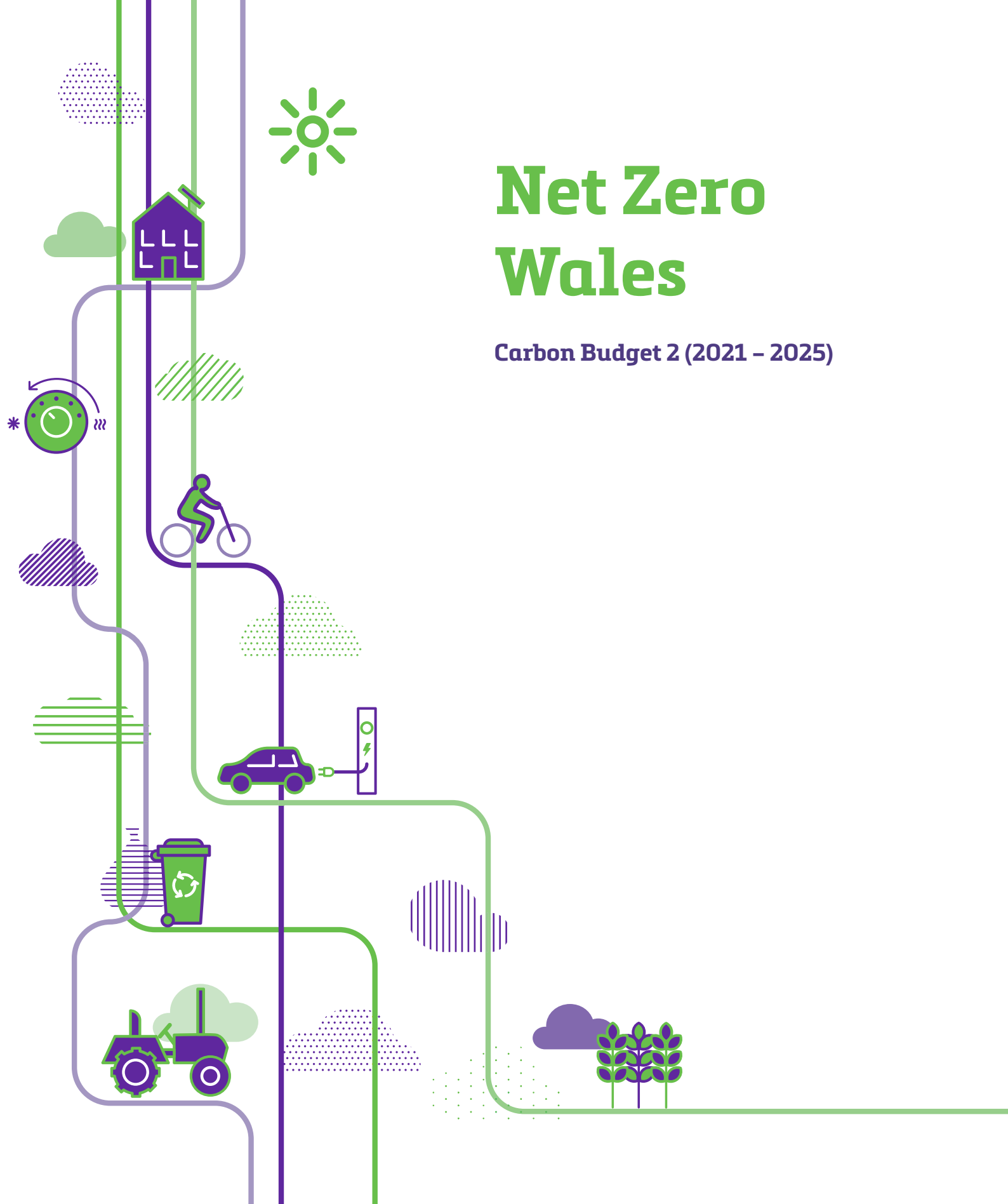




Net Zero Wales

Carbon Budget 2 (2021 – 2025)



Summary Document

Introduction

This is a summary document of our Net Zero Wales (NZW) plan covering our second carbon budget (2021-2025).

The full plan can be found [here](#).

Net Zero – means the greenhouse gases taken from the atmosphere is in balance with the greenhouse gases emitted.

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Cabinet Foreword

Wales has a proud history of global impact, from the industrial revolution to being the first Fairtrade nation and of course, having the first parliament in the world to declare a climate emergency in 2019.

This Plan is the next step in our story. With the latest IPCC report now confirming that global warming has irrefutably been caused by human behaviour and that further climate changes are inevitable, we must both brace ourselves for the impacts of more extreme heat and rain, and also shoulder our fair share of the burden to minimise further climatic shifts. We acknowledge that our industrial heritage has left a legacy of climate risk for future generations and it is right that we now set out the next stage of our plan to reduce our greenhouse gas emissions, bringing us onto a net zero by 2050 trajectory.

Following the publication of our last Plan, Prosperity for all: a low carbon Wales, the issue at hand was to make sure our response to the climate emergency permeated everything we did as Welsh Government. In line with the Wellbeing of Future Generations (Wales) Act (2016) (WFG Act), we are proud to say that this is now a reality.

This Net Zero Wales Plan represents a new phase in our decarbonisation journey with a new net zero target. This Plan sets out 123 policies and proposals, alongside commitments and action from every corner of Wales. However, we know this is just a snapshot in time and collectively we will need to go even further to overcome the following challenges.

- In line with the advice from the Climate Change Committee (CCC), this must be a **decade of action in Wales**. We need to make more progress in the next ten years than we have in the last thirty. In areas such as the public sector we can expect to see emissions reduce quickly, helping us meet our immediate Carbon Budget (2021-2015).

In other areas, we are laying the foundations for longer term and systemic change. In revolutionising the way we support and incentivise farmers to manage their land, and in planning for a national energy grid that is fit for a renewable future we will use this period to complete the groundwork that will enable significant emissions reductions in later years.

These actions are not just in the hands of the Welsh Government. **We need every citizen, community, group and business in Wales to embed the climate emergency in the way they think, work, play and travel.**

We know there are many barriers to this: cost, the complexity and volume of information that's out there and having the skills and the supply chains to enable the change. The work to overcome these starts now.

- We want to be honest that in some areas we do not yet know what the right path looks like. We want to **work with people across Wales to unlock the trickiest challenges and use innovation to test, learn and scale solutions that work**. This is demonstrated in our buildings chapter, where we are using government investment to try new approaches and technology to provide heat in social homes. This investment will stimulate the market at scale, and provide invaluable learning to unlock the decarbonisation of homes across Wales which are in private hands and for whom, today, moving away from a gas or oil boiler is prohibitively expensive, even if the right solutions were clear and if skilled installers were plentiful. Across this Plan we are committing to work with Wales to solve these knotty challenges.



- We have a much clearer understanding now than we did in 2019 about the extent to which the UK Government must act to enable our net-zero pathway. The CCC assessed that by 2050, around 60% of the changes needed in Wales were influenced by powers mostly reserved to Westminster. **In this Plan, we call on the UK Government to take the action which is needed to unlock a green future in Wales** – for example in supporting our cherished industries to transition to clean and sustainable futures. While the UK cannot reach its targets without Welsh action, we cannot reach our ambition without the UK Government playing its fair part.
- A theme in our last Plan was about a **just transition** – how we ensure we leave no-one behind as we move to a cleaner, stronger, fairer Wales. This Plan throws this issue into the spotlight, recognising this decade of action as a pivotal moment to develop green skills for the jobs of the future as well as developing a better understanding of the impacts of change, and how to make sure these are fairly distributed in society. We commit to learning lessons from the past and building a future for Wales that supports a wellbeing economy.
- Directly linked to this, and in light of the recent pandemic, a key challenge for this Plan is about building **economic prosperity** which is fair and built on a wellbeing economy. This will be manifested in the jobs that come from new technologies as well as Wales' ability to keep more benefits flowing to Welsh people, for example in our policy on local energy ownership. It will also manifest itself in a strong and valued foundational economy, developing a diverse, inter-related economic base in places across Wales.

Our values underpin all of this. As set out in our Programme for Government (PfG), this Government is committed to fairness. We don't believe we can consume endlessly and that new technology will bail us out. We don't believe that the worst off in society should shoulder the burden of change while the opportunities go begging elsewhere. We don't believe that government has all the answers.

We believe that by working together and taking collective action we can deliver a stronger, fairer and cleaner Wales for future generations.



Overview of Part 1 – Setting the context

Why we developed the plan

Net Zero Wales is our next emissions reduction plan, following on from Prosperity for all: A Low Carbon Wales covering the first carbon budget (2016-20).

Under the Environment Wales Act, Welsh Ministers must prepare and publish a report for each budgetary period setting out their policies and proposals for meeting the carbon budget for that period. This Plan sets out how Wales aims to meet the second carbon budget (CB2) (2021-2025).

We are proud that in March 2021, the Senedd passed a suite of regulations to increase Wales' decadal emissions targets from those set in 2018 and to set Carbon Budgets 2 and 3 in line with them. The targets and budgets set in law followed the Climate Change Committee's (CCC) recommendations:

- Carbon Budget 2 (2021-25): 37% average reduction (with 0% offset limit);
- Carbon Budget 3 (2026-30): 58% average reduction;
- 2030: 63% reduction;
- 2040: 89% reduction;
- 2050: at least 100% reduction (net zero).

Whilst we have set a pathway for 2050, NZW focuses on the need to 'outperform' the second carbon budget of 37% average reduction in emissions, in line with the CCC's recommendation. This is because the third carbon budget (2026-2030) requires an average reduction of 58%, reflecting the huge step change we need to make here and now if our actions are to have time to take effect.

We can only achieve this transformation in the way we live by developing evidence, engaging widely and building consensus on how we want to deliver this in Wales. To do this we will need to involve people and businesses from across Wales and from every walk of life. This is what our Team Wales approach means: everyone has a role to play and this plan is just the start of our journey in the decade of action.

Carbon budgets put a cap on emissions for over each 5-year period to 2050, starting in 2016-20. Carbon budgets are expressed in terms of an average reduction against the baseline. The Welsh Ministers must limit how many traded carbon units (offsets) can be used during each carbon budget.



What the plan covers

NZW is the start of our journey to net zero and a greener, stronger, fairer Wales. It focuses on our second carbon budget (2021-2025), but looks beyond to start building the foundations for Carbon Budget 3 and our 2030 target, as well as net zero by 2050.

It contains **123 policies and proposals** across all ministerial portfolios.

It has been split into five parts:

- **Part 1 – Setting the context** – the introduction and overall vision for Wales in 2025 and beyond to 2050, an overview of the reduction trajectory, the latest emissions data, and a broader view of our consumption emissions and global responsibilities.
- **Part 2 – Setting the conditions** - capturing those actions and policies which do not reduce emissions on their own, but which enable the transition we wish to see.
- **Part 3 – The emission sector chapters** - setting out the pathways for each emissions sector, describing what is in scope, where the emissions come from, progress to date, our ambition for the future and then details of the policies and proposals together with the all-Wales approach to drive the changes we need to see.
- **Part 4 – Monitoring and reporting** - setting out our governance structures, performance indicators, financial costings and finally a section on how the Plan was developed in line with the Well-being FG Act and how it will maximise our contribution to the wellbeing goals.
- **Part 5 – Next Steps** - highlighting key engagement and emissions reducing deliverables over this carbon budget, and the timeframe for developing our third delivery Plan to meet Carbon Budget 3.

Consumption Emissions

Consumption emissions are a combination of those emissions that occur in Welsh households (heating and driving, for example), emissions that occur in Wales to produce goods and services consumed in Wales, and 'imported' emissions that occur in other countries to produce goods and services consumed in Wales.

Our statutory emissions targets and carbon budgets measure our territorial emissions, taking the emissions that occur within our national boundaries into consideration. It is also important to measure our consumption emissions, as action to reduce emissions in Wales could potentially lead to increased emissions in other parts of the world. We use these two ways of accounting for our emissions as national indicators in making progress towards the seven well-being goals. The Environment (Wales) Act (2016) requires us to publish an estimate of "Welsh consumer emissions". **Next year, we will publish the first of these statements on our consumption emissions for the Carbon Budget 1 period, covering 2016-2020.**



Overview of Part 2 – Setting the conditions

Programme for Government – Our government programme sets out the ambitious and radical commitments we will deliver over the next five years in order to tackle the challenges that we face, set the foundations for future decarbonisation and improve the lives of people across Wales.

The Programme shows how we will act decisively to tackle the climate and nature emergency so that people can go on treasuring Wales' rich natural resources for generations to come.

It is not just what Wales does which is important, it is how we do it that matters too. As part of our holistic and comprehensive approach to delivering net zero, we know we have to do more than just the actions described in the emission sector chapters. We know we have to enable the change, setting the conditions to drive down emissions and build the foundations for net zero by 2050 in a way that makes sure no one is left behind.

Part 2 of NZW captures those actions and policies which do not reduce emissions on their own, but which enable the transition we wish to see and how we have 'set the conditions' to enable and support that change. This part is broken down into the following sections:

- Why is our approach so important?
- What are we already doing?
- What more will happen in Carbon Budget 2?
- A Team Wales Approach to enable change

Why is our Approach so Important?

The Distributional Impacts of the Change

We are committed to responding to our climate ambitions in ways which create greater equality and better outcomes in our communities, alongside nurturing economic health and international competitiveness. Doing so requires us to understand how communities and

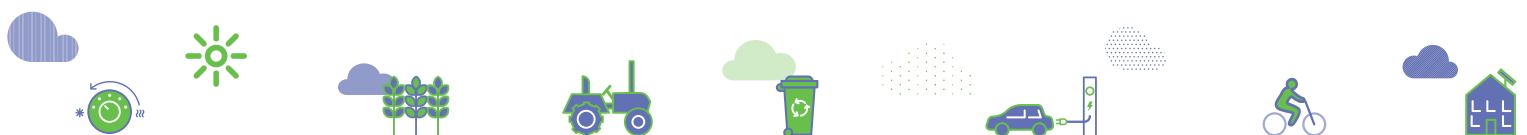
businesses will be affected by the changes and put in place the mechanisms to ensure both positive and negative effects are distributed fairly.

In managing a socially just transition to a cleaner future, we must avoid the burden of change falling on the shoulders of those least able to pay, as costs are passed down the supply chain from manufacturers to consumers of goods and services.

We will embed the concept of a 'Just Transition' in the Social Partnership approach that brings together government, trade unions and employers, recognising the importance of early engagement.

What are we already doing?

Delivering policies to ensure a fair and prosperous transition to net zero will be largely dependent on our ability to identify and maximise connections between policies, so that we maximise the contribution towards the seven well-being goals of the Wellbeing of Future Generations Act. Our net zero pathway requires us to decarbonise across all sectors, and therefore it is important we make the most of every policy and action. We need to think about a joined-up system and integrate our work, continuing to seek multiple benefits from every action we take, embedding our response to the climate and nature emergency in everything we do.



Taking a place based approach

Different communities will experience policies and changes differently, depending on their local context. We must continue to engage and work with people in all parts of Wales to understand regional issues, opportunities and interests for communities and the Welsh workforce.

We have a series of frameworks to help us take a consistent, coherent approach across Wales, which takes account of the needs of each place.

Investment in the net zero economy

The costing of NZW and an assessment of longer term costs is described in Part 4 of the plan. This section focuses not on what the costs might be, but how they might be met.

What more will happen in Carbon Budget 2?

We will:

- Provide **additional investment and incentives** through delivery of the policies in this Plan
- Review **the skills** required **for a green recovery and transition to net zero**
- We will put the net zero challenge at the heart of a new Welsh Government **Innovation** Strategy ensuring a coherent science and innovation system.
- Harness **digital technology** to support better provision of online public services.

Global Wales:

- **International Action** - Aligned with our International Strategy we have developed a series of action plans to set out how we will establish Wales as a globally responsible nation, which is making a fair contribution to tackling climate change.
- **Trade** - Linked to our international strategy, we will also seek opportunities to promote exports into the clean energy / renewables sector through our Cluster

Programme, assisting businesses to transition away from fossil fuel projects and undertake activity, campaigns and marketing that promote Wales' capabilities on the global stage in renewables including marine and wind energy.

A Team Wales approach to enable the change

Collaboration and Involvement

Our pathway for net zero requires an approach in which government action is just one component of our response alongside concerted action across the public sector, across our economy and throughout our communities. Since the publication of Prosperity for All: Low Carbon Wales we have developed a Team Wales Approach.

Team Wales Approach – within each emission sector chapter in Part 3 of the plan, we set out the action which can be taken by:

- The Welsh public;
- The Public Sector in Wales;
- Welsh Businesses;
- The UK Government; and
- In collaboration with international partners.

We will support this approach with robust engagement. The overriding aim of our engagement work is to have an early and joined up discussion of the action being taken across Wales, the UK and internationally. This will ensure everyone has the opportunity to play their part.

Working with People

The progress we have seen to date has mainly been achieved in areas where little public engagement was necessary and went largely unnoticed by public perception. For example, the changes in the electricity grid have not required citizens to use energy differently.

2 <https://gov.wales/sites/default/files/publications/2020-10/international-strategy-for-wales-v1.pdf>



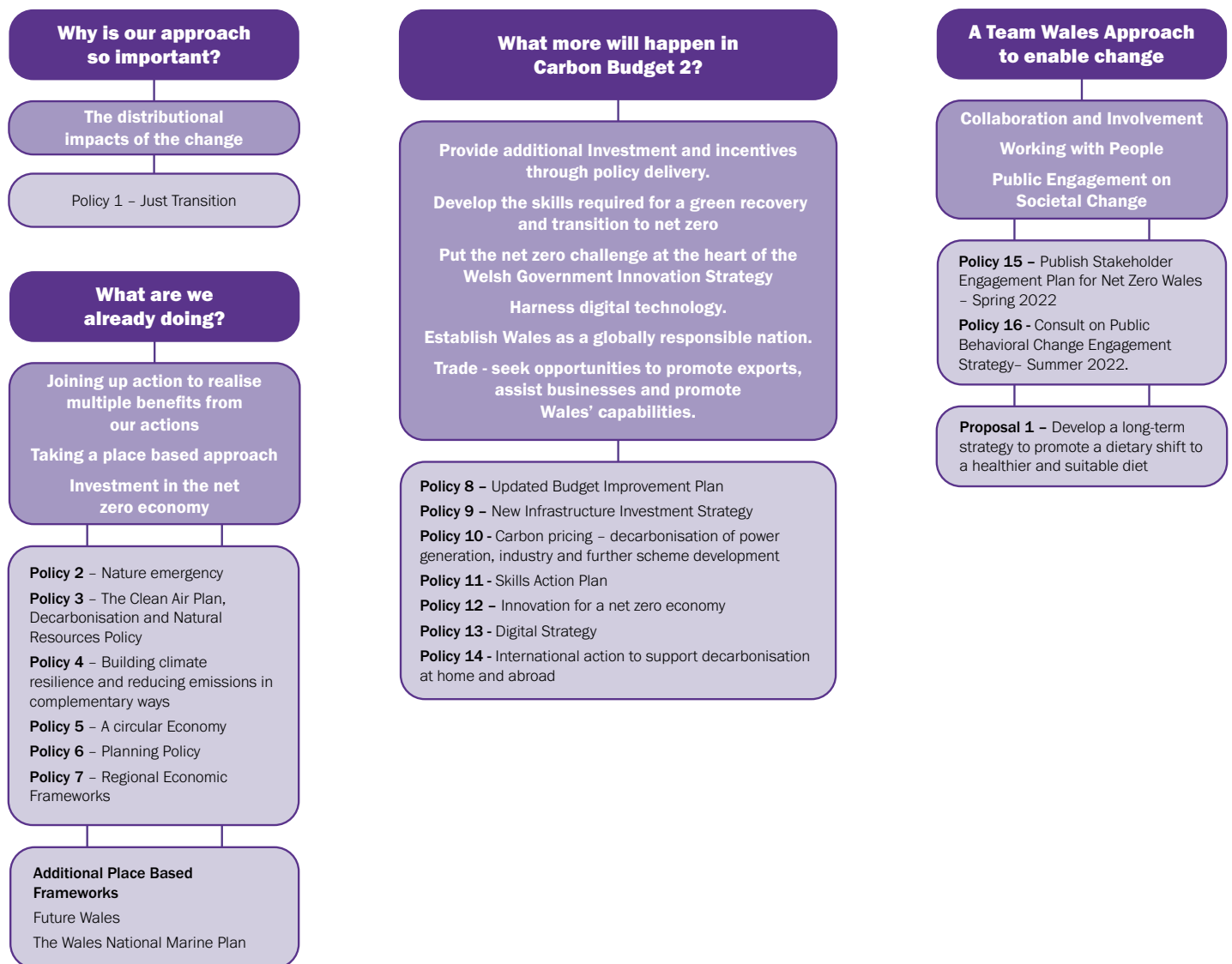
As we look ahead to Carbon Budget 3, the changes needed will have far-reaching impacts upon, and will be shaped by, the way we all live our everyday lives. The most effective means of ensuring fairness is to involve people in shaping the ways in which change is delivered.

We use research, behavioural science and social science techniques to make sure our policies and interventions are designed around the citizen, providing us with a better understanding of the barriers to changing behaviour. Through understanding the experience of different population groups we can develop a better insight of whether and how these barriers differ to ensure any policies and interventions support our ambitions on equality.

Public Engagement on Societal Change

Through public dialogue we will support everyone to play their part in reaching our climate change targets. We will inform and work with the public around the need for climate action and learn from the work underway in the UK and internationally.

Overview of Part 2 – Setting the conditions



Overview of Part 3 – The emission sector Chapters

Part 3 of NZW sets out how emission sector policies and proposals contribute to meeting Carbon Budget 2 (CB2). There are 8 emission sectors.

Across the United Kingdom

The UK Government also has a legislative target for net zero in 2050. Collectively, Wales, Scotland and Northern Ireland accounted for 22% of UK total emissions in 2019 but the powers to tackle those are not all devolved.

That means that while UK Government is responsible for some of the actions needed to tackle the climate emergency in Wales, the UK Government will rely upon action by Welsh Government to deliver on its own legislated targets

Wales' contribution is particularly important to the UK target due to our large agricultural and manufacturing sectors.

Conversely, the CCC estimate nearly 40% of all abatement required in Wales in the next thirty years will take place in sectors where key powers are 'partially' or 'mostly' devolved.

We continue to call on UK Government to be more transparent and collaborative in the development of policy and to work with Welsh Government to bring greater clarity to the decarbonisation pathway of Wales and the UK as a whole.

Emission Sector Chapters describes what's covered and proposed by the sector over CB2 and beyond.

A **policy** is a committed course of action which has been wholly decided upon, and to which an ambition statement can be attributed to with a reasonable level of confidence.

A **proposal** is a suggested course of action or exploratory action, the details of which might change as this course of action is explored further. It would be intended that Proposals will be converted into Policies as they are implemented.

An **Emission Sector Framework** summarises how the Ambition Statement has been arrived at, demonstrating how the collective policies and proposals and 'ask' of others will reduce emissions in that sector.

An **Ambition Statement** is a declaration of intended or desired change resulting from a policy or combination of related policies and proposals.



Electricity and Heat Generation

1. Introduction

Scope

The electricity and heat generation sector in Wales covers the production of electricity in Wales from fossil fuel, low carbon and renewable generation. It also includes the generation and supply of heat, such as through heat networks.

Vision

Our vision is for a decarbonised energy system which provides **wider economic and social benefits for Wales than the system we see today**. We aim to virtually eliminate greenhouse gas emissions from power stations by 2035 and in this carbon budget we will focus on significantly reducing emissions from fossil fuels in Wales.

We believe that displacing fossil fuels with low carbon sources will **help Wales create the industries and jobs of the future. New skills and capabilities** will be required across industry and government to meet the challenge of decarbonising the energy system. Many of these new jobs are expected to be **highly skilled and well paid and will provide opportunities to redeploy employees from traditional industrial sector**. There will also be an expansion of lower skilled employment in the renovation and construction sector.

2. Emissions

Summary of progress to date

Total emissions from the electricity and heat production sector in Wales have decreased by 35% between the base year (1990) and 2019 mainly due to a switch in the fuel mix from coal to gas, and increased low carbon renewable generation, as well as improved efficiency in energy generation. Moreover, the Aberthaw coal-fired power station has now closed and will not generate at any time in this carbon budget period.

3. Ambition Statements

By 2025, 1GW additional renewable energy capacity will be installed.

From 2021 there will be no new build unabated fossil fuel generation in Wales. All current unabated gas generation removed from the system by 2035.

In this high renewables system, any additional supply will be met from decarbonised power plant from 2035 at the latest.

4. Policies and Proposals

Decarbonising electricity production from fossil fuels

Reducing our greenhouse gas emissions requires us to reduce the use of fossil fuels. Our policy approach does not support the extraction of petroleum in Wales and we will bring the extraction and consumption of fossil fuels in Wales to a managed end.

Whilst the use of fossil fuels must reduce to meet carbon budgets, we need to maintain a secure supply of electricity for people and businesses in Wales as our capacity for renewable energy generation increases. Therefore, we will ensure this supply is met through decarbonised sources as soon as possible and from 2035 at the latest.

Increasing low carbon and renewable generation – Planning for a more integrated net zero energy system

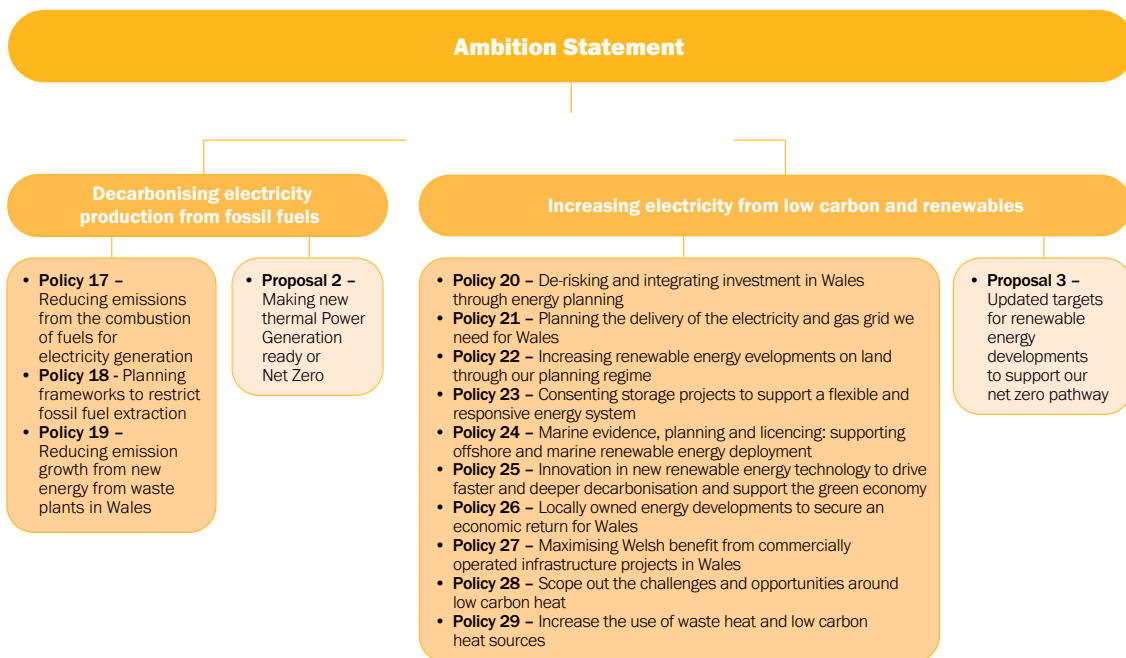
Alongside reducing fossil-fuelled generation in Wales, we need to increase generation from renewables in ways which are the most cost effective and beneficial for Wales.






We need to understand where the future demand for energy will be, and how it will vary across the day and night, for what purpose (power, heat and transport) and across the seasons.



5. Team Wales Approach

Electricity and Heat Generation



Team Wales approach The Ask of others	
1. Our Ask of the Welsh Public (Individuals & Households) 	<p>We ask the public to improve decisions in energy efficiency, generation and storing their own energy whilst also making conscious choices on the amount of energy consumed and how they heat their homes, switching to more low carbon electricity and heating fuels.</p>
2. Our Ask of the Public Sector 	<p>We ask that Public sector bodies act as exemplars to help drive significant impact through their service provision and purchasing power, influencing supply chains to decarbonise. Public sector bodies must invest in energy efficiency and create new income streams, or avoid future costs, from generation of renewable energy.</p> <p>We also ask that Local authorities develop the capacity to plan for a low carbon future, where travel is minimised and active travel enabled. We ask local authorities to work with us to develop local and regional energy plans, which will provide strong evidence to inform these place based plans for a net zero society.</p>
3. Our Ask of Welsh Business & Industry 	<p>We ask that key stakeholders continue to provide strong support to key areas which will enable growth in both generation and smart demand; encouraging decarbonisation through circular economy principles, energy efficiency Carbon Capture Utilisation and Storage (CCUS) and hydrogen.</p>
4. Our Ask of UK Gov (Call for UK action) 	<p>We call on UK Government to:</p> <ul style="list-style-type: none"> • Reflect the demands of the climate emergency. A number of UK policies stem from historic legislation not in line with binding targets on emission reduction. Specifically we are calling for the UK Government to remove the statutory duty of the Coal Authority to maintain and develop an economically viable coal industry; • Develop a long-term approach which supports a broad range of renewable technologies, creating a sustainable market for the wide range of low carbon heat technologies we will need to deliver our renewable and decarbonisation targets; • Deliver system rules and incentives which drive development of low carbon power sources to serve local demand. We need places in Wales to lead the low carbon transition by developing low carbon energy systems within the frameworks set by UK and Wales • Ring fence funding for early stage marine projects, necessary to incentivise the industry to continue investment; • Utilise the revenues generated by the UK ETS to stimulate emission reduction in power generation in ways which drive investment in Wales • Work with Ofgem to provide a framework which allows network owners to invest proactively in networks to ensure less affluent areas have access to similar opportunities. We also need to ensure demand connections are prioritised to create employment in areas where well paid jobs are less readily available; • Find a more progressive way of funding the changes necessary to decarbonise the energy system; and • For the Oil and Gas Authority (OGA) to develop a strategy consistent with the net zero pathway
5. International Engagement 	<p>We ask that partners across Europe and further field continue to work with us, sharing knowledge and experience on decarbonising energy.</p>

Transport

1. Introduction

Scope

Emissions from the transport sector include those from cars, trucks, buses, taxis and railways within Wales along with our share of emissions from international aviation and international shipping.

Vision

Transport has a significant role to play in helping Wales reach net zero and **generating wider benefits across health, air quality, accessibility and the economy**. Through the policies and actions in this chapter and in 'Llwybr Newydd', our Wales Transport Strategy, **we will put people and climate change at the front and centre of our transport system**.

Firstly, we will plan ahead for better physical and digital connectivity, more local services, more home and remote working and more active travel, to reduce the need for people to use their cars on a daily basis.

Secondly, we need an integrated transport system that **works for everyone**, where people and goods can move easily from door-to-door by accessible, sustainable and efficient transport services and infrastructure. This means **significant investment in sustainable modes**, such as bus, rail and active travel, to create services that people want to use, can use and do use.

Thirdly, we will encourage people to make the change to more sustainable transport by making it more attractive and more affordable and by adopting innovations that make it easier to use **for everyone**.

2. Emissions

Summary of progress to date

Although vehicles are becoming increasingly efficient, we are also travelling more, so overall sector emissions have changed little since the 1990 baseline, declining by just 6% to 2019. In fact, cars and light duty vehicles made up 71% of the Welsh transport sector emissions in 2019.

3. Ambition Statements

We aim to reduce emissions from passenger transport by 22% in 2025 (from 2019) and 98% in 2050 through demand reduction, modal shift and the uptake of low carbon technologies.

Our aim is to reduce the number of car miles travelled per person by 10% by 2030 and to increase the proportion of trips by sustainable travel mode (public transport and active travel) to 35% by 2025 and 39% by 2030.

By 2025 10% of passenger travel will be by zero emission car and 48% of new car sales will be zero emission, we will have a comprehensive network of electric vehicle charging points, and will also have transitioned a large proportion of our bus, taxi and private hire vehicles fleet to zero emission vehicles.'

4. Policies and Proposals

Managing travel demand and modal shift

The development and roll out of technology to drive down emissions from vehicles is well underway, but will take time. Early actions to manage travel demand and encourage modal shift will play an important role and will bring wider benefits, for example to health, reducing congestion, and improving air quality.

Our policies and proposals set out the actions we will take to reduce car traffic and support the shift to sustainable travel modes in line with the balanced net zero pathway. We aim to reduce average car driver miles per capita to 10% below 2019 levels by 2030.



Technology and the uptake of transport with low or zero emissions

Decarbonising transport at a sufficient rate to deliver our carbon budgets will require action to support and accelerate the transition to vehicles that produce zero tailpipe emissions. The rate at which this transition takes place will have a big influence on total emissions savings in transport and across the Welsh economy as a whole. For cars and vans, this will predominantly represent a transition to battery-electric vehicles. For the transportation of freight, options include battery-electric vehicles, hydrogen fuel-cells and electric road systems. The continued electrification of the rail network, potentially supplemented with hydrogen, battery-electric and hybrid trains, will also be needed.

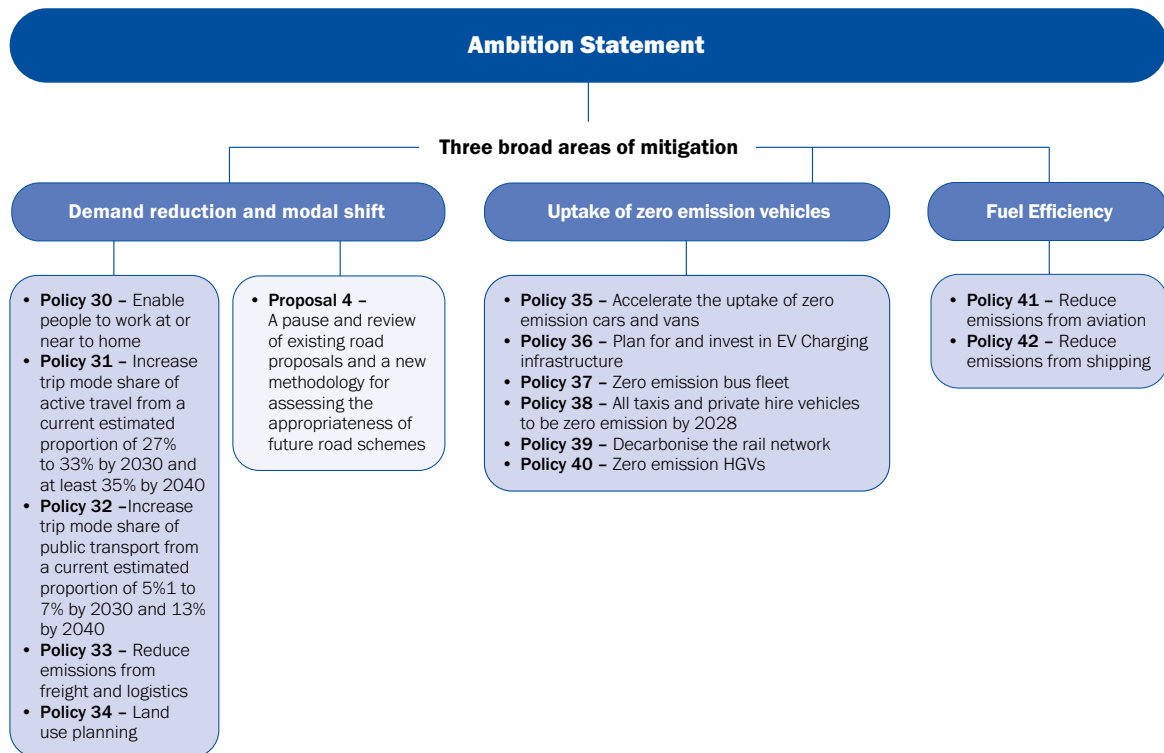
Improvements to fuel efficiency in conventional vehicles






Improvements to the efficiency of conventional vehicles will play an important part in the decarbonisation of transport, particularly in sectors where zero emission technologies are still being developed. The introduction of lower carbon fuels can often deliver immediate carbon savings with little or no change required to vehicles or fuel distribution.



5. Team Wales Approach

Transport



Team Wales approach The Ask of others	
1. Our Ask of the Welsh Public (Individuals & Households) 	We ask the public to make conscious choices for their transport and mobility needs, replacing journeys with low carbon, active travel, or public transport where possible and also reduce the amount of flying.
2. Our Ask of the Public Sector 	We ask that all public sector organisations work towards Wales' target to have all new cars and light good vehicles in the public sector fleet as ultra-low emission vehicles by 2025 and where practicably possible, all heavy goods are ultra-low emission by 2030.
3. Our Ask of Welsh Business & Industry 	We encourage all Welsh businesses and industry to explore how low or zero carbon transport can be incorporated within their business models and we encourage setting of specific targets. We encourage all small businesses in Wales to join the UK Government's Together For Our Planet campaign and to access resources available through the new UK Business Climate Hub.
4. Our Ask of UK Gov (Call for UK action) 	<p>We call on UK Government to:</p> <ul style="list-style-type: none"> • Provide clarity on the plan and milestones for implementing the ban on new petrol and diesel cars; • Bring forward proposals for ending the sale of all non-zero emission HGVs from 2040, with lighter HGVs from 2035, bringing clarity on how we can support the sector to trial new technologies and utilise the financial incentives from the UK Government; • Commit to work in partnership and provide funding for an extensive Overhead Line Equipment (OLE) programme to enable rail electrification, in line with rail industry recommendations; • Bring forward proposals to drive fuel efficiency, the development of new zero emission aircraft and accelerating the supply and uptake of sustainable aviation fuels (SAF); and • Fully engage with us and other partners to: <ul style="list-style-type: none"> – Agree to our proposals for a full devolution of rail services and infrastructure and a fair funding settlement to ensure that Wales is able to decarbonise its rail network at a sufficient rate to deliver carbon budgets; – Develop rail services and provide new stations between Cardiff and Severn Tunnel Junction; – Improve rail infrastructure across Wales alongside Network Rail; and, – Develop a new multi-modal Logistics and Freight Plan for Wales.
5. International Engagement 	We ask that international cooperation through the International Maritime Organisation (IMO) and the International Civil Aviation Authority (ICAO) is enhanced to ensure global reduction of emissions from international aviation and shipping.

Residential Buildings

1. Introduction

Scope

The residential buildings sector covers emissions from energy usage in homes, as well as work to reduce embodied carbon in constructing and retrofitting residential properties. This chapter covers the residential sector (all of Wales' housing including owner occupied, privately and socially rented homes).

Vision

This chapter sets out the policies and wider actions that will help us ensure that new homes are built low carbon and to the highest standards and help us reduce carbon in the existing housing stock. To reduce emissions, housing needs to set challenging build and retrofit standards, and **help people live in ways that are good for them now and for future generations.**

We will address the need for societal changes seeking to **normalise investment in the decarbonisation** of homes and helping to **change how we live in homes** to maximise the impact of fabric changes. Through the policies set out below we will not only lower carbon from domestic buildings but we will generate **happier, healthier home environments supporting people to thrive and reducing demand on public services.**

Our work in this sector will be governed by a set of strategic principles.

- Taking a test and innovate approach to whole home decarbonisation;
- Recognising we will learn and iterate as part of our no regrets approach;
- Using the social housing sector to lead the way and set the highest standards;
- Foundational economy principles at the heart of everything we do.

2. Emissions

Summary of progress to date

Total emissions from the residential buildings sector in Wales have decreased by 25% between the base year (1990) and 2019, driven largely by a change to the fuel mix from coal to natural gas and energy efficiency measures.

Our residential buildings sector is strongly influenced by temperatures in Wales and there can be significant year-to-year variability.

3. Ambition Statements

By 2025 we expect around 148,000 houses across Wales receive retrofit measures to reduce heat loss

By 2025 we aim to move from fossil fuels through increasing the proportion of heat that is electrified by 3% by 2025.

By 2025 all new affordable homes in Wales will be built to net zero carbon, and our ambition is that our net zero standards are adopted by developers of all new homes regardless of tenure by this date.

4. Policies and Proposals

Improved energy efficiency – improving standards and retrofit

Energy efficiency measures will be crucial to meeting Carbon Budget 2 and our net zero target. Wales has 1.4 million homes of every size and type, including a significant proportion of older buildings. Wales has a slightly higher proportion of solid-wall homes than the UK reference, which means more of our housing stock is more expensive to insulate. Over this budget we will use our levers to drive energy efficiency, however we also call upon the UK Government to provide a supportive regulatory and fiscal environment.

3 Note: emissions generated at power stations, even if in response to demand from residential building owners, are captured as part of the 'electricity and heat' chapter.



Welsh Government financial support for housing retrofit has historically been targeted at those least well off in the hardest to heat homes (EPC D-G). This prioritisation is expected to continue through the 2020s as we seek to leave no-one behind in our transition to a greener Wales. For the better off, we expect the market to provide solutions to enable retrofit of homes. 'Energy as a Service' is likely to play a significant part, implementing energy saving measures, thereby reducing costs of heating the home, with the savings used to pay for the retrofit.

Low carbon heat

In future, buildings are increasingly expected to be heated using electricity rather than gas and oil, for example by heat pumps.

In the transitioning to low carbon heat we need to ensure we transition in a fair and just way, as electric heating is currently more expensive than gas.

Decarbonising heat requires urgent action from the UK Government to provide clarity on the steps it will take to ensure rapid gas grid decarbonisation with the Heat and Buildings Strategy only just published and being assessed

by Welsh Government. UK Government investment must support innovation and research. We recognise low carbon heat policy gaps and we are working on ways we can fill these gaps.

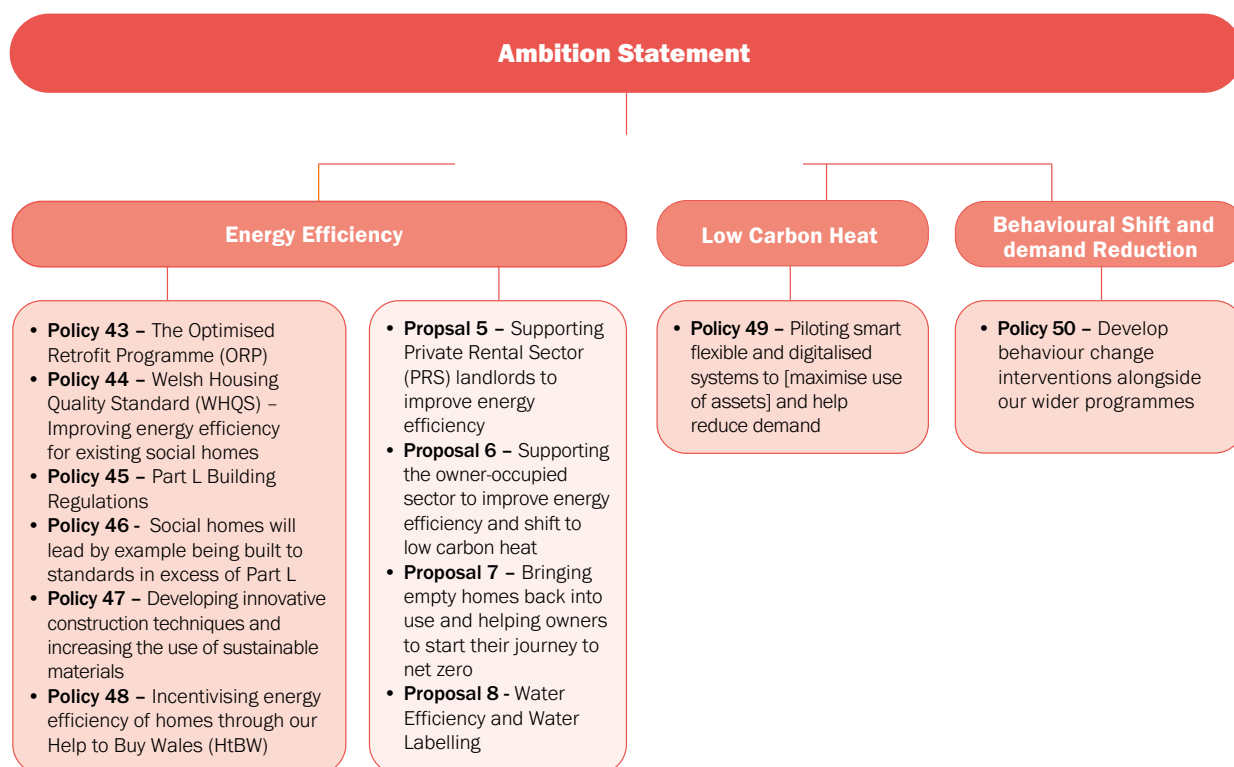
Behaviour Change





There are several behavioural change measures households can implement to reduce emissions. These include interventions such as pre-heating (ahead of peak times, assuming homes are sufficiently insulated and have smart meters), turning off lights when not in use, take up of smart meters to encourage smarter use of heating and management and choosing more energy efficiency appliances. In driving forward behaviour change, consumers need options to choose energy efficiency products and appliances. More efficient products reduce demand for power, reducing costs to consumers in bills.



5. Team Wales Approach

Residential Buildings



Team Wales approach The Ask of others	
1. Our Ask of the Welsh Public (Individuals & Households) 	We ask the public to consider ways in which they can retrofit and decarbonise their homes.
2. Our Ask of the Public Sector 	We ask that stock holding local authorities (those who have social housing) ensure that their properties meet the Welsh Housing Quality Standards requirements on low carbon (when these are introduced in 2022), that their new build affordable housing meets Welsh Development Quality Requirements from 1st October 2021, and through their engagement with the Optimised Retrofit Programme to retrofit their housing stock.
3. Our Ask of Welsh Business & Industry 	We encourage businesses & industry in Wales to recognise the future demand for skills and supplies needed to decarbonise housing. We require businesses to be vocal about the demand for new training, especially where none currently exists, ensuring they are proactively upskilling themselves and become advocates for decarbonisation. Equally, Industry need to explore and seize opportunities to manufacture the supplies needed to decarbonise Welsh homes and meet future demand.
4. Our Ask of UK Gov (Call for UK action) 	We call on UK Government to: <ul style="list-style-type: none"> • Take into account Wales' unique needs and specific context when setting policy, which applies across the whole of UK, and work with the Welsh Government to help support analysis on the impact of UK Government decarbonisation policy on Wales. • Fully engage with Welsh Government on the next steps for the Heat and Buildings Strategy. • UK Government to take the lead in shaping policy to overcome the barriers to decarbonisation of homes including the cost of technology, consumer awareness/behaviour change. • Take action to address the market distortion resulting from an unequal application of carbon price and other green levers applied to electricity. • Establish a supportive regulatory and fiscal environment – levers include MEEs and mandatory disclosure requirements for lenders on energy performance of homes. • Ensure ECO works with our investment programmes.

4 Smart meters and real time displays have been found to result in energy savings of around 3%.



Industry and Business

1. Introduction

Scope

The industry and business sector includes manufacturing, construction, operation of machinery, food processing and the extraction and production of fossil fuels. The Sector also covers emissions arising from industrial and commercial buildings.

Vision

Our industrial sector faces decarbonisation challenges, which require long-term targeted **and symbiotic action to ensure their international competitiveness**, including fuel switching, carbon capture and storage or other new technology solutions and raw material substitution with waste streams from other industries requiring less energy to process. This approach will have a strong focus on place.

The 2020s will be the period where substantial resource efficiency improvements are made and we develop and scale up new options for industrial decarbonisation such as carbon capture and storage, low-carbon hydrogen and engineered emissions removals. This period will also enable us to understand the costs, supply chain implications and where costs fall. Flexibility will be required as appropriate decarbonisation pathways for regions and industrial sectors are developed.

The scaling up of new options for industrial decarbonisation will then have a transformative impact on emissions from the end of the current decade and through the 2030s.

2. Emissions

Summary of progress to date

Total emissions from the industry and business sector in Wales have decreased by 36% between the base year (1990) and 2019, driven largely operational changes, fuel-switching to less carbon intensive fuels and improvements in efficiency of production.

Our industry sector is strongly influenced by variation in outputs at individual sites located in Wales and within the overall declining trend in emissions there can be significant year-to-year variability.

3. Ambition Statements

By 2025 we expect to see a decrease in energy usage in industry of 4% as a result of energy efficiencies whilst building a well-being economy.

By 2025 we want to see an increase in electrification in industrial processes by an average of 3%; and growing hydrogen by an average of 3%. In addition, over CB2 the primary foundations for further industrial transformation will be laid through our UK ETS policies and is expected of UK Government's net zero Industrial Strategy to enable increased electrification, fuel switching and CCS from the 2030s.

4. Policies and Proposals

Resource and Energy Efficiency

Resource efficiency covers the actions to lower energy and material use, for example, industrial processes.

As described in Part 2 of the full Net Zero Wales plan, by 2050, we aim to use only our fair share of the planet's resources, have 100% recycling (zero waste) and net zero carbon. Keeping resources in use, used efficiently and avoiding waste will reduce the carbon and ecological footprint of Wales as a nation – reducing its impact both within and outside our borders.



Fuel Switching

Activity supporting industrial fuel switching is underpinned by many of the actions set out in the Energy Chapter of the Net Zero Wales Plan, including the development of renewable energy and a hydrogen pathway. Activity will also be underpinned at a UK level by innovation support and funding. Fuel switching will also be dependent upon the long term availability of an affordable fuel supply.

Fuel switching to low carbon fuels, for most industrial processes, will be a challenge both technically and in relation to infrastructure and operations. Industry will need to conduct research and development to understand the implications, evaluate options and in some cases processes will need costly re-designs.

Carbon Capture Utilisation Storage (CCUS)

As described later in this document, the Land Use, Land Use Change and Forestry sector is the only sector currently able to remove emissions from the atmosphere. However, longer term, the CCC has been consistent in stressing the necessity of CCUS to achieving net zero emissions. The CCC recognises the Welsh Government is not able to meet its target

without the right policy and financial commitments from Westminster as the UK Government holds many of the powers and levers related to CCUS. We will continue to engage with the UK Government on its developing CCUS policies to ensure they take account of the needs of Wales.

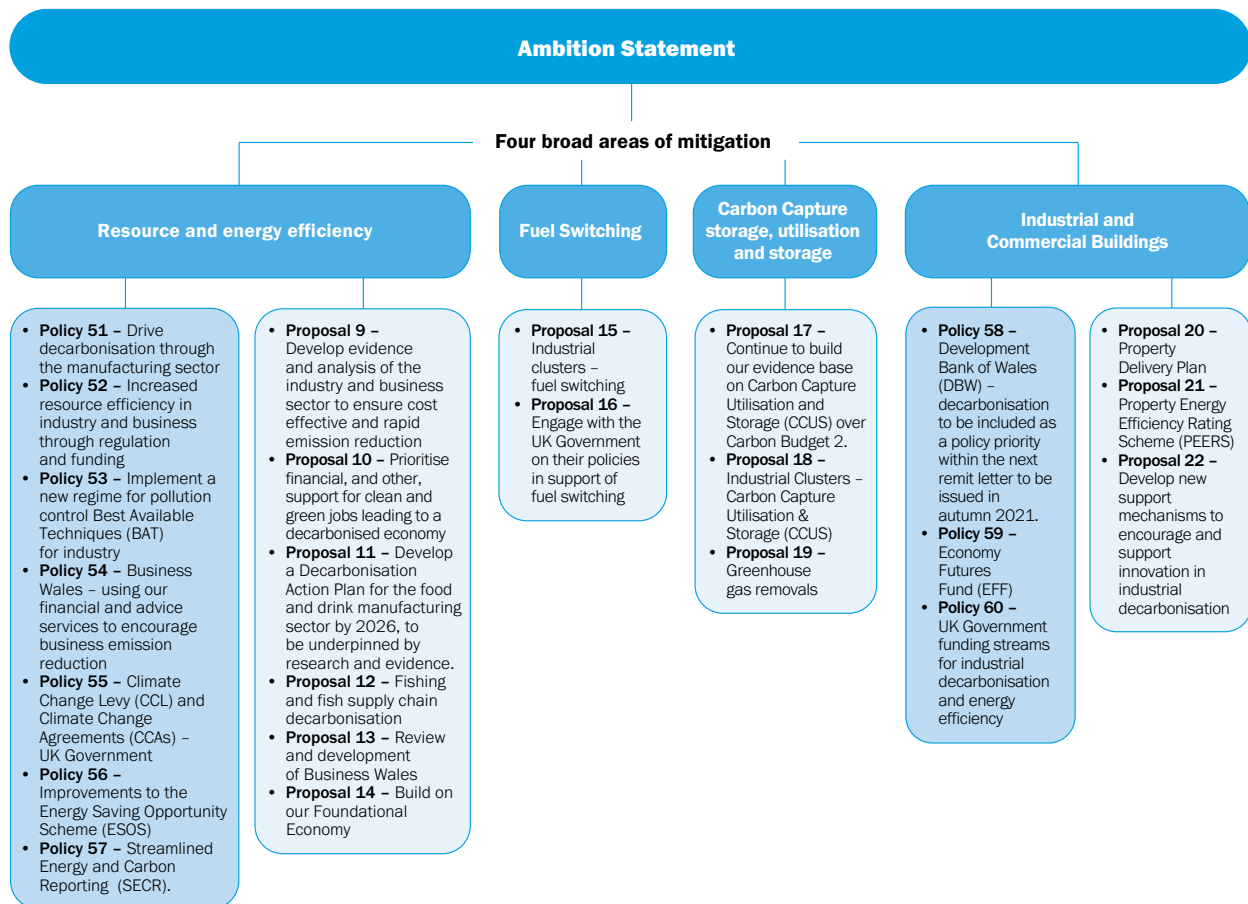
Industrial and Commercial Buildings






We must consider the amount of heating, cooling and hot water used in both industrial and commercial buildings and the materials used to construct them. This includes industrial premises and well as shops, hotels and offices in the private sector.



5. Team Wales Approach

Industry and Business



Team Wales approach The Ask of others	
1. Our Ask of the Welsh Public (Individuals & Households) 	We ask the public to shop and consume goods and service closer to home, supporting local town centres and to also use their buying power to support businesses which are leaders in tackling climate change.
2. Our Ask of the Public Sector 	We ask the public sector to procure from businesses that strive to reduce their carbon emissions and in doing so support low carbon suppliers as part of our wider transition.
3. Our Ask of Welsh Business & Industry 	We ask Welsh businesses to commit to net zero targets and introduce responsible business practices as part of their corporate social responsibility. We also ask that the industrial sector decarbonise industrial processes to enable the transition to a net zero future.
4. Our Ask of UK Gov (Call for UK action) 	<p>We call on UK Government to:</p> <ul style="list-style-type: none"> • Ensure that businesses and industries based in Wales continue to be eligible for any future Climate Change Agreement scheme beyond March 2025; • Be transparent on how funding streams, including the use of UK ETS revenues will be made available to enable decarbonisation and move the Welsh power and industrial sectors beyond simply paying the carbon price; • Develop a solution to allow industry to switch to lower carbon fuels which does not result in the operating environment in the UK being significantly uncompetitive; • Develop symbiotic and circular economy approaches in industry, their current and future supply chains and in the communities which host industrial operations; • Follow the lead set out by the EU on a Carbon Border Adjustment Mechanism (CBAM), which will place a carbon price on imported goods from jurisdictions without a carbon price. This will have the dual effect of levelling the playing field for EU ETS participants and also generating revenues on imported goods with no carbon price, providing further vital funds for decarbonisation.
5. International Engagement 	We ask the international community to maximise links across the world so we can learn from others, develop new technologies required to reduce carbon emissions, including CCUS and hydrogen, and help us to develop new business opportunities

Agriculture

1. Introduction

Scope

The agriculture sector covers soil, livestock, and waste and manure management.

Vision

Our ambition and challenge is to continue to reduce greenhouse gases by **improving efficiencies on farm** to achieve a cumulative effect whilst maintaining the production of high quality and sustainable food and it will be important for all farmers to continue to adopt low carbon technologies as they become available.

As described in the LULUCF chapter, delivering the reductions needed will mean our landscape will continue to evolve as our use of land changes. Delivering this vision will require land use change equivalent to around 10% of agricultural land in Wales, and farmers have an important role to play.

This carbon budget period (2021–2025) covers a time of transition for the sector as we develop and implement our future domestic agricultural policies outside the EU. The Agriculture (Wales) White Paper, published in December 2020, outlined our proposals for what may be the biggest change in agriculture policy for decades, setting out our proposal to introduce primary legislation which will establish **Sustainable Land Management (SLM)** as the framework for future agriculture support. This approach reflects the use of land for food production, whilst ensuring **our natural resources are preserved and enhanced for future generations**.

2. Emissions

Summary of progress to date

Total emissions from the Agriculture sector in Wales have declined by 10% between the base year (1990) and 2019, driven largely by a general decline in livestock numbers and nitrogen fertiliser use.

3. Ambition Statements

The new Agriculture Bill will be the biggest policy change the agriculture sector has seen in decades, our main goal within this carbon budget period will be supporting and preparing the sector to transition into a new way of working, reducing their overall business carbon footprint.

During Carbon Budget 2 we will be developing our Sustainable Farming Scheme and by introducing low carbon farming practices as scheme requirements to all farms across Wales, we will reduce on farm emissions through improved livestock, land and manure management.

10% of agriculture land will be shared to support tree planting by 2050 while maintaining a strong food production sector across Wales

4. Policies and Proposals

Low carbon farming practices

Our planned support for transformation in the sector is reflected in the range of policies and proposals set out below which will encourage the uptake of low carbon farming practices quickly and at scale. Widespread adoption of all appropriate low carbon practices will combine to reduce overall farm carbon footprint.

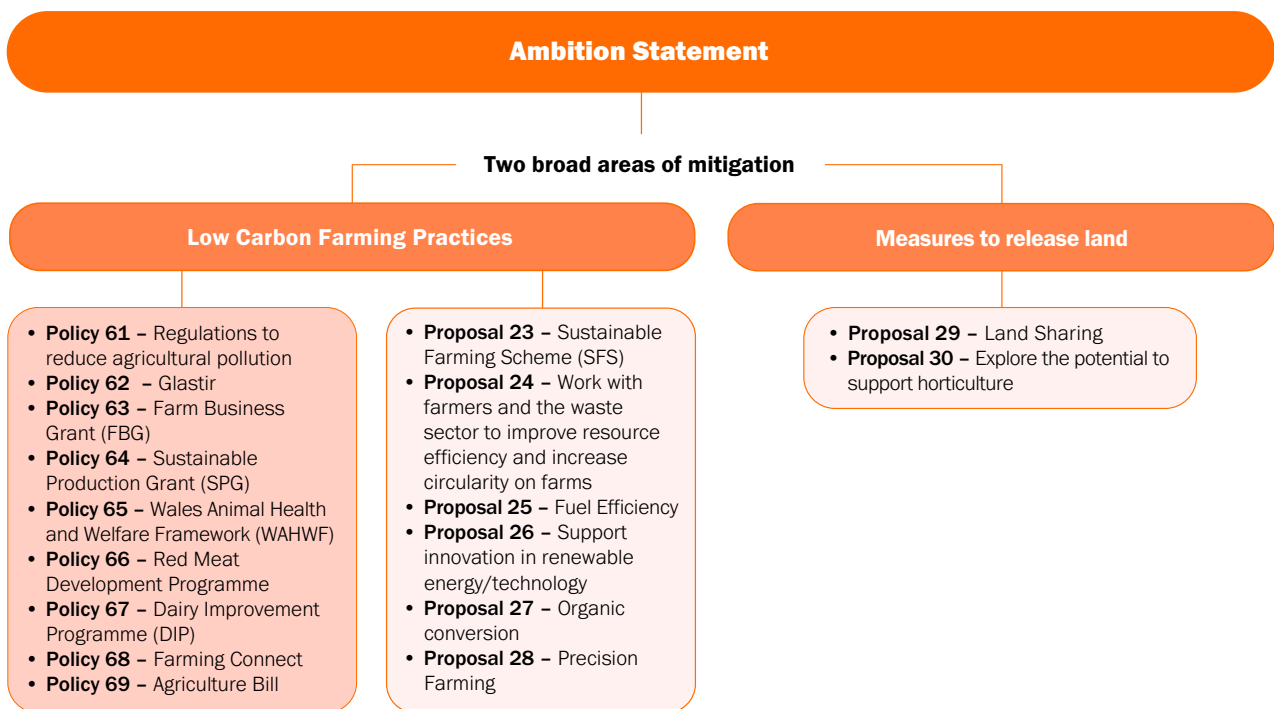
Measures to release Land






Changes in consumer and farmer behaviour can release land from agriculture whilst maintaining an improved food production sector. Improving efficiencies on farm as well as some small changes over time to diet can also release land within Wales.



5. Team Wales Approach

Agriculture



Team Wales approach The Ask of others	
1. Our Ask of the Welsh Public (Individuals & Households) 	We encourage Welsh consumers to eat healthier, more sustainably sourced food and to actively consider the positive impacts of eating locally sourced food and minimising food waste.
2. Our Ask of the Public Sector 	We want Local Authorities to explore how they can support their farms, land and estates to decarbonise, retain existing carbon stores and improve carbon capture.
3. Our Ask of Welsh Business & Industry 	We would welcome net zero commitments from all Welsh farm businesses, processors, retailers and industry representatives, including a commitment to support delivery of net zero carbon throughout the supply chains, including farm input supply chains (for example animal feed, fertiliser and machinery).
4. Our Ask of UK Gov (Call for UK action) 	We call on UK Government to: <ul style="list-style-type: none"> • To ensure future trade deals do not undercut the high agricultural and environmental standards delivered by Welsh farmers. We are working to ensure that sustainability and inclusion lie at the core of future trade policy and we want the emission intensity of agricultural goods, and livestock in particular, to be a consideration when assessing future trade deals; • To ensure a collaborative approach to support the use and development of technology and research, such as genetics, methane reducing feed, feed additives and manure remediation to minimise methane and nitrous oxide release with a view to minimising overall carbon footprint and environmental impact.
5. International Engagement 	We ask the international community to match Wales' standards with regards to decarbonisation of agriculture and food safety and to commit to halting deforestation.

Land Use, Land Use Change and Forestry (LULUCF)

1. Introduction

Scope

The LULUCF sector covers carbon emissions and sinks associated with land use including from forestry, urban land use and peatland.

Vision

LULUCF is the only sector with the capability to remove emissions from the atmosphere. Wales must protect ancient woodlands, manage our soils better and affect a step change increase in woodland creation. **We want to plant 43,000 hectares of new woodland by 2030 in this decade of action and 180,000 hectares by 2050.**

Planting more trees will capture and store carbon, but can at the same time provide **a wide range of other benefits to Wales, including creating 'green' jobs, helping to address the nature emergency, increasing well-being, and mitigating flooding and air quality issues.**

Delivering this vision will require land use change. 180,000 hectares is equivalent to around 10% of agricultural land in Wales, and farmers have an important role to play. It will involve planting of new woodlands and also increased planting of 'hedges and edges', such as trees along field boundaries, scattered trees and shelterbelts.

As well as increasing woodland creation we are committed to increasing other natural carbon stores. **Restoring and maintaining peatlands in good ecological condition will capture and store carbon, and also sustain their rich biodiversity.** Over the next 5 years **we will aim to restore 600-800 hectares of degraded peatland each year** through our National Peatland Action Programme. Blue carbon habitats such as seagrass and saltmarsh habitats currently sequester at least 26,100 tonnes of carbon per year and store at least 113 million tonnes of carbon in Welsh waters for the long term. We will begin targeted restoration of these habitats to capture and store carbon.

2. Emissions

Summary of progress to date

Between the base year (1990) and 2019, the LULUCF net sink has changed from being a source of emissions at 78 MtCO₂e to a sink of emissions at -245.99 MtCO₂e. Since 2001, the LULUCF sector in Wales has been almost always a net sink of greenhouse gases, only being a net source in 1990, and then briefly between 1999 and 2000.

3. Ambition Statements

Wales will increase woodland creation rates, committing to supporting a total of 43,000 hectares of new woodland by 2030 and 180,000ha by 2050. Over 3,000 hectares of Peatland will be on a recovery pathway by 2025.

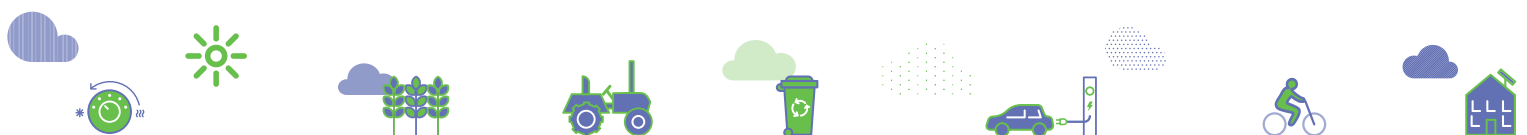
4. Policies and Proposals

Increasing Tree Cover

Many of the trees planted will contribute to the new National Forest for Wales. The National Forest will be made up of areas of high quality woodland, stretching from the north of Wales to the south. It will be made up of both existing woodlands and newly created woodlands. These will be multi-purpose woodlands, benefitting nature, and creating amenity to be enjoyed by the people of Wales and visitors.

Safeguarding & increasing carbon stores in soils and biomass

Our planned support is reflected in the policies and proposals set out in NZW, which will safeguard and increase carbon stores.



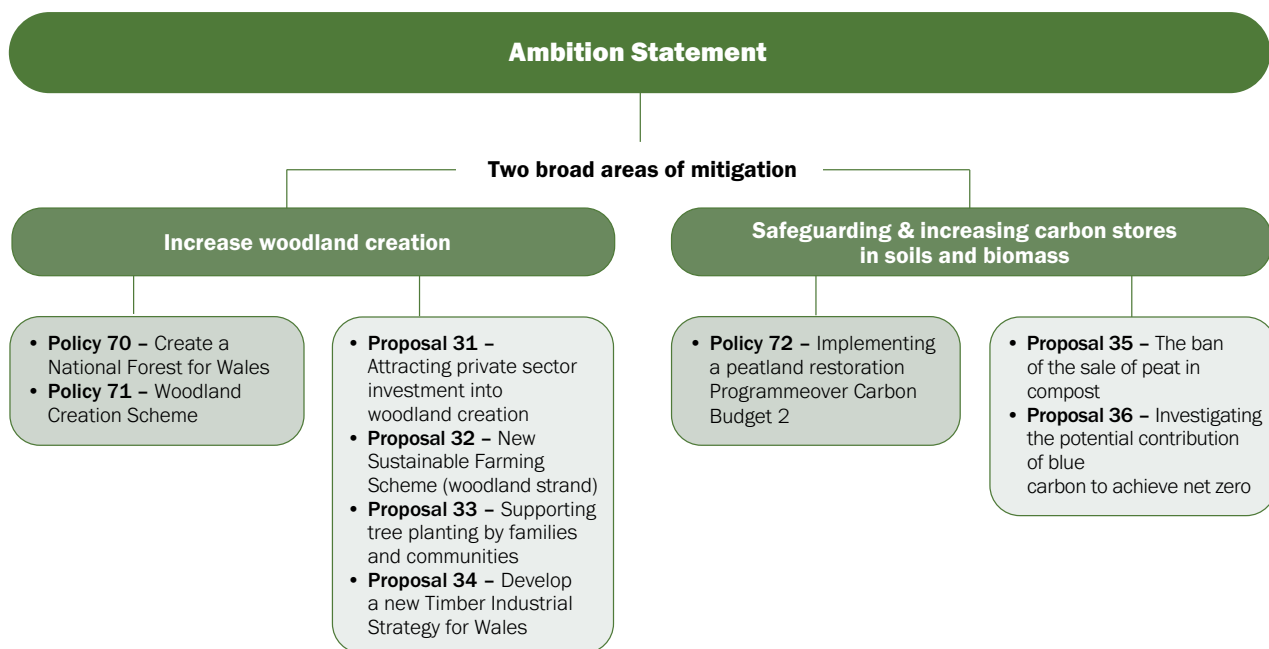
We will:






- Deliver 600-800 hectares of peatland restoration per year by implementing the National Peatland Action Programme.
- Convene a national peatland restoration practitioners group to help ensure consistency of delivery.
- Consult alongside the UK Government on a proposal to ban the sale of peat in compost.
- Establish a targeted scheme to support restoration of seagrass and saltmarsh habitats along our coastline.
- Deliver a shared blue carbon evidence plan through the Welsh Marine Evidence Strategy for 2019 – 2025.



5. Team Wales Approach

LULUCF



Team Wales approach The Ask of others	
1. Our Ask of the Welsh Public (Individuals & Households) 	<p>We encourage everyone in Wales to have the to plant a tree in their garden, school or community and to also better understand the importance of peatlands and the ecosystems services; and increase their awareness of the damaging effects of using peat based compost can have.</p>
2. Our Ask of the Public Sector 	<p>We ask that public bodies map land they own to identify where more trees can be planted and to better understand the sequestration potential of their land. We also call on public sector organisations to produce costed action plans for the restoration of peatlands under their direct management or influence, and to allocate budgets to this purpose.</p>
3. Our Ask of Welsh Business & Industry 	<p>We ask businesses to consider the use of Welsh timber as a sustainable material, and to plant trees on their land if possible and appropriate. We also need businesses to support investment in peatland restoration.</p>
4. Our Ask of UK Gov (Call for UK action) 	<p>We call on UK Government to:</p> <ul style="list-style-type: none"> • Come forward with clear plans for how the European funds we historically utilised, will be made available to Welsh Government; • Engage with us and other devolved governments to ensure a UK-wide approach to the phasing out of horticultural peat.
5. International Engagement 	<p>We would like to encourage other nations to follow its example by supporting tree planting projects across the world, building strong links with international institutions, local governments and communities to support them in dealing with climate change.</p>



Waste Management

1. Introduction

Scope

The waste management sector covers the collection and treatment of waste and recycling. It is an important economic sector in Wales, and a part of the foundational economy.

Vision

The vision for waste in Wales is clear: by 2050, there will not be any waste as everything will be reused or recycled. Beyond Recycling – a strategy to make the circular economy in Wales a reality was published by the Welsh Government in March 2021 and sets goals for zero waste to landfill by 2025 and zero waste (100% recycling) by 2050. This means that after 2025, there will be no need for new landfills for waste generated in Wales. This vision **delivers all sorts of benefits to health, to the well-being economy, to society** as well as to our emissions.

2. Emissions

Summary of progress to date

Total emissions from the waste sector in Wales have declined by 64% between the base year (1990) and 2019, driven largely by the reduction in the landfilling of biodegradable waste and also through progressive introduction of methane capture and oxidation systems within landfill management.

3. Ambition Statements

Between now and 2050, we will build on our strengths as one of the world's highest recycling nations, to become a zero waste nation by 2050. That will mean that virtually no materials are buried or burned and we have effectively 100% re-use and recycling. By keeping resources in use the sector will support the wider transition to a circular more resource efficient and net zero carbon economy.

By encouraging behaviour change and improved waste management, we will continue to reduce the amount of waste that ends up in landfill sites, prioritising the reduction of biodegradable waste to as close to zero as possible by 2025.

By 2025, greenhouse gas emissions from landfill sites will reduce by 19%, compared to 2019.

4. Policies and Proposals

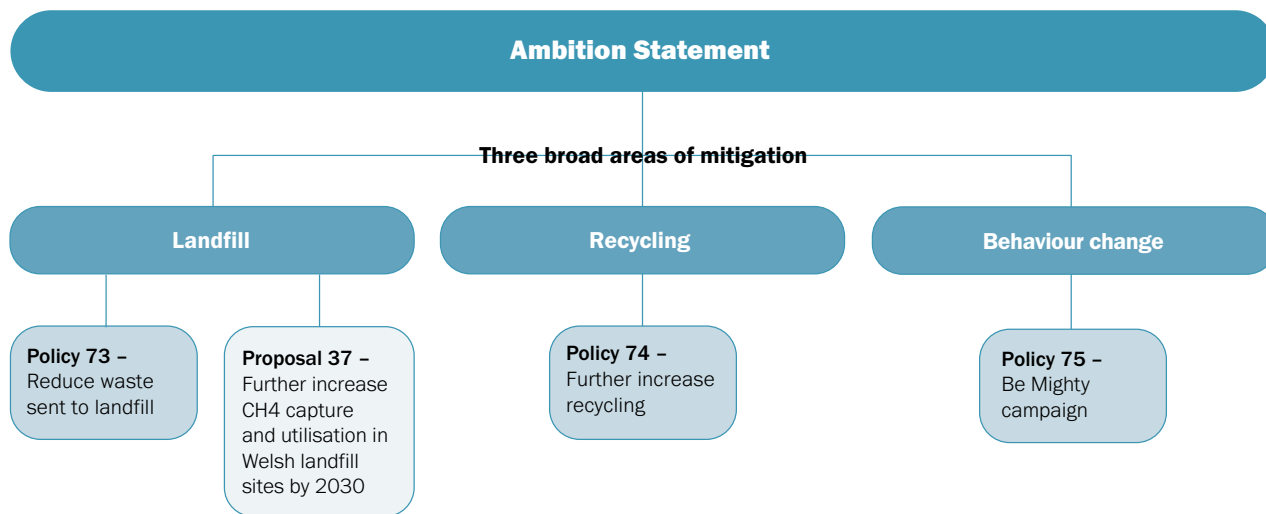
Our focus in this chapter is on the direct emissions from the waste sector. The policies and proposals set out how we will continue our action to reduce landfill and maximise recycling, alongside the actions covered elsewhere in the plan to prevent waste from arising in the first place as part of our wider circular economy strategy.






The way people think about waste has been at the heart of the significant progress on recycling rates to date and Wales' journey to become a recycling nation. To deliver on the ambition of the Welsh Government to become a zero waste nation by 2050 we will require considerable further action. The way people behave will continue to be fundamental to our approach.

5 <https://gov.wales/sites/default/files/publications/2021-03/beyond-recycling-strategy-document.pdf>



Waste Management



Team Wales approach The ask of others	
1. Our Ask of the Welsh Public <i>(Individuals & Households)</i> 	<p>We ask the public to continue separating recyclables, reuse and recycle where possible and only buy what they need in order to reduce waste. We also would encourage a sharing economy within communities to redistribute surplus food from the supply chain to communities in need, thus preventing food waste going to landfill.</p>
2. Our Ask of the Public Sector 	<p>We want the Public Sector organisations to demonstrate leadership in reducing overall business emissions and leading by example by reducing its own waste by increasing recycling and purchasing reused and remanufactured products reducing waste being sent to landfill.</p>
3. Our Ask of Welsh Business & Industry 	<p>We encourage Welsh Businesses to reduce their waste, increase recycling and use more sustainable / recycled materials in manufacture and construction.</p>
4. Our Ask of UK Gov <i>(Call for UK action)</i> 	<p>We call on UK Government to:</p> <ul style="list-style-type: none"> • End the use of landfill as a waste management option so the 18% of the landfilled waste that is imported into Wales is reduced as soon as possible and no biodegradable waste is sent from outside of Wales to landfill here. • Work jointly and share information on research projects looking at landfill aftercare, including the planting of trees on old landfill sites as a means of carbon sequestration. • Collaborate with Wales on wider measures for extended producer responsibility for packaging, and potentially for other product waste streams such as mattresses, furniture and textiles.
5. International Engagement 	<p>Commitment:</p> <p>The Welsh Government, along with the UK Government will continue to review EU Policy developments regarding products imported and consumed in Wales; and will continue to improve the coverage of resource efficiency and a circular economy ensuring Wales complies with the 'Sustainable Consumption and Production' UN Sustainable Development Goal.</p>

Public Sector

1. Introduction

Scope

The previous emission sector chapters focus mainly on the emissions within their areas. However, the public sector has a much greater role, in not only removing carbon from its own estate but within their span of leadership influence and operations. The importance of the public sector is seen across the other emissions sector chapters to help drive change. This chapter is focussed on the wider role.

Vision

Net Zero Wales - Public Sector by 2030 – A Fairer, Greener Wales

Our ambition is for the Welsh public sector to be collectively net zero by 2030, radically reducing emissions from over 780 organisations. These organisations deliver vital public services including health and social care, protecting people and the environment, education, culture and the arts - they support and shape communities and have a shared focus on improving the economic, social, environmental and cultural wellbeing of everyone in Wales.

2. Emissions

Summary of progress to date

Although we have data in terms of direct emissions from the buildings, we currently do not have data on emissions from the wider scope of the public sector. However a growing number of public sector organisations have declared a climate emergency and are reporting on their carbon footprint individually or as sectors.

As the biggest emitter within the public sector (around 1.00 MtCO₂e in 2018/19) the NHS has been a first mover in tracking and reporting progress through its NHS Wales Carbon Footprint Report 2018-19 and compared to 2016/17 has shown a small reduction in its 2018/19 footprint of 4.8%.

3. Ambition Statements

Our ambition is for the public sector to be collectively net zero by 2030.

4. Policies and Proposals

Toolkits to support the change

The Welsh Government has worked with partners across the public sector to co-create a toolkit of support, which includes A route map for decarbonisation across the Welsh public sector and Welsh public sector net zero carbon reporting guide.

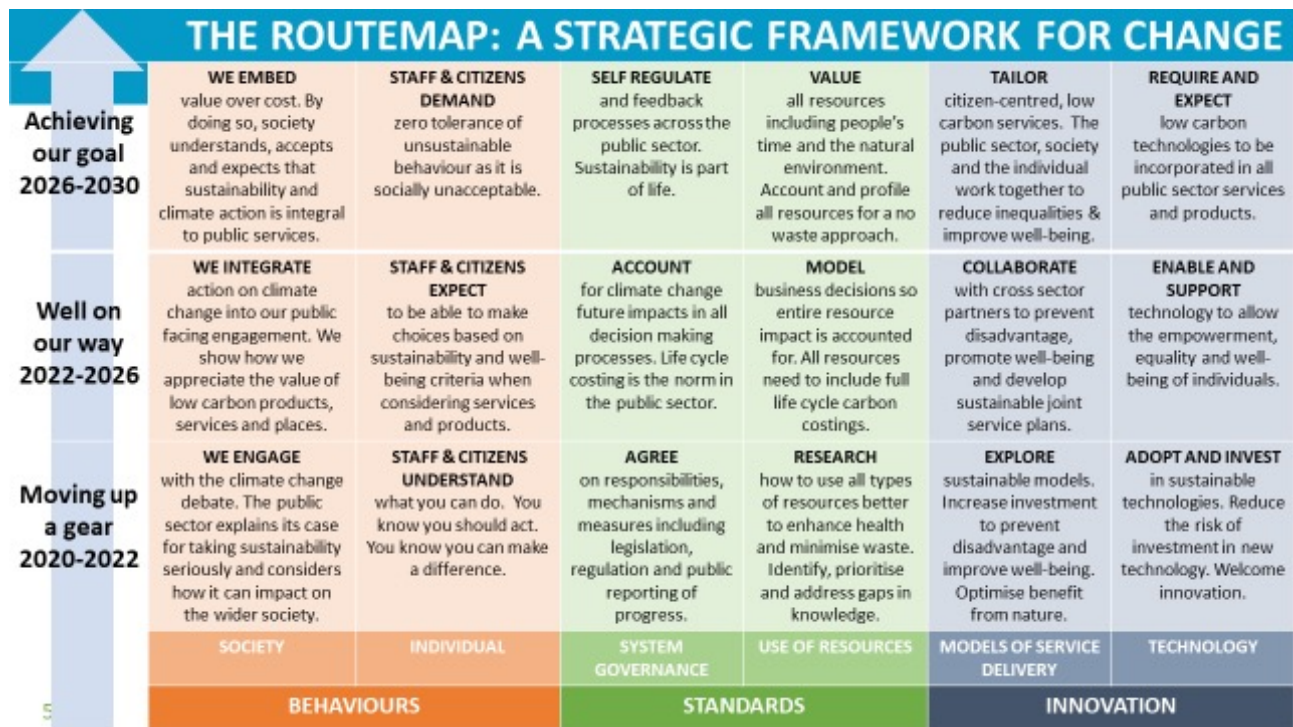
6 Total emissions from the Public sector in Wales have declined by 58% between the base year (1990) and 2019. Overall, emissions from public sector buildings have declined by 3% between 2018 and 2019.

7 This ambition statement covers the wider scope of emissions, which are being looked at as part of the chapter. For our legislative pathway, assumptions around public sector buildings have been built in to the pathway



Published in August 2021, the Route map for decarbonisation provides a strategic overview of the priority areas for action and milestones needed for the Welsh public sector to collectively reach net zero by 2030. The framework is intended to support public sector organisations in the development of their own strategic plans setting out a three phased approach – 1) Moving up a gear (2021-22) 2) Well on our Way (2022-2026) and 3) Achieving our Goal (2026-2030).

Whilst most organisations have already started to ‘move up a gear’ we now need all public sector bodies to be ‘well on their way’ with clear actions to achieve net zero and be preparing for the final phase ‘achieving our goal’ from 2026.



Complementing the route map, the Welsh Public Sector Net Zero Reporting Guide details the principles and priorities for the Welsh public sector reporting approach. The guide provides a set of instructions to support the public sector to consistently **estimate baseline emissions, identify priority sources and to monitor progress** towards meeting the collective ambition of a net zero public sector by 2030.

Overview of Part 4 – Monitoring and Reporting

This section in the full Net Zero Wales plan describes:

How we will achieve our overall emission reductions, including how we are accounting for the policies in the plan;

For Carbon Budget 2, although we have accepted the advice of the CCC about what our long term 2050 pathway targets need to be, it is up to Welsh Ministers working in partnership with the Welsh people to agree how we get there. Since the last plan we have been further developing both our evidence base and our Wales 2050 emissions calculator.

The Wales 2050 calculator is a scenario based emissions projection model with a 2050 time horizon, covering all emissions sectors. The model allows the user to explore different pathways to decarbonisation and generates quantified emission outputs, based on the user choices made.

How we are counting the cost of carbon and money;

Over Carbon Budget 2, working with Wales Centre for Public Policy, we aim to improve our understanding of how to effectively count the carbon impact of decisions and how multiple decisions interact to impact our overall targets. We have already started some of this work, and have included the early outputs in the Transport chapter as an exemplar to show how our understanding and approach is evolving.

Our emission reduction targets are set at a Wales level and as such, this is an All Wales plan, recognising that actions will need to be taken by everyone. This means that the costs and benefits will also be shared across society.

According to the CCC's recommended pathway (the Balanced Pathway), over this 5 year period, the total additional investment cost is estimated to be approximately £4.2 billion, compared to a

baseline of no further climate action.

There is a great deal of uncertainty inherent in estimating future costs associated with long-term emission targets which increases over time. The uncertainty comes from questions about the cost and development of future low-carbon technologies, the future actions of government, business, other social groups and individuals. Irrespective of this uncertainty, we are looking to continually boost our evidence base and improve our understanding of the costs associated with reaching net zero, to help us facilitate the least-cost low-carbon transition.

How we have developed the Plan, guided by the sustainable development principle within the WFG Act; and

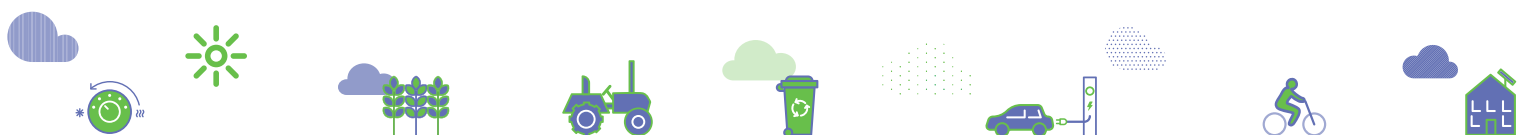
The Plan contains commitments from across Government and wider stakeholders.

Recognising policy action on climate change is constantly evolving and developing, in July 2020 (with an update in March 2021) we published an updated Engagement Plan highlighting how we would involve and collaborate with stakeholders throughout the process, rather than engaging on a near-finished product at the end.

The collective action set out in this Plan provides better outcomes for the planet and people, both present and future generations.

We recognise the importance of understanding and demonstrating how our collective action is contributing to the achievement of the well-being goals, and our specific well-being objectives for this government term. Therefore we commissioned an independent Sustainability Appraisal (SA) of the plan.

Policies and proposals in each major emissions sector have been appraised in order to determine the cumulative effects of each policy area/topic. In addition, a cumulative effects assessment has been undertaken in order to clearly identify areas where policies work together.



How we will monitor the delivery of the Plan.

The plan sets out our action over Carbon Budget 2. It is vital that we track and drive its implementation to ensure we make progress towards our targets and budgets in a fair and just way. To track our progress we have developed a comprehensive system to monitor delivery including:

- **Legislation** – requiring us to produce an assessment against our targets and budgets every 5 years. The next report is due in 2022.
- **Indicators** – tracking general progress towards our targets and budgets on an annual basis. We will publish our Wellbeing of Wales report annually.

- A **monitoring and reporting system**, which looks more in depth at the Welsh policies within the plan
- **Independent Progress reports** from the CCC
- Scrutiny from the **Senedd** and Senedd committees

Overview of Part 5 – Next steps

Net Zero Wales is the first all-Wales Plan to tackle the climate emergency, and the first which has net zero as its guiding ambition. We are at the start of a new phase in our journey. This Plan is a snapshot in time. It does not contain a complete list of the policies or proposals to be developed within the current government term and we believe there will be many areas where we can work with others to develop new or strengthened policies. This plan does, however, signal our intent, our commitment and our direction. As we move through the early 2020's further policies will be developed and action across Wales will continue to apply downward pressure on our emissions.

This is the decade of action and so the next steps in the journey must be purposeful engagement and delivery of our commitments.

We will be publishing our next Plan in 2026 with the development of the plan commencing in 2025. We will also set our Carbon Budget 4 (2031-35) in regulation in 2025.

Further detail is available in the full Net Zero Wales plan and annexes.

ISBN: 978-1-80391-147-2

