stations)	5.2m	2020/21	▼ -81%	ORR
Outcome:	CO₂ emissions from transport	2,205kt	2019	▼ -1.3%	BEIS

GLOSSARY & APPENDIX continued

2. Low carbon buildings and places

How we will deliver	Indicator of progress	Where we are now	Year	Change in the last year	Source
Increase number of net zero and low emissions homes and buildings being developed	Share of new homes with an Energy Performance Certificate rating of A	8%	2021	▲ 6 ppts	DLUHC
Increase energy performance of homes and buildings	Share of homes with an Energy Performance Certificate rating C or above	44% of certificates	2020	TBC	DLUHC & Combined Authority estimates
Reduce reliance on carbon heating systems	Number of homes installing low-carbon heating systems?	-	-	-	To be developed
Outcome:	Domestic CO₂ emissions	1,473kt	2019	▼ -1.8%	BEIS

3. Nature recovery

How we will deliver	Indicator of progress	Where we are now	Year	Change in the last year	Source
Improve quality of existing spaces for nature and wildlife	Area covered by open green space	5,583 hectares 4% of the region's area	Oct 2019	No previous data	OS Open Greenspace
	Share of Sites of Special Scientific Interest with favourable status	68%	Mar 2022	-	Natural England
Create new spaces for nature and wildlife	Area covered by woodland	11,657 hectares 9% of the region's area	2019	▲ +0.3%	ONS and Forestry Commission Open Data

GLOSSARY & APPENDIX continued

How we will deliver	Indicator of progress	Where we are now	Year	Change in the last year	Source
Enable business, stakeholders & residents to contribute to nature's recovery	Residents with at least 2ha accessible green space within 300m of home	366,000 32% of population	-	-	Natural England
	Activity, engagement or volunteering in natural spaces	-	-	-	To be developed

4. Low carbon business

How we will deliver	Indicator of progress	Where we are now	Year	Change in the last year	Source
Support businesses to transition to low carbon practices & adapt for climate resilience	Share of non-domestic buildings with an Energy Performance Certificate rating of A or A+	3%	2021	▲ +1 ppt	DLUHC
	Measure of carbon efficiency of business processes?	-	-	-	To be developed
Prepare business for emerging green economies	Number of businesses operating in low carbon sectors?	-	-	-	To be developed
Support local people to access green jobs	Number of green job advertisements	5,723	2021	▲ +63.7%	Burning Glass Labour Insights
Outcome:	CO ₂ emissions from industry & commercial	1,082kt	2019	▼ -9%	BEIS
	CO ₂ emissions from public sector	208kt	2019	▼ -6%	BEIS

GLOSSARY & APPENDIX continued

5. Renewable energy

How we will deliver	Indicator of progress	Where we are now	Year	Change in the last year	Source
Increase local, community focussed, energy generation	Locally generated renewable electricity	476,427 MWh	2020	▼ -0.8%	BEIS
	Renewable electricity generated by community schemes?	-	-	-	To be developed
Work in partnership to develop new smart approaches to decarbonisation, storage, management & distribution of energy	Measure of readiness of grid for net zero?	-	-	--	To be developed
Outcome:	Locally generated renewable electricity as a proportion of total electricity consumption	11%	2019	▲ +0.6 ppts	BEIS – source 1 and source 2

GLOSSARY & APPENDIX continued

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