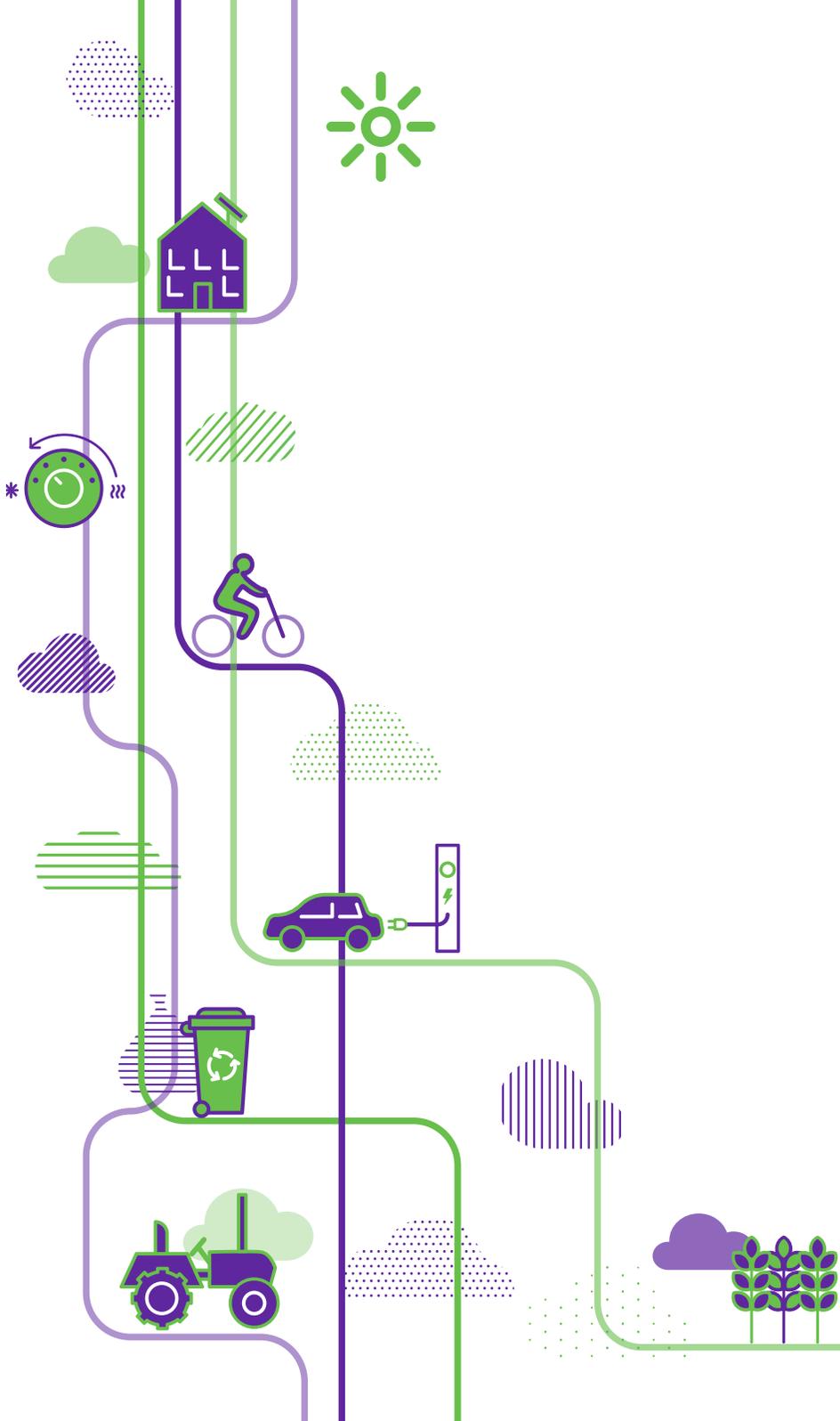




Llywodraeth Cymru  
Welsh Government



Welsh Government's

# Net Zero Strategic Plan

September 2022

## About this Strategic Plan

The Welsh Government welcomed support from the Energy Service to coordinate the development of our Plan to achieve net zero as an organisation. Production of this Plan would also not have been possible without support from stakeholders across the organisation who have contributed to its development. Colleagues from across Welsh Government have provided data, ideas, and feedback to help identify priorities that we will commit to delivering in working towards our objectives.



## Foreword



A handwritten signature in black ink, which appears to read 'Andrew Goodall'.

**Dr Andrew Goodall**

Permanent Secretary of the Welsh Government

The Programme for Government outlines our commitment to embed our response to the climate and nature emergency in everything we do. This follows the Welsh Government declaring a Climate Emergency in 2019.

This Plan sets out how we will play our part in responding to the climate emergency and align with Welsh Ministers' ambition for the public sector to be collectively net zero by 2030. It also demonstrates our delivery against the requirements of the Wellbeing of Future Generations (Wales) Act 2015, which directs us to consider long-term persistent problems such as poverty, health inequalities, and climate change.

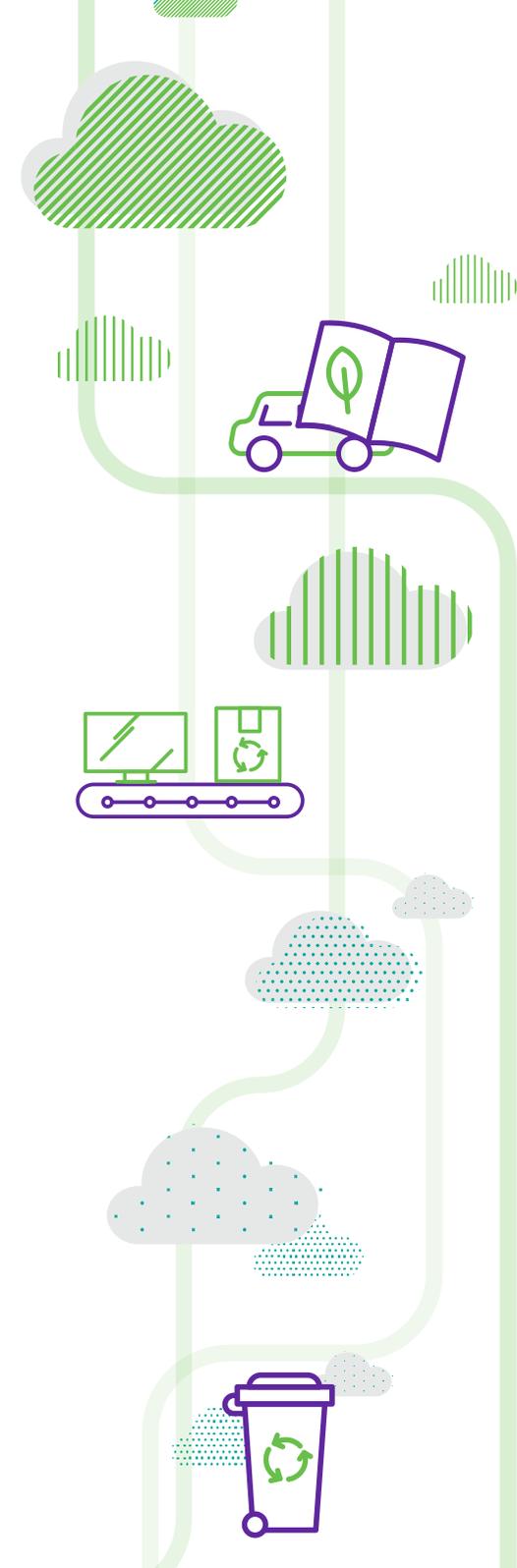
As an important public sector employer with large financial resources, the Welsh Government has an important role to play to contribute toward the 2030 ambition and to lead by example by showing what can be achieved to address the climate emergency. We need to be at the forefront of reducing greenhouse gas (GHG) emissions (also known as carbon emissions), so our targets and our actions need to be ambitious.

In 2019-20, our carbon emissions resulted in more than 156,545 tonnes of carbon dioxide equivalent tCO<sub>2</sub>e to align with rest of the report. and in line with [Aether report](#). These GHG emissions come from a range of sources, some of which we have direct control over, such as buildings, recycling, travel, and energy and material use, whilst others, such as supply chain emissions, are more challenging. This highlights the complexity of the challenge we need to embrace, but by understanding the issues, we can work together to address them. In some instances, we will need to consider fundamental changes in our approach to policy development and investment decisions, and changes in both our corporate behaviour and that of the individuals within the organisation. This change will help deliver our Net Zero Strategic Plan, deliver the 2030 net zero ambition and also lead the rest of Wales in addressing the climate emergency.

The Welsh Government Net Zero Strategic Plan sets out 54 initiatives that will be assessed and reviewed in 2025 and 2030. These ambitious initiatives and targets rely on us increasing our efficiencies, keeping materials in use and avoiding waste, investing in decarbonising our buildings and vehicles, and changing the way we behave so that low carbon becomes the default choice in every action we take. It also relies on changing the way we work with suppliers and partners. Our decisions can influence them so that they join us on our journey to net zero. Reducing carbon emissions must become integral to our decision and policy making process, it must be seen as business as usual.

I would like to thank everyone who has so far contributed to the development of this Strategic Plan, from those who helped establish the data for emissions, to those of you who have helped form the initiatives and steps we need to take to achieve net zero. The development and the delivery of this Net Zero Strategic Plan is based on partnership and engagement.

Lastly, I would like to conclude by saying that we all have a role to play in the decarbonisation of Wales and achieving net zero. The choices you make as an individual, as well as an employee, will play an important role in reducing our carbon emissions and in acting as an exemplar for the rest of Wales.



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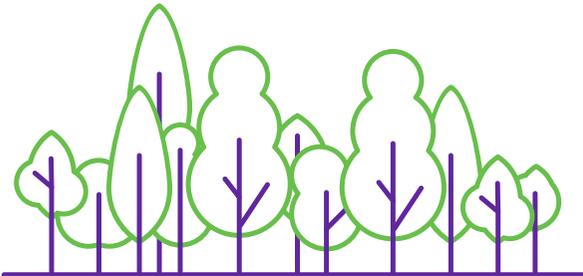
## Executive summary

### Aim of the Net Zero Strategic Plan

The Welsh Government has a central role in addressing the climate emergency in Wales. We are an important public sector employer in Wales and have large financial resources and significant assets under our influence.

**We want to lead by example and have the ambition to achieve net zero as an organisation by 2030, in doing so contributing to the collective 2030 Welsh Public Sector net zero target.** Our organisational net zero target binds us to an ambitious decarbonisation trajectory that will require transformational change across the Welsh Government organisation.

**This Strategic Plan brings together evidence from across the Welsh Government to outline our priority decarbonisation initiatives.** It is part of an ongoing process that identifies opportunities to reduce our carbon footprint and monitor progress in alignment with net zero.



### Our carbon footprint

We have produced the Public Sector Net Zero Reporting Guide which establishes the principles for carbon accounting and reporting for public bodies in Wales. We recognise the need to evolve the approach over time, but as a first step, we have reported our baseline carbon emissions for the 2019-20 financial year.

Our carbon footprint tCO <sub>2</sub> e	2019-20
Operational emissions	24,516
Supply chain emissions	131,900
Land use	129
<b>Total emissions</b>	<b>156,545</b>

**In 2020-21, we reduced our footprint by 18%** compared to 2019-20, in part due to the effects of COVID-19, but also due to our efforts to reduce our environmental impact. We have already made progress to improve energy efficiency, renewable generation, operational efficiency, and engage our suppliers; but this Strategic Plan will now help us go further and increase activity towards the 2030 target.

### Our strategic plan to achieve net zero

The Science Based Targets Initiative (SBTi) provides a comprehensive definition of **organisational net zero**. This standard has been designed for private sector companies; however, we are aligning ourselves to the SBTi definition in the absence of a public sector organisational net zero standard.

**To achieve net zero, in alignment with the SBTi, we will have to reduce our total emissions in 2030 by at least 90% relative to our baseline year, 2019-20.** Only when we have established how we will reduce our emissions as much as possible will we consider greenhouse gas removals to offset any residual emissions that cannot be eliminated.

#### INSIGHT:

Our 2019-20 carbon footprint baseline is equal to 156,545 tCO<sub>2</sub>e, equivalent to heating and powering 44,000 homes for a year.

**To drive progress towards net zero, we have set both quantitative and qualitative targets.**

We have set a measurable carbon reduction target for our operational emissions and qualitative targets for our supply chain whilst the carbon accounting approach is established.

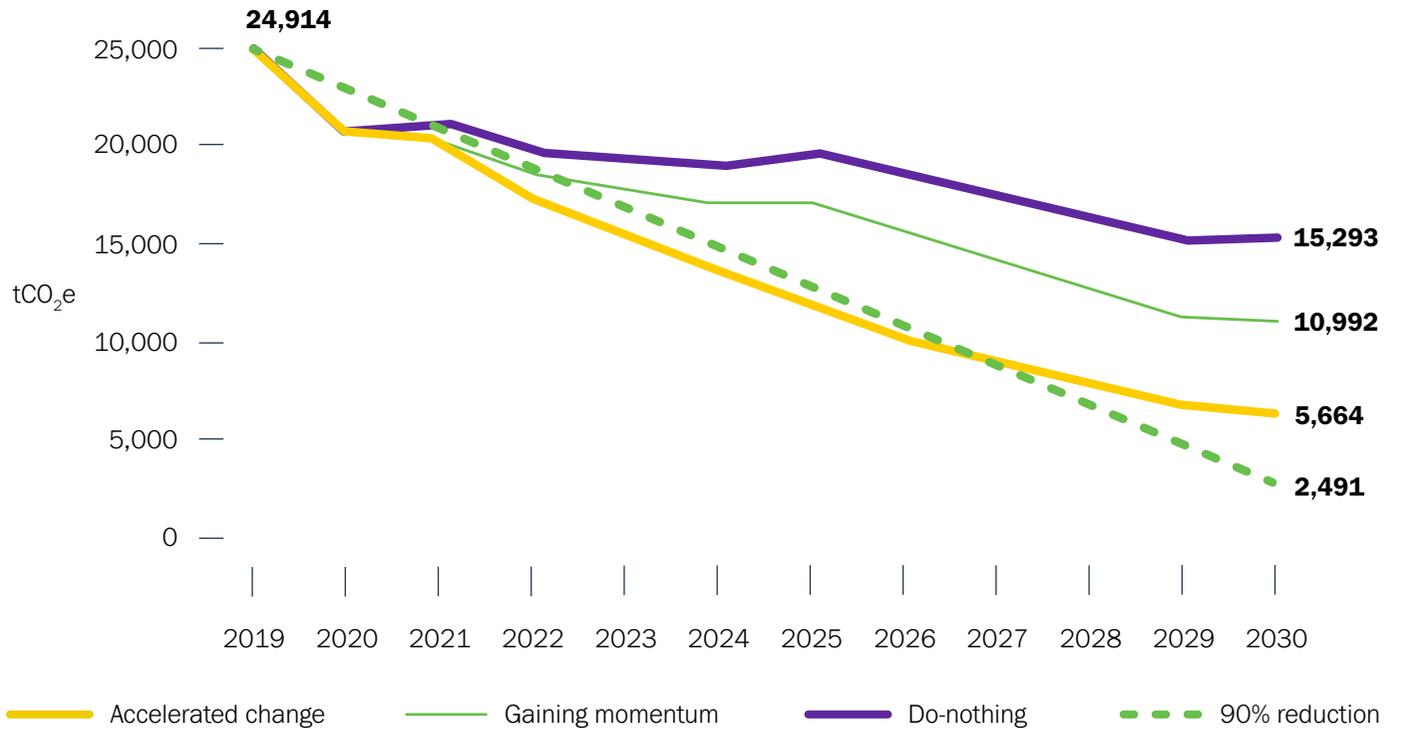
**Our operational emissions target for 2030 is 2,491 tCO<sub>2</sub>e.**

Initial pathway modelling for this Strategic Plan indicates we will achieve a 55-75% reduction by 2030, showing that even our most ambitious pathway at this stage will leave us with a gap-to-target of 15%. We, therefore, need to accelerate activity, maximise delivery, and go further if we are to meet our goal.

**If we maximise all that we can do, we will be in a net zero ready position by 2030.**

Our residual operational emissions will be minimised as far as possible and will reduce further as our national energy systems and transport modes shift towards net zero.

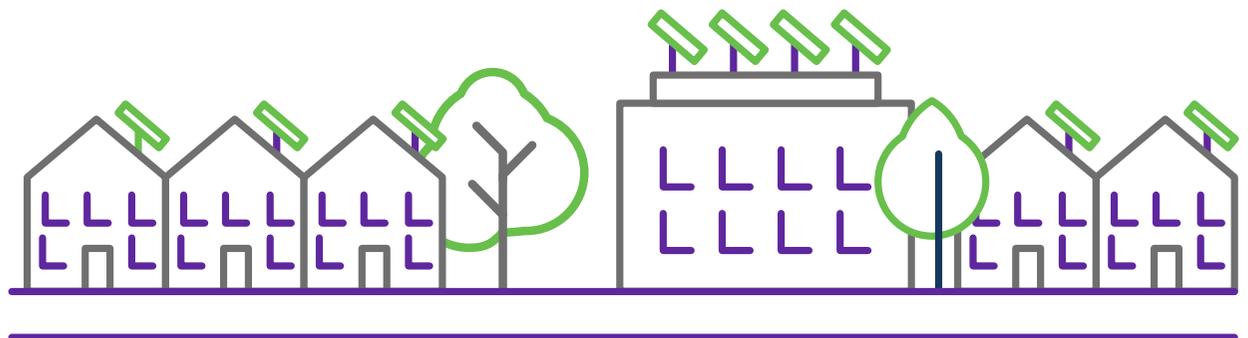
**Operational emissions (inc. homeworking emissions) tCO<sub>2</sub>e**



**Operational carbon reduction target**

Science Based Target Initiative aligned 90% emission reduction based on a 2019-20 baseline:

**2,491 tCO<sub>2</sub>e**



**Our emissions pathway is dependent on change at employee, organisational and national levels.** We must affect change everywhere we have a direct and indirect influence. This includes influencing our suppliers, growing the circular economy, and directly contributing to the decarbonisation of the electricity grid.

Our qualitative targets are set to drive progress for supply chain carbon accounting, supply chain decarbonisation, renewable generation, resource efficiency and land use for greenhouse gas removals.



## Qualitative targets

1. In 2023 we will have set out an evolution plan for carbon emissions assessment in tenders and contracting, this will set out when net zero suppliers' requirements will be in place.
2. By 2025 we will have a firm understanding of our scope 3 supply chain emissions and be able to set out a quantifiable target in our next Strategic Plan.
3. We will directly contribute to renewable electricity generation capacity to meet the 1GW local ownership target for Wales by 2030.
4. We will directly contribute to the creation of a National Forest to extend from the north of Wales to the south.
5. We will procure on a basis that prioritises goods and products made from remanufactured, refurbished and recycled materials.

These will shift to quantifiable targets, with our supply chain aligning to an overall 90% reduction in emissions.

## Net zero strategic initiatives

**This Strategic Plan sets out 54 initiatives that provide the foundation for the Welsh Government to progress towards net zero.** Delivering these initiatives will be embedded into the responsibilities of our staff, and will reflect our direct internal action to address the climate emergency.

**The initiatives cover our entire organisation,** from the operation of our buildings, the way we travel, the way we procure our goods & services, and our future ways of working.

### **The scale of change needed is transformative**

– energy and resource efficiency upgrades, renewable heat & power, switching to more sustainable materials and moving to a zero emissions fleet will all need to be effectively deployed. Alongside this, we need efficient operations, low carbon procurement practice, and support for our staff at home and commuting to progressively decarbonise.

### **Building on our existing work, we must now put these strategic initiatives into action.**

To address each initiative, we will set out an Action Plan with specific actions, responsibilities, and timescales for implementation.

## Next steps

**Across our organisation, we must now focus on delivering and sustaining climate action.**

Implementing this Plan and achieving net zero will require an enabling environment, where choosing net zero aligned options becomes the norm, culturally embedded and self-regulating.

**The Executive Committee of the Welsh Government Board (ExCo), our most senior management body, will assume ownership of this Strategic Plan.** The Chief Operating Officer (COO) will take responsibility for driving the ongoing development and action to implement the Strategic Plan and will be accountable for its success.

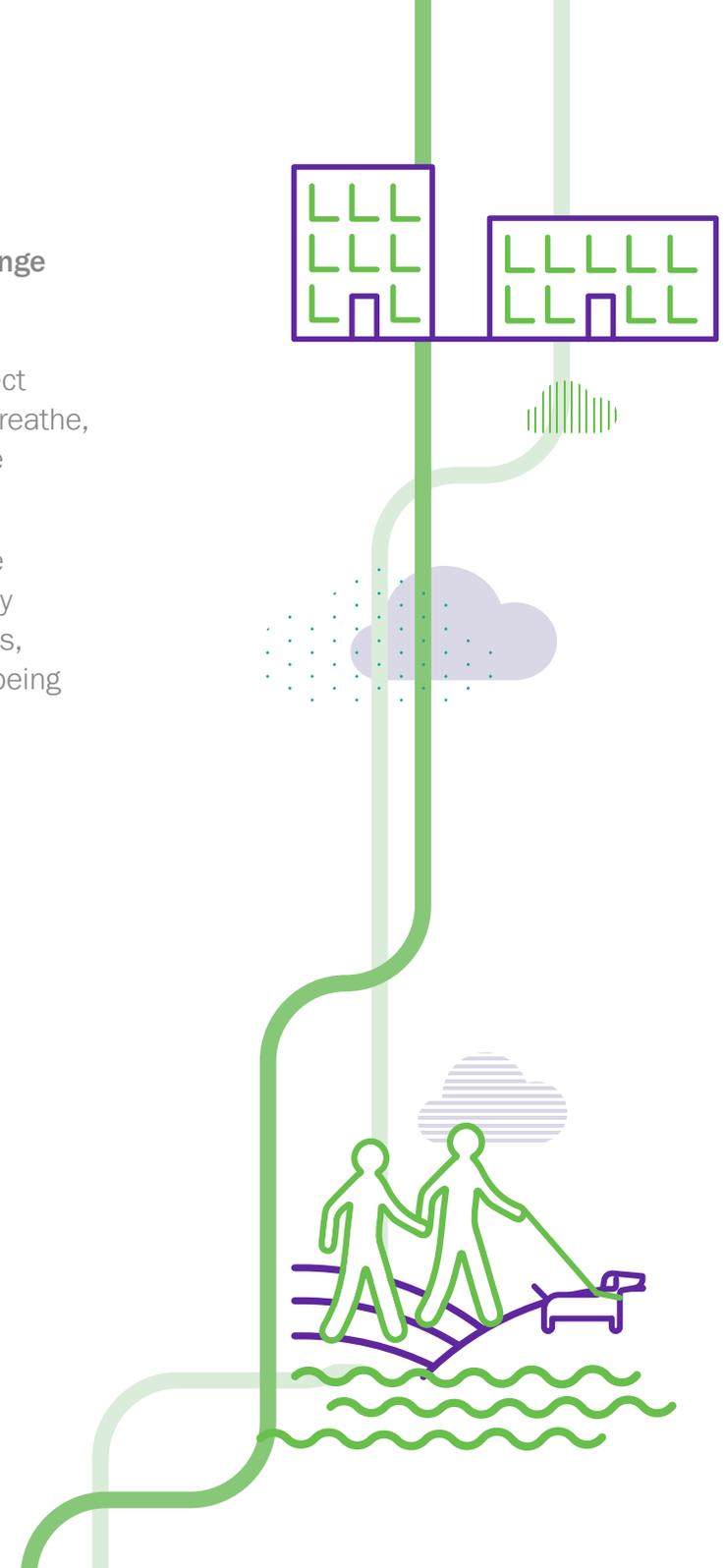
**Mobilising a governance structure, detailed action planning and securing the necessary resource and finance are all critical next steps.**

We will increase the scale and speed at which we drive decarbonisation across our operations.

**Addressing the climate and ecological emergency is the most significant challenge for our generation.**

Whilst our ambition is significant, we must act now. Our actions must reduce our emissions and also protect biodiversity and nature, clean the air we breathe, build our climate resilience, and add value to Wales.

We will be judged on the work we do in the coming years. We must show leadership by example for what can be achieved in Wales, to secure our future, and protect the well-being of our future generations.



# Towards a net zero Wales

Since declaring a climate emergency in 2019, and responding to advice from the Climate Change Committee, Wales has legislated to reduce greenhouse gas (GHG) emissions (also referred to as carbon emissions) to net zero by 2050.

Wales has established a series of statutory 5-year carbon budgets that define the pathway to meet the target. Net Zero Wales, published in 2021, sets out 123 policies and proposals to meet the second carbon budget (2021-25), whilst also delivering against the 7 well-being goals in the Well-Being of Future Generations (Wales) Act 2015.

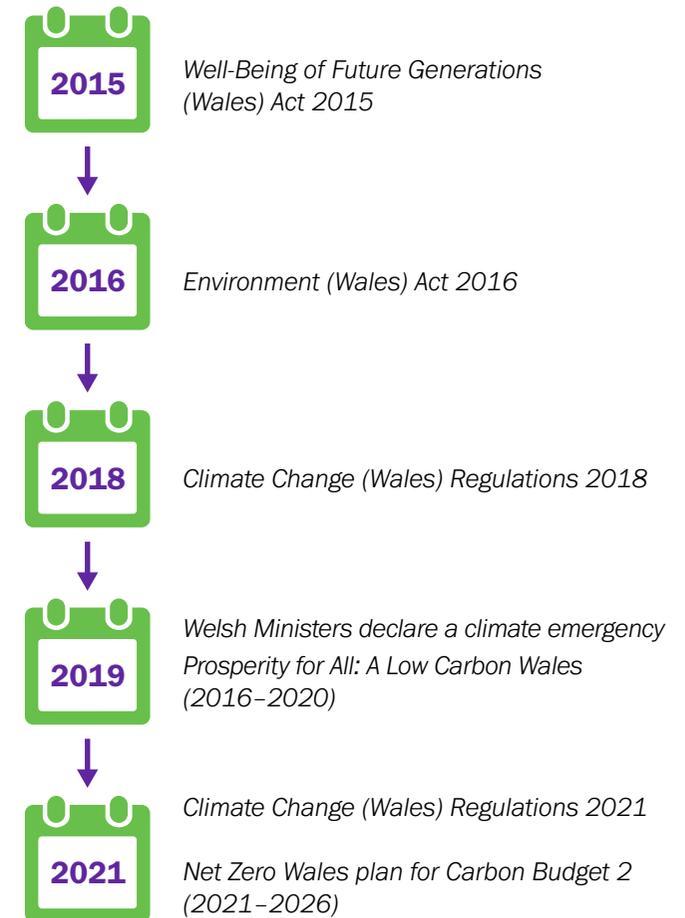
Net Zero Wales sets an ambition for the Welsh “**public sector to collectively reach net zero by 2030**”. The Welsh Government produced the Net Zero Carbon Status by 2030 Route Map<sup>1</sup> (May 2021) as a strategic overview of the priority action areas and necessary milestones to support public sector organisations in the development of their strategic plans.

The Welsh Government has also released a Public Sector Net Zero Reporting Guide<sup>2</sup>, published alongside the route map in May 2021, to support the Welsh public sector in consistently measuring and understanding their carbon emissions and support the development and maintenance of their decarbonisation Action Plans.

The Net Zero Reporting Guide has helped to set the baseline for our carbon emissions, but we recognise the need to evolve the approach, in particular, to increase the accuracy of supply chain emissions accounting.



**Figure 1: Welsh legislation, strategies and commitments driving decarbonisation**



<sup>1</sup> A route map for decarbonising across the Welsh public sector

<sup>2</sup> Welsh Public Sector Net Zero Reporting Guide

# Net zero for the Welsh Government

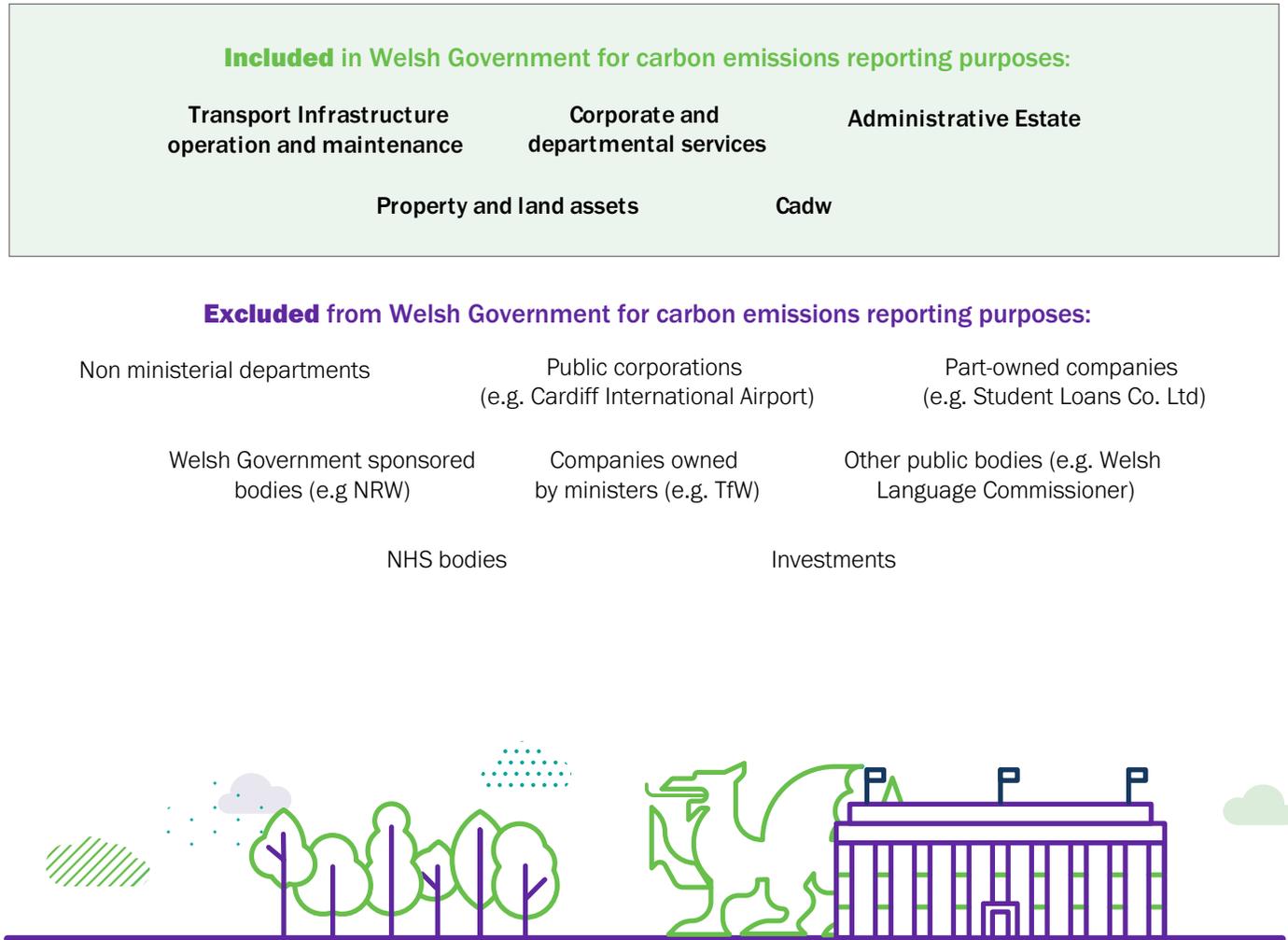
## Role of the Welsh Government

The Welsh Government works with the wider public sector and other stakeholders to deliver effective policies to improve the lives of people in Wales across areas such as health, education, and the environment.

The Welsh Government consists of the First Minister, Welsh Ministers, the Counsel General, and supporting civil servants, acting together as the executive body in Wales. We plan policy and put laws into effect that are passed by Senedd Cymru, the legislature in Wales.

The Welsh Government's operational boundary for carbon emissions reporting, shown in Figure 1, was agreed upon by stakeholders as part of the Welsh Public Sector Net Zero Reporting Guide. This shows the parts of the organisation over which the Welsh Government has the influence to reduce emissions directly, and corresponds to the Welsh Government's accountability and governance structure in the annual accounts.

Figure 2: Welsh Government's organisational boundary for carbon footprint reporting



## Scale of operations

Our 5,405 FTE (full-time equivalent) staff oversee a vast and diverse range of responsibilities, from maintaining over 1,500km of trunk roads to managing 127 heritage sites across Wales<sup>3</sup>. The scale and diversity of our operations mean that achieving net zero as an organisation will be a challenge. Nevertheless, we are committed to rising to the challenge, putting the objective of achieving net zero at the heart of our organisation, driving a proactive effort to decarbonise, and setting an example to the wider public sector and society to do the same.



Figure 3: Scale of Welsh Government operations

**£443m**

in capital and resource expenditure



**5,405**

full time equivalent staff



**24 offices  
and 76,181m<sup>2</sup>**

of working and meeting space



**127**

heritage sites in our care



**Over  
1,500km**

of strategic road networks to  
manage, maintain, and improve



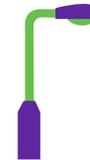
**1,534**

hectares of land



**20,000**

streetlights on our trunk roads  
and motorways



**Approx  
32m**

annual commuting miles  
for our staff



<sup>3</sup> Any assets leased to third parties are excluded in accordance with the Public Sector net zero reporting guide.

## Developing our approach to net zero

This Net Zero Strategic Plan brings together evidence and thinking from across the Welsh Government to outline our priority decarbonisation initiatives out to 2030. Implementing them successfully will be required to reach net zero as an organisation and support the wider public sector to achieve a collective net zero.

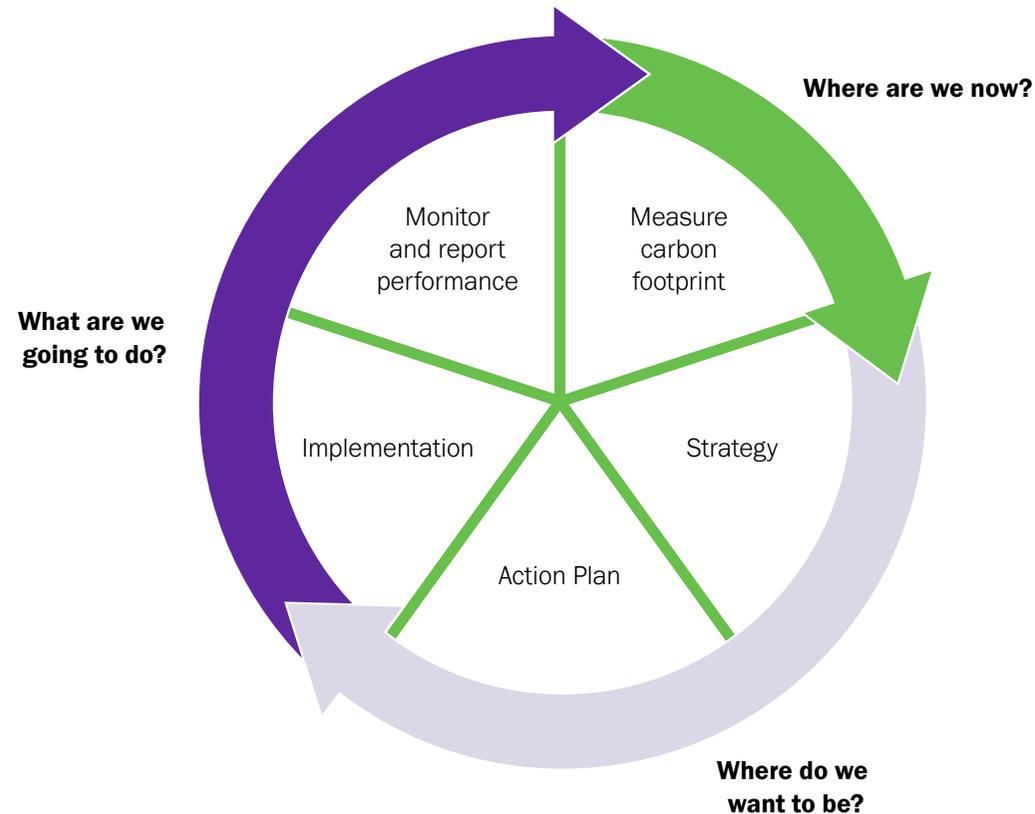
The initiatives were informed by Welsh Government staff and technical experts who understand the work completed already, and what opportunities remained to reduce carbon emissions as far as feasibly possible.

This Strategic Plan is part of a process that identifies opportunities to reduce our carbon footprint and monitor progress toward our net zero objectives. Although focused on carbon emissions reduction, all decisions, policies, and actions should be mindful of the wider impacts of climate change, including adapting to the risks and opportunities and ensuring our actions provide a fair and just transition to net zero.

This Strategic Plan focuses on the reduction of carbon emissions from our activities and outlines what is required for net zero to be achieved. Delivering these initiatives complementary to other socioeconomic and ecological objectives is essential.

Following this Strategic Plan, the next stage is to develop a costed and phased plan of action, outlining specific projects that can be implemented to reduce emissions across the organisation aligned to net zero.

**Figure 4: Climate action implementation stages**



## Alignment with other operational policies

As well as supporting Wales' commitment to achieving net zero collectively across the public sector by 2030, this Strategic Plan has been developed to support our existing operational policies and guidance for the public sector.

The Programme for Government sets our commitments to 2026; this incorporates our Well-being statement with 10 well-being

objectives set out to maximise our contribution to Wales' seven long-term well-being goals.

This alignment is critical for establishing a coordinated approach to delivering our objectives and making sure climate-related issues are considered in every aspect of decision-making across government.

Further, as a public sector organisation, we follow the best practice guidance and policies set for all public bodies.

Some examples of our organisational and Wales-wide policies and strategies driving actions to decarbonise are set out below.

## Organisational policies and strategies



Programme for Government 2021-2026



Well-being Statement 2021-2026



Administrative Estate Sustainability Strategy 2020-2030



State of the Estate Report, 2019-20



Corporate Asset Management Strategy 2021-2024

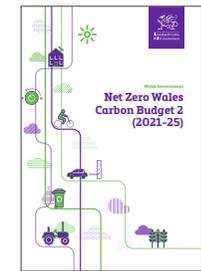


Workforce equality, diversity and inclusion strategy: 2021 to 2026

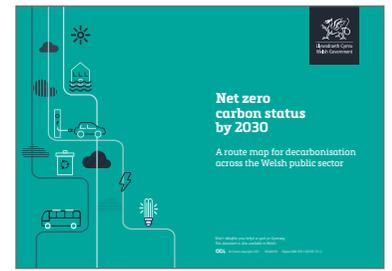
## Wales-wide strategies and guidance



Electric vehicle charging strategy for Wales



Net Zero Wales Carbon Budget 2 (2021-25)



Net Zero Carbon Status by 2030, Public Sector Route Map



Welsh Procurement Policy Notes



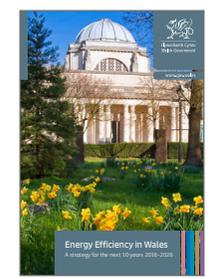
Welsh Public Sector Net Zero Carbon Reporting Guide



Sustainable buildings standards



Beyond recycling - making the circular economy a reality



Energy Efficiency in Wales, 2016-2026

# Our carbon footprint

The **Welsh Public Sector Net Zero Reporting Guide** details the principles for carbon accounting and reporting for the whole Welsh public sector, including the Welsh Government.

Emissions are regularly reported using the GHG Protocol, which categorises emissions into three scopes. An emissions breakdown by scope in accordance with the GHG Protocol is shown in Appendix A.

As part of our climate action, we are committed to measuring and reporting our carbon footprint annually. This process gives us a clear indication of the sources of our emissions and allows us to monitor the progress made in reducing our carbon footprint over time.

We have measured our carbon footprint for both 2019-20 and 2020-21.

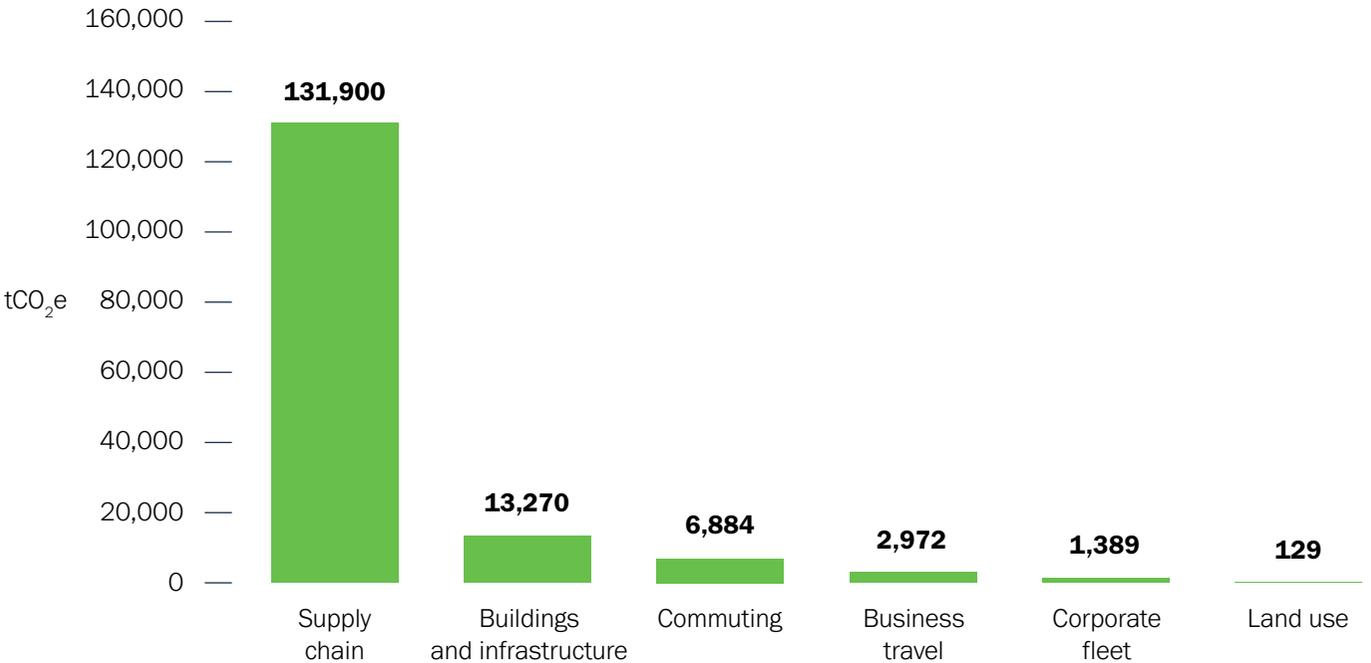
**INSIGHT:**

Our 2019-20 carbon footprint is equivalent to the average annual footprint for 77,500 cars or heating and powering 44,000 homes for 1 year<sup>4</sup>.

Our carbon footprint tCO <sub>2</sub> e	2019-20	2020-21
Operational emissions	24,516	14,355
Supply chain emissions <sup>5</sup>	131,900	113,200
Land use	129	129
<b>Total emissions</b>	<b>156,545</b>	<b>127,684</b>

Across all departments, emissions sources can be categorised into six broad categories:

**Figure 5: 2019-20 Welsh Government carbon footprint**



<sup>4</sup> Assumes that 1 car drives approx. 7,400 miles per year with emissions of 2.0 tCO<sub>2</sub>e, and a household uses 11,526 kWh of gas and 3,772 kWh of electricity.

<sup>5</sup> Operational emissions include: buildings and infrastructure, vehicle fleet, business travel and commuting.

Each category is made up of several emission sources. Our top five emissions sources for the baseline year (2019–20) were:



**1: The goods and services we procure**

**131,900tCO<sub>2</sub>e**



**2: Employees commuting to work**

**6,884tCO<sub>2</sub>e**



**3: Electricity to power our buildings**

**5,806tCO<sub>2</sub>e**



**4: Electricity to power our street lighting**

**5,370tCO<sub>2</sub>e**



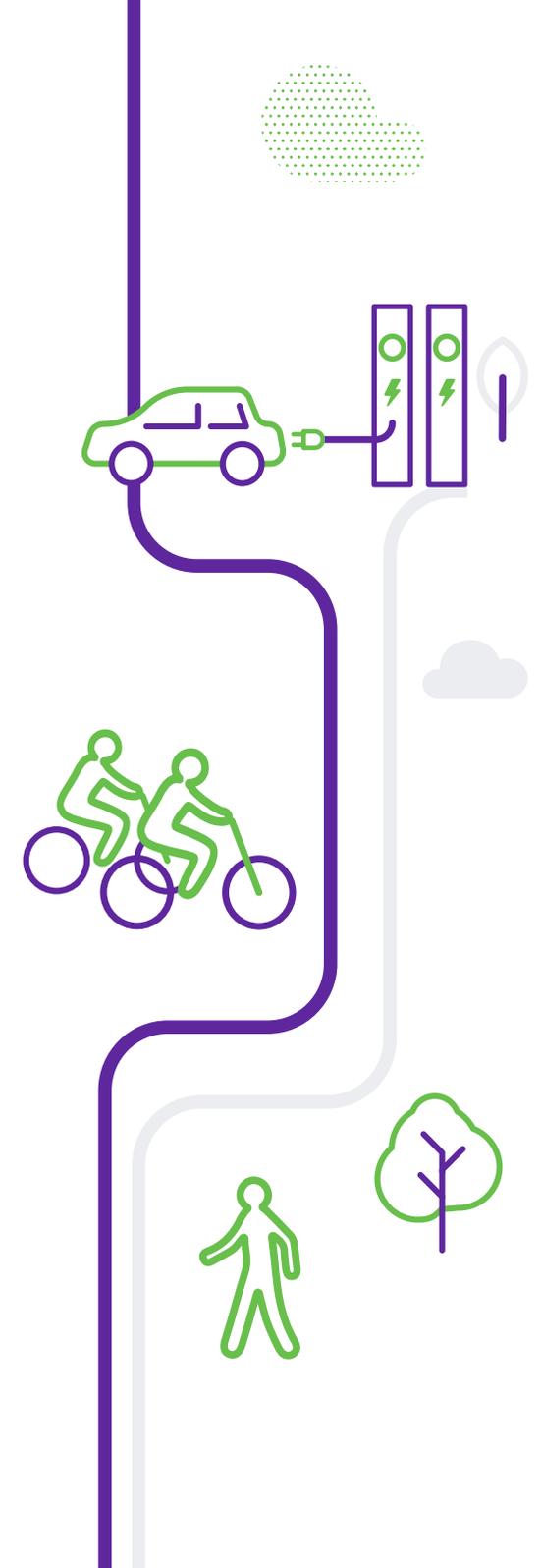
**5: Private car mileage for business travel**

**2,210tCO<sub>2</sub>e**

It is important to note that our two largest emissions sources (purchased goods & services and employee commuting) are estimated using benchmarks and proxies due to a lack of available activity data. Whilst this increases uncertainty in the calculation, it is a common challenge when calculating a footprint and is necessary until data improvements are made.

Between 2019–20 and 2020–21, the Welsh Government's organisational carbon footprint was reduced by approx. 18%, in part due to the COVID-19 pandemic. The overall reduction is due to:

- › The shift to working from home – 97% less commuting.
- › Reduced business travel – 91% less.
- › National grid decarbonisation.
- › Reduced occupancy of buildings.
- › Reduced supply chain emissions.



We have also made progress and continue to do so with proactive decarbonisation on our estate, (e.g. administrative estate, Cadw), streetlighting upgrades, and low carbon fleet.

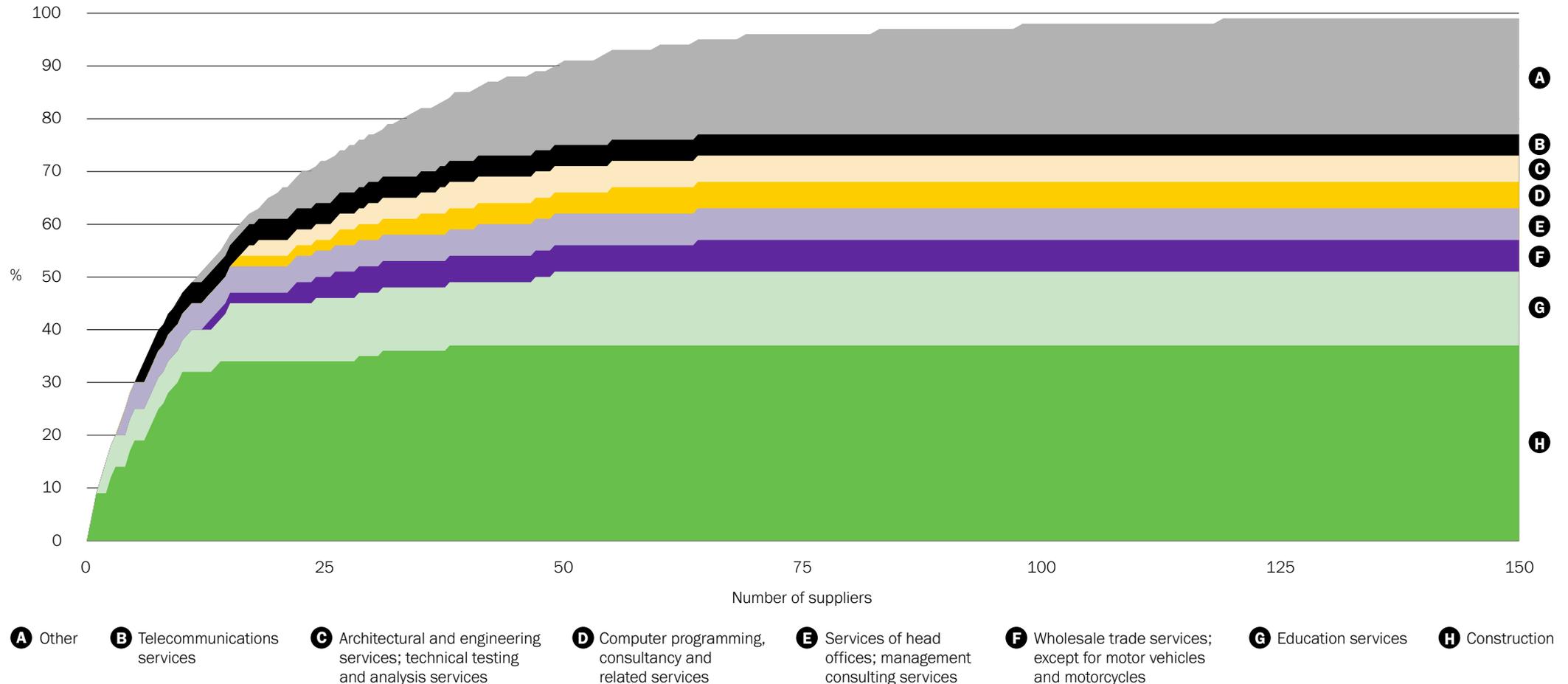
As the financial year 2019–20 was largely unaffected by COVID-19, it serves as a suitable baseline from which to measure ongoing decarbonisation efforts, and is the first year used for public sector carbon reporting.

**INSIGHT:**

Over half of our total spending is concentrated in the top 12 highest value contracts and 58 contracts make up 90% of our spending.



**Figure 6: Percentage of Welsh Government spend by number of suppliers (largest to smallest)**



# Our strategic plan for net zero

## Leading by example

**The Welsh public sector must reach a collective net zero by 2030.** For this target to be met, collaboration and knowledge sharing will be required to leverage strengths and opportunities from across the public sector.

We recognise that a collective effort is critical to make the target attainable and that our position of leadership and influence in the public sector provides us with an opportunity to lead by example and support the broader public sector to meet this goal.

This is why, as well as the overall public sector target, we have also set our own organisational net zero target.

The organisational net zero target binds us to an ambitious decarbonisation trajectory that will require transformational change across the Welsh Government organisation to achieve.

Leading by example means making ambitious emission reductions across our operations, disseminating the latest thinking on decarbonisation, driving positive behavioural change, and collaborating with our partners across government and the wider Welsh public sector.

Examples of our support to the Welsh public sector:

- › Continuing to fund the Energy Service to provide all Welsh public sector organisations with access to advisory and technical services for low carbon technologies and projects.
- › Providing £15m funding per annum through the Wales Funding Programme and Invest to Save.
- › Developing and disseminating procurement policy notes to advise on supply chain decarbonisation.
- › Continuing to develop our public sector reporting guide and tools to encourage all organisations to report emissions in an accurate and consistent way.
- › Supporting the roll-out of repair and reuse hubs together with continuing improvements in recycling through our Circular Economy Fund.

Examples of our support to communities, local areas, and businesses in Wales for decarbonisation:

- › We support community groups to develop renewable energy projects through the Energy Service and with Development Bank of Wales funding.
- › We support households and those in fuel poverty with our 'Optimised Retrofit' and 'Warm Homes' programmes.
- › We support lower carbon travel through Transport for Wales, Trunk Road Agencies, and our rollout of electric vehicle charging infrastructure.
- › We support businesses through our Business Wales support function and circular economy fund.
- › We provide support to develop Regional Energy Strategies and detailed Local Area Energy Plans.



## Our vision for organisational net zero

The Welsh Government is committed to achieving net zero as an organisation and supporting the 2030 net zero ambition for the entire Welsh public sector.

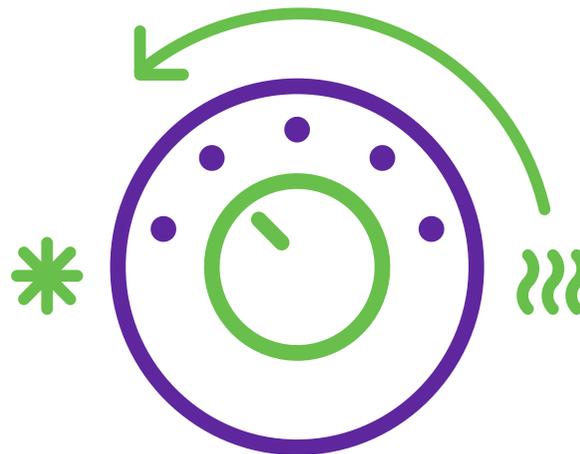
As Welsh Government, we have chosen to follow the Science Based Targets Initiative (SBTi), which provides a comprehensive definition of organisational net zero. This standard has been designed for private sector companies, however, we are aligning ourselves to the SBTi definition in the absence of a public sector organisational net zero standard.

To achieve net zero as an organisation in alignment with the SBTi<sup>6</sup>, we will have to reduce our operational and supply chain emissions by at least 90% relative to the baseline year. To achieve this by 2030, we must meet our current operational emissions target of a 90% reduction, and convert our qualitative supply chain approach to achieve the same outcome.

Only when we have established how we will reduce our emissions as much as possible, will we consider greenhouse gas removals to offset any residual emissions that cannot be eliminated. Setting a minimum 90% requirement for mitigation supports this approach.

This Strategic Plan contains the strategic initiatives that will move us towards our net zero ambition. Further action planning and development work is required to deliver each initiative and turn strategic ambition into action.

Further, our vision extends to the wider public sector who we will support to achieve a collective net zero by 2030. We will continue to support communities, local areas, and businesses in Wales on the journey to net zero.



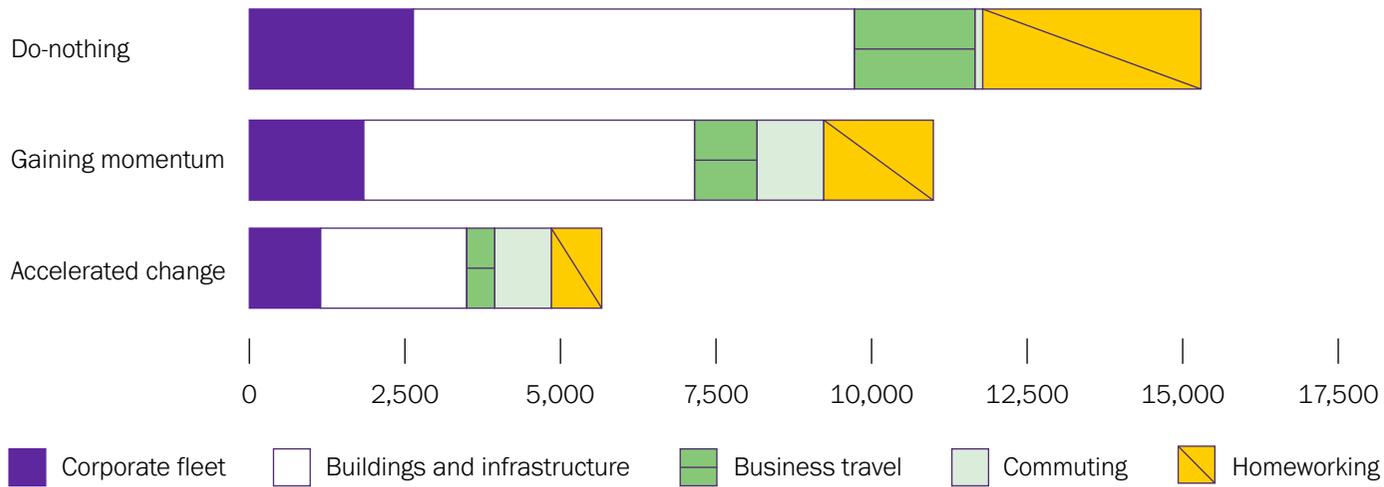
## Our targets

We have split our targets for decarbonisation as an organisation into two types: a measurable carbon reduction target for our operational emissions, and qualitative targets for supply chain and land use. This approach has been taken to support the accuracy of a quantifiable carbon reduction target for our well-understood operational emissions, whilst ensuring that progress continues for emissions sources where our carbon accounting approach is evolving to be quantifiable in the future.

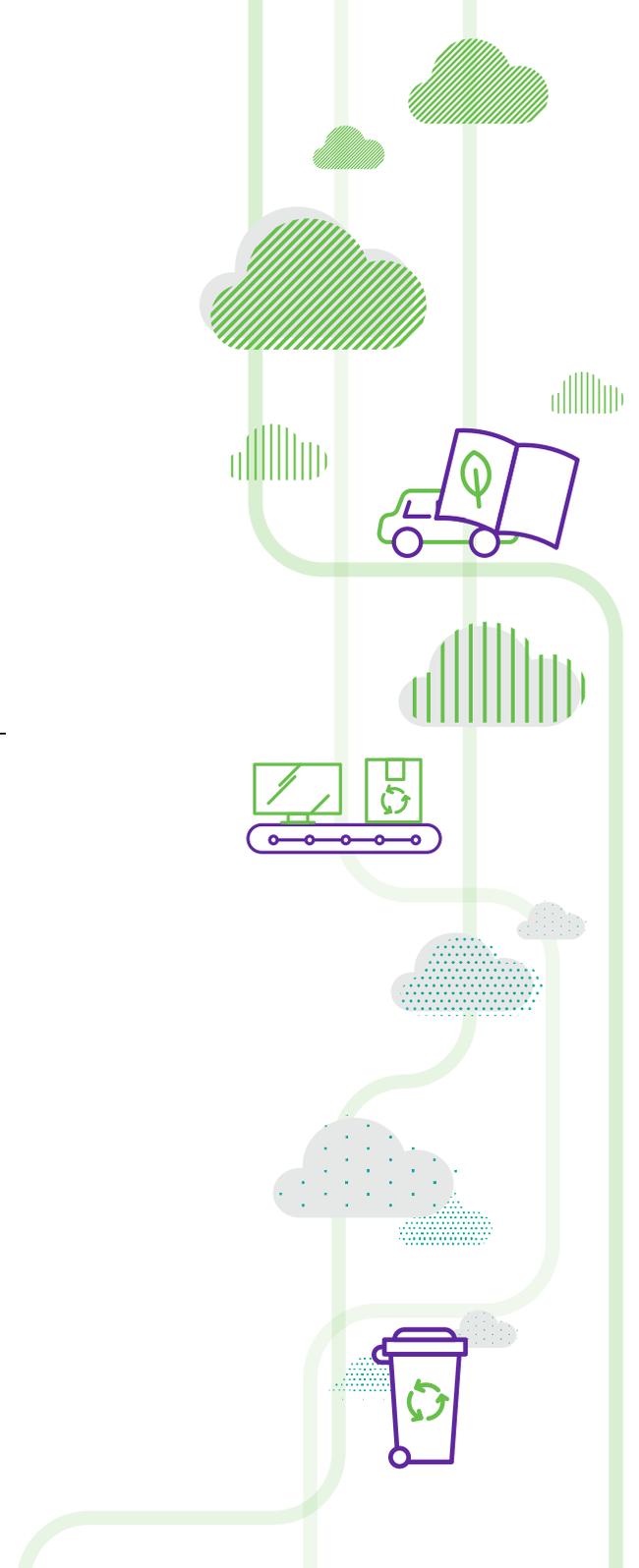
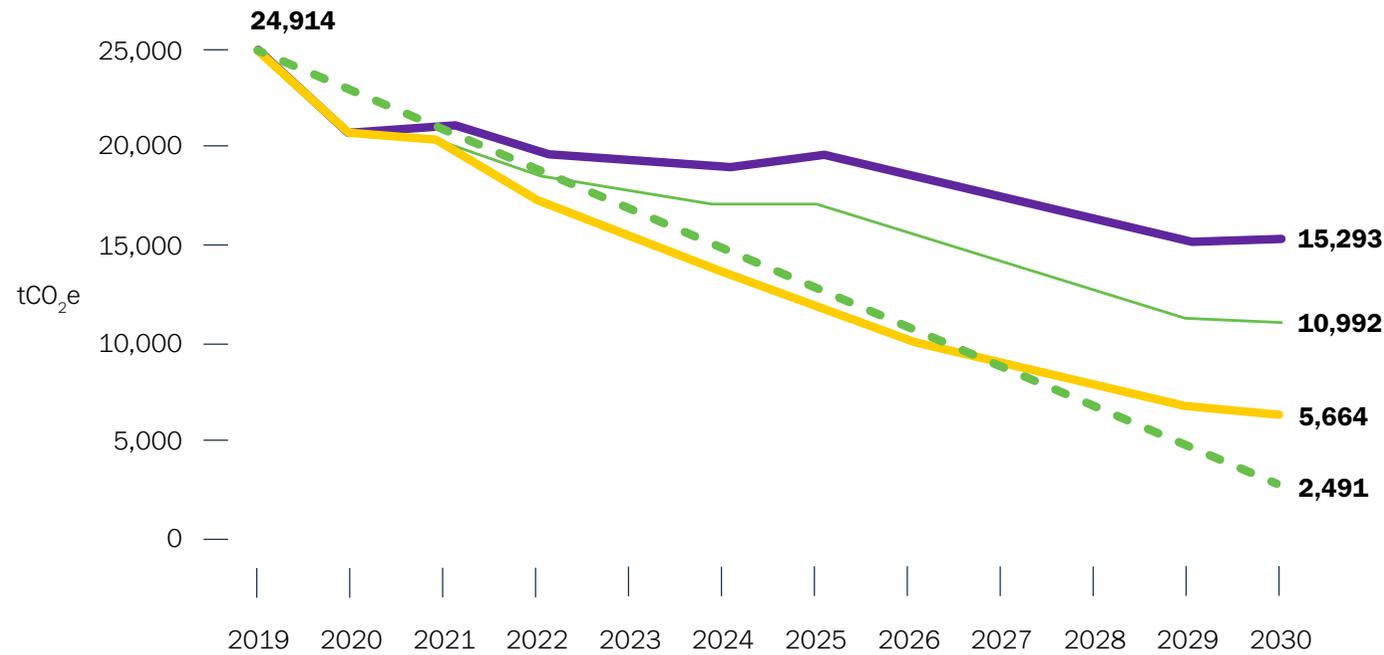
Our ambition for net zero will be to reduce emissions by mitigation first. To support this, we will aim for at least a 90% reduction in emissions, which aligns with the SBTi requirements for net zero. This will be based on the financial year 2019-20 baseline, aligning with our Carbon Reporting Guide and SBTi requirements for a recent representative year.

We have modelled the impact of initiatives across our operational emissions out to 2030. The modelling is not exhaustive and it is not to the accuracy of specific projects for specific buildings, but it does provide likely pathways for decarbonisation at three levels: do nothing, gaining momentum, and accelerated change.

**Figure 7: 2030 residual emissions**



**Figure 8: Welsh Government operational emission pathways to 2030**



Each scenario demonstrates a varying level of initiative implementation and considers high/low scenarios for key interacting factors such as electricity grid decarbonisation and electric vehicle uptake by staff.



At this stage, our modelling demonstrates a 55-75% reduction by 2030. This is not enough to meet our ambition to reach net zero by 2030 and our approach will need to evolve beyond the initiatives modelled so far. We will need to firm-up and scale-up our solutions within our Action Plan, and innovate further to bridge the gap.

The accelerated change scenario assumes aggressive displacement of fossil fuels. However, residual emissions from our buildings & infrastructure and corporate fleet alone are estimated still to be above the 90% operational carbon reduction target. Doing all we can to maximise the electrification of our operations will align our residual emissions with the carbon intensity of the electricity grid. While this is unlikely to bring us to our net zero 90% reduction target by 2030, it will position Welsh Government as **'net zero ready'** as we support our electricity grid to continue to decarbonise.

The carbon accounting approach for emissions from our supply chain is not accurate enough to group with our well-understood operational emissions. This will change as our carbon accounting guidance for the public sector improves. To help drive progress now, we have set qualitative targets for decarbonising our supply chain.

In addition, as our data improves and the carbon accounting guidance evolves, we will reassess the baseline to keep our targets relevant.

We have a leadership role in directly supporting the decarbonisation of the electricity grid in Wales. Although this will not directly reduce our reportable carbon footprint, we will capture the impact of our work to increase locally owned renewable generation.

## Operational carbon reduction target

Science Based Target Initiative aligned 90% emission reduction based on a 2019-20 baseline:

**2,491 tCO<sub>2</sub>e**

## Qualitative targets

1. In 2023 we will have set out an evolution plan for carbon emissions assessment in tenders and contracting, this will set out when net zero suppliers' requirements will be in place.
2. By 2025 we will have a firm understanding of our scope 3 supply chain emissions and be able to set out a quantifiable target in our next Strategic Plan.
3. We will directly contribute to generation capacity to meet the 1GW local ownership target for Wales by 2030.
4. We will directly contribute to the creation of a National Forest to extend from the north of Wales to the south.
5. We will procure on a basis that prioritises goods and products made from remanufactured, refurbished and recycled materials.



## Residual emissions and offsetting

For any organisation, it is very difficult to entirely remove all emissions. We recognise that some residual emissions will remain part of our footprint in 2030, even after all the initiatives have been implemented. These emissions will be unavoidable and will need to be offset.

Carbon offsetting is a broad term that refers to activities that reduce or avoid carbon emissions, or increase carbon storage to compensate for emissions that occur elsewhere. We recognise that absolute zero emissions by 2030 is not realistic and a level of neutralising through GHG removal offsets will be required to reach our net zero ambition.

The offsetting market and investment guidance is likely to change between now and 2030 as technology, policy and markets evolve, so we will start by developing a robust and credible approach for use that is aligned with our organisational objectives. Further information on our strategic initiatives for offsetting can be found in the Initiative section of this Strategic Plan.



# Delivering the Strategic Plan

This Strategic Plan sets out our net zero ambition and our strategy to achieve it.

Across our organisation, we must now focus on delivering and sustaining climate action. This will involve creating an enabling environment, where choosing low carbon becomes the norm, culturally embedded and self-regulating.

In many cases the impact of current decisions will be locked-in until 2030 and beyond, meaning that our behaviours and actions must become net zero-aligned now if our target is to be reached.

Every employee has a personal responsibility to integrate net zero into their roles and activities. As Welsh Government, we have the responsibility to provide the tools and resources necessary to translate positive intent into meaningful action across the organisation.

In this section, we set out the structures we intend to put in place to deliver on this effectively. The journey will be iterative and non-linear; this strong foundation is a prerequisite to ensure we are able to cope with and respond to changing circumstances, with feedback loops to be implemented across the organisation.

**Figure 9: Climate action activities, from planning, to delivering, and sustaining**



## Planning climate action

- Governance structure and responsibility
- Climate emergency commitment
- Carbon footprint baseline
- Pathway and target setting
- Strategy
- Action Plan



## Delivering climate action

- Staff and public low carbon travel
- Waste and circular economy
- Smart working
- Active travel
- Engage supply chains
- Energy efficiency
- Renewable energy
- Decarbonise procurement



## Sustaining climate action

- Communicate successes
- Standards (ISO14001 ISO50001)
- Science based targets
- Management reporting
- Verification

## Governance

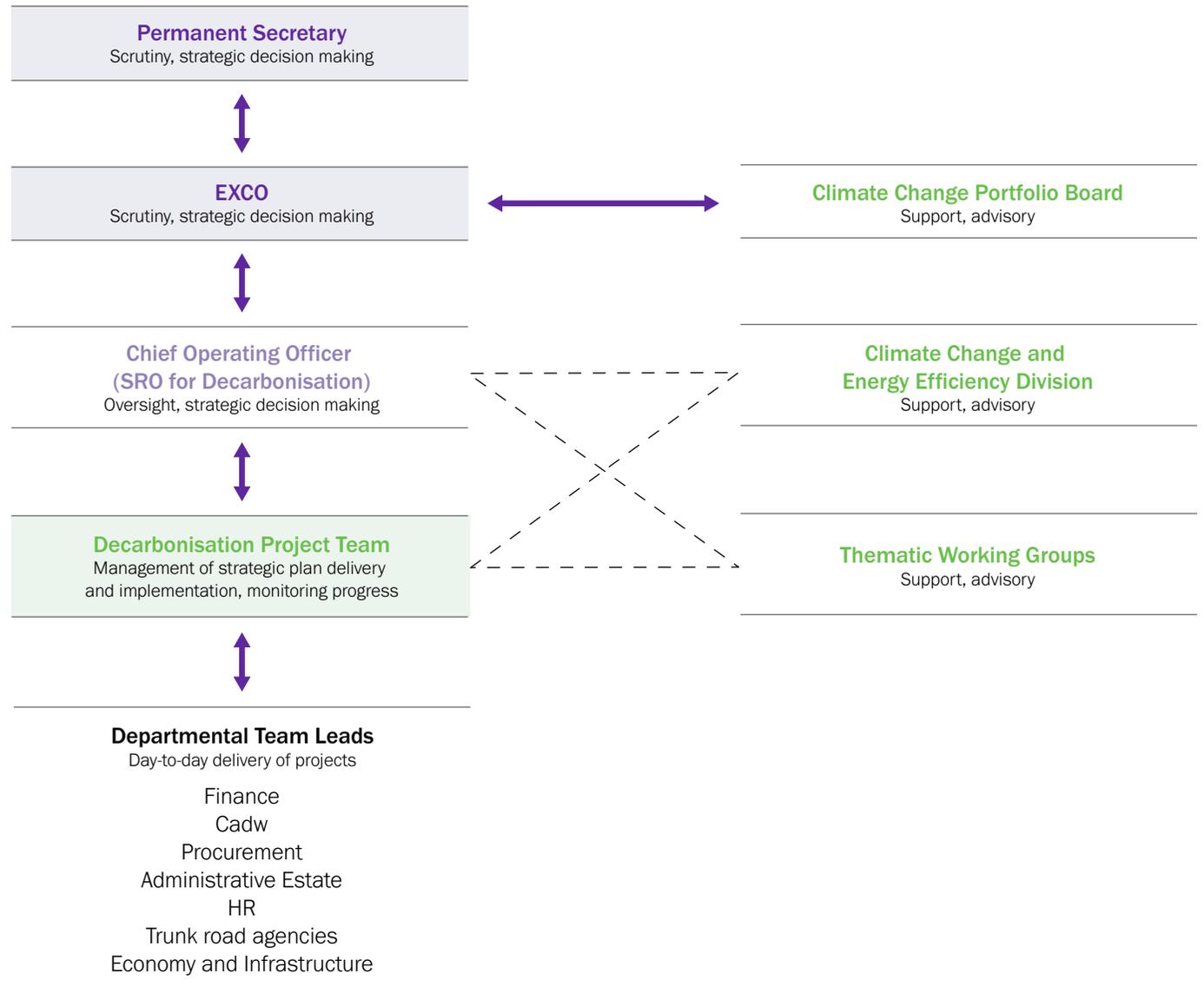
### Ownership

Ownership of the Welsh Government's Net Zero Strategic Plan sits with the Welsh Government Executive Committee (ExCo), the most senior decision-making body for the Welsh Government. The Committee is chaired by the Permanent Secretary who has personally committed to achieving our target.

Responsibility for the delivery of this Strategic Plan will sit with the Chief Operating Officer (COO) who will be responsible for the policy and operation of many of the levers needed to achieve the vision of a net zero organisation. They will take responsibility for driving the ongoing development and action to implement the Strategic Plan and will be accountable for its success.

The COO will be responsible for establishing suitable governance to support the delivery of the Strategic Plan. The COO will also provide reports to ExCo on a quarterly basis to update on the delivery of the Strategic Plan, highlighting progress and the resolution of any issues. ExCo will be engaged regularly as the policies, "costed plan" and initiatives develop and as strategic decisions are required.

**Figure 10: Governance structure for the development and implementation of the Welsh Government's Net Zero Strategic Plan**



## Decarbonisation Project Team

A Decarbonisation Project Team is expected to sit under the COO and have responsibility for the delivery of the Strategic Plan. Its role is expected to include:

- ▶ Monitoring the delivery of the initiatives set out in the Strategic Plan.
- ▶ Developing more detailed (costed and phased) decarbonisation Action Plans in cooperation with the relevant departments, setting out in detail how the initiatives will be achieved.
- ▶ Identifying an appropriate owner for each initiative, and the team/policy leads responsible for its delivery.
- ▶ Reporting to the COO on progress in the delivery of the initiatives, the Action Plan, and the overall Strategic Plan.
- ▶ Collating and reporting data on carbon emissions from across Welsh Government to feed into the public sector annual reporting of public sector emissions.
- ▶ Identifying any areas of risk to the delivery of the Strategic Plan, putting in place measures to mitigate and/or escalating to the COO and relevant Directors.
- ▶ Managing the delivery of behaviour change initiatives to support the development and implementation of the Strategic Plan, including communications and training, such as carbon literacy.

## Thematic working groups

It is expected that we will form thematic working groups made up of policy and implementation owners for key emission areas. They will share experience and best practice on investment decisions and develop collective solutions to address emission hot spots. These working groups will be supported by the Decarbonisation Project team.

## Departmental leads

Departmental leads will be responsible for the identification, implementation, and monitoring of initiatives relevant to their department. Their input will ensure the suitability of the initiatives, and they will take ownership of implementation and associated monitoring. The collation of their input will form a key evidence base for the Decarbonisation Project Team to establish new processes, tools, and initiatives that drive further decarbonisation across the Welsh Government.

## Climate Change and Energy Efficiency Division

The Climate Change and Energy Efficiency Division, supported where appropriate by technical expertise such as from the Energy Service, will provide technical support to the Decarbonisation Project Team in the delivery and implementation of the Strategic Plan.

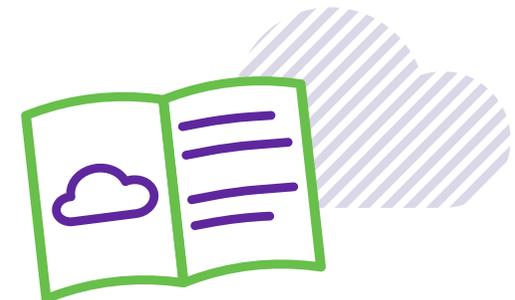
## Resource and Finance

Access to resource and finance is critical to ensure the success of this Strategic Plan. As climate change is embedded into policy and investment decisions, it is anticipated that the delivery of initiatives will require additional capacity and resources. We will also take advantage of external expertise and support, such as the Energy Service.

## Monitoring and Reporting

We will report annually on our carbon footprint and progress against the Strategic Plan using the Welsh Government's Annual Report, State of the Estate report and the Public Sector Net Zero Reporting Guide.

Continuing to improve the collection and analysis of high-quality operational data is a key priority if we are to understand and mitigate carbon emissions. The data will be essential to further develop and assess the impact of initiatives, Action Plans and the overall delivery of this Strategic Plan.



Establishing the effective collection and use of data will be an iterative process that will require flexibility and transparent communication to optimise. We will formalise communication between strategic decision-makers and those helping to deliver or affected by initiatives to ensure that lessons-learnt are being shared on an ongoing basis to improve existing processes. An agile approach will be promoted to ensure that systems and ways-of-working can evolve in a progressive style.

## Embedding net zero

The governance of this Strategic Plan is designed to ensure a coordinated approach to net zero with senior officials responsible for its implementation.

While commitment from senior officials is essential to enable the introduction of our climate change initiatives, it is not sufficient; every Welsh Government employee must support our net zero aspirations and embed net zero into their day-to-day roles and behaviours. To do this, we must ensure that Welsh Government employees are able to make a positive impact through informed decisions.

What we will do to achieve net zero	
1	<b>Integrate combatting climate change and the ecological emergency into every role</b> to ensure that everyone is working towards our ambitions and these initiatives become integral to people's roles. The performance review process will be utilised to ensure individuals are aligned with the climate emergency and taking appropriate responsibility for carbon emissions reduction within their role.
2	<b>Develop an internal communication and dissemination plan</b> that raises the profile of our net zero ambition, progress, and related activities. The plan will encourage active participation and provide a forum for employees to engage with our activities.
3	<b>Promote the establishment of employee led sustainability groups</b> to champion engagement at a grassroots level and provide a forum for employees to input into sustainable decision-making.
4	<b>Provide resources and tools that inform and quantify the carbon emissions impact of business choices</b> to empower people to make low carbon and resource efficient decisions and translate intent into positive action.
5	<b>Continue to roll out carbon literacy training across all staff</b> to provide a foundational understanding of sustainability, the climate crisis, and our net zero ambition across the organisation. Follow-up with a feedback survey to evaluate the effectiveness of the training and ensure content is kept up to date.
6	<b>Provide specialised training</b> to employees in key roles to give them knowledge and confidence to make assertive decisions in the interest of sustainable, low carbon, and resource efficient delivery.
7	<b>Include carbon emissions implications into business cases for investment and development of corporate policy</b> , integrated with the wellbeing of future generations assessment.

# Initiatives

The initiatives set out in this section lay the foundation for how we will achieve net zero as an organisation by 2030. They will help focus our efforts on identifying implementable actions as part of a more detailed Action Plan, and ensure that we are ambitious across the organisation as a whole.

These initiatives were developed in collaboration with stakeholders from departments that represent key emissions sources across the organisation and are presented by emissions source as defined in the Public Sector Net Zero Reporting Guide.

The initiatives presented are strategic in nature and not prescriptive to specific measures, projects, or deadlines. The intent is that specific Action Plan activities will link back to the initiatives within this Strategic Plan. Details such as funding and specific carbon impact for individual measures will also be established at the Action Plan stage.

## INSIGHT:

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There are **54 initiatives** set out in this Strategic Plan. Initiatives are presented in the following structure:

### **1. Buildings and infrastructure:**

**1.1 Administrative estate;**

**1.2 Cadw;**

**1.3 Economic Development Property;**

**1.4 New buildings and major refurbishment;**

**1.5 Transport infrastructure.**

### **2. Corporate fleet**

### **3. Business travel**

### **4. Smart Working**

### **5. Supply chain – purchased goods and services**

### **6. Land use**

### **7. Residual emissions and offsetting**

# 1. Buildings and infrastructure

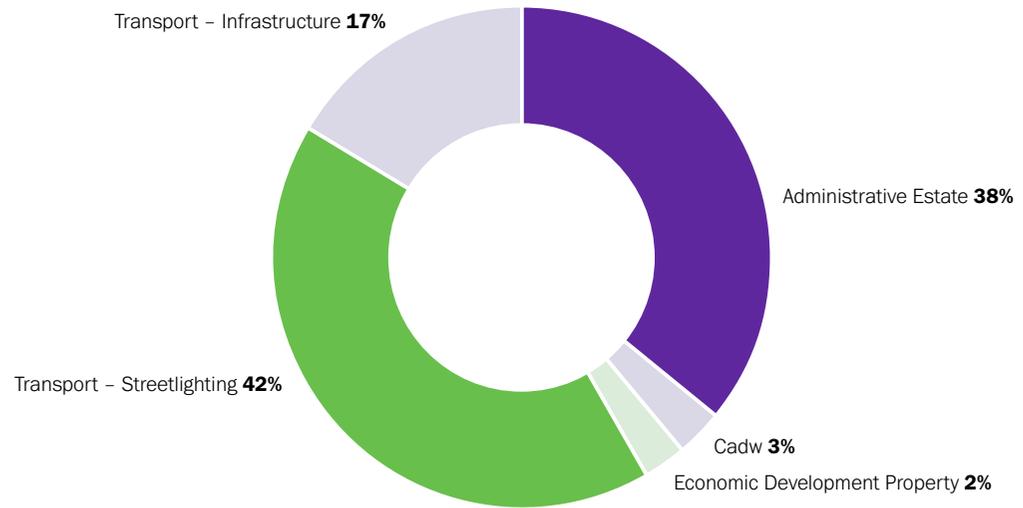
The Welsh Government holds a diverse range of land and property assets as part of its work to support the people of Wales.

Those that have been considered within Welsh Government's organisational carbon footprint and as a focus for this Strategic Plan are highlighted in Figure 12. The land and property boundaries have been set to align with the Public Sector Reporting Guidelines.

Public assets the Welsh Government invests in through capital or grant funding mechanisms are not included on the basis that the Welsh Government is not the asset owner and/or has no operational control over the asset.

Emissions from property assets arise from the energy used to provide basic services such as heating, lighting, ventilation and water supply and treatment. They also arise from electricity used for street lighting on the Strategic Road Network (SRN), across the Economic Property Development Portfolio and from the disposal and treatment of waste generated in buildings across the administrative estate.

**Figure 12: Emissions split for Welsh Government's buildings and infrastructure (2019-20)**



**INSIGHT:**

Emissions from our buildings and infrastructure contribute 51% of our operational carbon footprint and are a key focus area for reduction.



## 1.1 Administrative estate

The administrative estate provides modern flexible working and meeting space for civil servants, contractors, and Ministers. There are currently a total of 21 core office properties<sup>7</sup>.

The administrative estate is of critical strategic and operational importance and underpins the delivery of Welsh Government business. The majority of the workspace has undergone significant change in recent years and we have already taken measures to reduce carbon emissions from the estate, resulting in a 76% decrease in emissions since 2010–11.

These improvements include embedding energy management into facilities management contracts; optimising the estate; and investing in low carbon heating, renewable technologies and energy efficiency measures at core sites.

Our guiding aim between now and 2030 is to deliver a 21st-century sustainable administrative estate fully compatible with Welsh Government's operational requirements, primary goals and objectives<sup>8</sup>.

As the largest built estate emissions source, we recognise the importance of maximising impact on our administrative estate. To meet our net zero aim, effectively we need to fully transition to low carbon heat, enable this with energy efficient retrofit of our buildings, and maximise opportunities for onsite (or neighbouring) renewable energy generation.

What we will do to achieve net zero	
8	<b>Optimise the use of space in our offices</b> by evaluating the lasting impact of COVID-19 on working patterns and assessing the needs of staff and the business. We will also investigate and pursue opportunities to co-locate, either by sub-letting surplus space or sharing other public buildings.
9	<b>Produce an updated estate delivery plan</b> to introduce new standards for space and ways of working across our estate that reflect changing work patterns.
10	<b>Progress a transformational energy retrofit programme across the estate</b> , aligning to net zero building standards and integrating opportunities into portfolio management plans (PMPs) such that every building has undergone a multi-technology upgrade by 2030. Carbon emissions abatement potential will be included to appraise and prioritise technologies, including: <ul style="list-style-type: none"> <li>• Displacement of gas-fired heating systems with electric heat pumps or other low carbon forms of heating.</li> <li>• Procurement of high-efficiency appliances by default, including the transition of all lighting to LED.</li> <li>• Install on-site renewable energy capacity to a maximised scale.</li> </ul>
11	<b>Rollout standardised, effective building management systems</b> to automate efficient performance and measure and monitor energy data to gain further insights into optimisation and energy-saving opportunities.
12	<b>Collaborate with others across government, the public sector and wider society</b> to share learnings and accelerate the Welsh Government and Wales' transition to net zero buildings.
13	<b>Scope and implement employee behavioural opportunities</b> to optimise the operational efficiencies of our buildings across energy and non-energy (e.g., waste and water) consumption.

<sup>7</sup> Welsh Government Administrative Estate Portfolio (Asset) Management Plan.

<sup>8</sup> Welsh Government Location Strategy

## 1.2 Cadw

Cadw is responsible for the conservation of Wales' historic environment, and actively manages 127 heritage sites on behalf of the Welsh Government. The sites and their supporting infrastructure (e.g. visitor centres, workshops, corporate fleet) have an important part to play in helping to achieve our net zero ambition.

We also influence wider change by encouraging and supporting owners of historic sites to decarbonise, including the publishing of guidance and provision of advisory support during consultations and assessments.

Where possible, we will align the Cadw estate to the initiatives for Welsh Government operational buildings. However, the protected nature of our heritage assets imposes constraints that will restrict implementation at several sites. Despite this, in order to contribute to closing the emissions gap, we aspire to continually improve the carbon emissions performance of our older buildings throughout Wales whilst protecting their significance and avoiding unintended consequences.

### What we will do to achieve net zero

<b>14</b>	<b>Optimise operational performance across the heritage estate</b> through the continued roll-out of energy efficiency measures and meeting energy demand from low carbon sources wherever practically feasible (including low carbon heat and renewable power generation).
<b>15</b>	<b>Embrace collaboration with other heritage and partner associations</b> to identify innovative ways to decarbonise our heritage sites in a manner that preserves or enhances their essence and integrity.
<b>16</b>	<b>Establish Cadw as a heritage low carbon leader and drive wider change</b> through our network of tens of thousands of Cadw members and a growing network of external partnerships. We will amplify our work to drive change and promote sustainable behaviour by individuals and organisations alike. We will learn by doing and leverage our expertise to continue to guide 'greening' protected historic sites and heritage buildings, regularly updating and publishing guidance to ensure best practice is publicly accessible.

#### INSIGHT:

We have already taken measures to reduce emissions across our heritage estate. Starting with the Eco Cadw project in 2010, we have invested over £1million to install high-efficiency LED lighting across the estate, installed on-site renewable power at several of our modern sites, installed air source heat pumps at three of our sites, and are in the process of electrifying our entire Cadwraeth fleet.

### 1.3 Economic Development Property

We manage a commercial portfolio of offices, industrial premises, and development sites. The objective of the portfolio is to deliver infrastructure for commercial purposes and to support local businesses and investments in Wales. The portfolio is almost fully let.

The commercial arrangement of our leased assets places them outside of our carbon footprinting boundary according to the Welsh Government Public Sector Reporting Guide. However, as property owners, we influence how buildings are maintained and in some cases the building systems. In these cases, we commit to working collaboratively with tenants to decarbonise the estate.

There are various types of contract arrangements across the economic estate and the influence we can exert as a landlord varies between lease types.

We have already taken measures to reduce energy consumption in lease types where we have greater operational control, from the installation of metering systems to the deployment of energy efficiency and renewable energy technologies. As a landlord with a net zero ambition, we intend to collaborate with tenants to optimise the carbon emissions performance of all properties in the portfolio.

What we will do to achieve net zero	
17	<b>Explore the use of green lease principles into our lease<sup>9</sup> agreements</b> in order to improve the environmental performance of our buildings and incorporate a framework for collaboration and engagement on environmental issues between us and our tenants.
18	<b>Integrate building-level decarbonisation in our in our planned maintenance regime under the Portfolio Management Plans</b> to identify and assess the feasibility of measures required for our buildings to perform in alignment with net zero. Starting with our highest emitting buildings and working in consultation with tenants, we will assess the specific needs of each building and occupant and prepare phased implementation plans, incorporating the costs/savings of any such actions into negotiations.
19	<b>Mandate carbon emissions reporting</b> in our annual portfolio report to monitor performance and consolidate strategic initiatives.



#### 1.4 New buildings and major refurbishment

New builds and major refurbishments across our property assets (inc. our administrative and economic estates and Cadw) provide the chance to significantly improve the operational efficiency of existing buildings or create additional high-efficiency space. However, if done incorrectly, there can be significant opportunity costs and long-term impacts on emissions.

The scale and lifetime of major projects – for buildings anywhere in the Welsh Government estate – make them an important component of our Strategic Plan, impacting our short-term emissions through a building's embodied carbon<sup>10</sup> and long-term emissions by locking-in operational emissions for several years.

Major refurbishments are planned across several buildings and, whilst the design envelope for a refurbishment is naturally smaller, we will take a similar approach to a new build and integrate low carbon delivery and operation throughout the planning stages to maximise emissions savings. Our approach to new build developments will align with our Sustainable Buildings policy, Net Zero Wales, and how best practice will evolve out to 2030.

In addition to building developments on our operational sites, we set the standards for housing developments where our land holdings are transferred (i.e. to a housing developer, registered social landlord, or local authority). We are driving low carbon standards for social housing through our Welsh Development Quality Requirements 2021 – Creating Beautiful Homes and Places (WDQR 2021).

WDQR 2021 requires new social homes to achieve an Energy Performance Certificate (EPC) A rating, and this will continue to be strengthened to maximise energy efficiency and move away from the use of fossil fuels for heating and hot water.

#### What we will do to achieve net zero

20	<b>Explore opportunities to use existing space and buildings</b> to avoid associated embodied carbon emissions from the creation of new buildings. To inform the decision, a life cycle carbon assessment will be explored when considering the replacement or retrofit of a building to meet net zero standards.
21	<b>New buildings built by Welsh Government must be designed and built to a net zero standard</b> that goes beyond BREEAM Excellent. In the absence of any published standard, we will engage and collaborate with thought leaders to adopt a suitable net zero new build approach. Standards could consider embodied emissions, direct operational use, and facilitating low carbon travel (inc. locational considerations).
22	<b>Incorporate Modern Methods of Construction (MMC)</b> throughout the design and construction of any major project. This will consider Passivhaus, modular design elements, low carbon construction materials and just-in-time delivery to minimise carbon emissions.

<sup>10</sup> The carbon emissions associated with production of a product (e.g., building materials), transport, installation on site, and disposal at end of life.

## 1.5 Transport infrastructure

The Strategic Road Network (SRN) and its related infrastructure (streetlighting, tunnels etc.) are managed by the North and Mid Wales Trunk Road Agency (TRA) and South Wales TRA.

Our key objective is to maintain a safe, efficient transport network across the region to accelerate economic development and facilitate access to services and employment. To deliver this, we will need to respond to the potential impacts of climate change.

Emissions arise from the energy and materials required to operate, maintain, and improve the SRN. Electricity to light and power our buildings, tunnels, roadside signage and street lighting is the largest direct operational emissions source across the SRN (30%). Significant embedded (indirect) emissions are also associated with construction materials used in the construction and maintenance of the SRN (see purchased goods and services).

The decarbonisation of our assets must take place within the context of national safety standards. We have already implemented measures to reduce carbon emissions from SRN infrastructure: all tunnel lighting and 50% of emissions from streetlighting are met with high-efficiency LED bulbs, and we're trialling innovative ways to save energy across the network.

For example, we are currently exploring the implementation of "dynamic dimming" across our trunk road street lighting network, allowing for automatic adjustment to lighting based on traffic conditions in real-time.

### What we will do to achieve net zero

<b>23</b>	<b>Assess feasibility and, wherever viable, install on-site renewable energy generation</b> to maximise the proportion of zero-carbon electricity consumed at our sites.
<b>24</b>	<b>Install high-efficiency technology by default across our transport infrastructure</b> (tunnels, road signage, street lighting). This includes transitioning the remainder of our trunk road street lighting network to LEDs, to have 100% of the trunk road network lit by LED lamps by 2030 – recognising that this will require significant investment in enabling works, including necessary upgrades to supporting infrastructure (lighting columns, cabling).
<b>25</b>	<b>Inform national standards and actively participate in discussions and consultations</b> around reducing energy consumption from transport infrastructure whilst maintaining safety standards and function.
<b>26</b>	<b>Roll out dynamic dimming and trimming of lighting</b> across our strategic road network.



## 2. Corporate fleet

The TRA operate the largest corporate fleet across the Welsh Government and owns or leases 23 different types of vehicles across its operations. Another 172 vehicle assets are used across other directorates for different purposes (ministers' vehicles, road maintenance, support, supervision). Different vehicle ownership models mean different levels of influence for the Welsh Government to reduce emissions.



The operational requirement of our fleet is high and makes up 8% of our operational emissions. We have already begun to phase out wholly internal combustion engine (ICE) vehicles where a viable alternative exists and continue to explore optimisation opportunities such as fleet rationalisation.

We will accelerate the transition to ultra-low emissions (typically electric) vehicles across all directorates and vehicles, though recognise that progress in part depends on step-changes in innovation for heavy-duty plant equipment

(critical for continuing to maintain the SRN effectively), increases in electric vehicle (EV) range, and the deployment of EV charge points between now and 2030.

We are currently working with the Energy Service to assess the age and mileage of our corporate fleet, consider this alongside business travel and pool cars, and shape a targeted approach for rationalisation and upgrades to EVs.

### What we will do to achieve net zero

27	<b>Conduct a comprehensive fleet review</b> across the Welsh Government organisation to determine opportunities for rationalisation and fuel switching across the fleet. The review will account for vehicle specialisms (e.g., towing requirement) and produce a phased timeline for vehicle replacements out to 2030.
28	<b>Expand the electric vehicle (EV) rapid charging network across our sites and the Strategic Road Network (SRN)</b> by completing feasibility studies for EV charge points across all sites, engaging with electricity network operators to assess requirements for electrical infrastructure upgrades and exploring opportunities for cooperative arrangements with other fleet operators.
29	<b>Stop investing in internal combustion engine (ICE) vehicles</b> , wherever technically feasible, in line with the commitment for all new cars and light goods vehicles to be ultra-low emissions (ULEVs) by 2025. A priority hierarchy will be applied, exploring all options for partial to full electrification, with ICE vehicles only procured for the most specialist vehicles where no viable ULEV alternative yet exists.
30	<b>Implement telematics across our fleet</b> to understand driving patterns and introduce targeted behaviour change mechanisms to optimise fleet energy consumption.
31	<b>Engage with manufacturers of low carbon plant machinery and heavy fleet</b> to understand advancements in low carbon technologies such as battery electric and hydrogen fuel cell vehicles, and actively participate in pilot trials to support their development. Interim steps (e.g., biofuels) will also be explored while these technologies are still nascent and not suitable for full-scale deployment.

### 3. Business travel

Journeys completed for business-related activities in vehicles not owned by the Welsh Government are reported under business travel.

COVID-19 is changing people's perception of business travel, and some journeys that were once perceived as essential are now readily performed online. That said, business travel will remain an important part of our operations and efforts to optimise our use of it will contribute towards our 2030 net zero target.

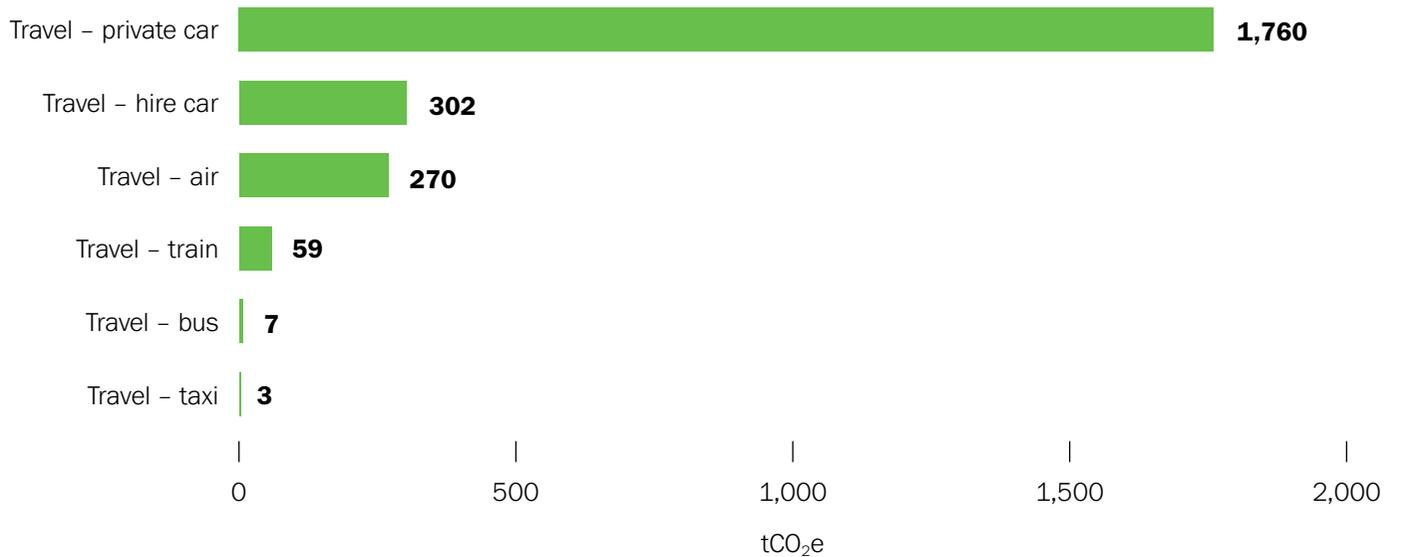
We have already implemented several measures to reduce our business travel emissions: virtual meetings are the default option for any Welsh Government organised meeting, sustainability is embedded into our travel and subsistence policies, and we've established frameworks that limit carbon emissions where travel is necessary.

Out to 2030, we will continue to identify and implement initiatives that reduce business travel mileage and, where it is viewed as necessary, make ultra-low carbon modes of transport the default option.

**INSIGHT:**

Private car mileage is the largest contributor to our business travel emissions.

**Figure 13: Split of Welsh Government business travel emissions (2019-20)**



**What we will do to achieve net zero**

<b>32</b>	<b>Regularly review business travel policy</b> to ensure its ambition and implementation are aligned to our net zero target and it requires the use of the lowest carbon travel options. Key criteria and metrics, such as our hire car carbon cap, will be reviewed and updated to ensure they remain ambitious in delivering reductions in carbon emissions.
<b>33</b>	<b>Close the gap between business travel policy and implementation</b> by engaging with employees to understand the reasons behind the implementation gap and identify opportunities to reduce it. The magnitude and composition of business travel emissions will be monitored to understand the efficacy of implemented initiatives.
<b>34</b>	<b>Provide tools and guidance on the carbon emissions impact of travel choices</b> to empower employees to make sustainable travel choices. The tools will be embedded into business travel decision-making processes to make low carbon travel the default option, with justification required for higher carbon modes of transport including long-distance and air travel.

## 4. Smart working

Smart working refers to a more flexible, mobile way of working, optimising the use of workspaces and modern technology. Smart working provides an opportunity to reduce emissions as it encompasses the interaction between office utilisation, home working and commuting.

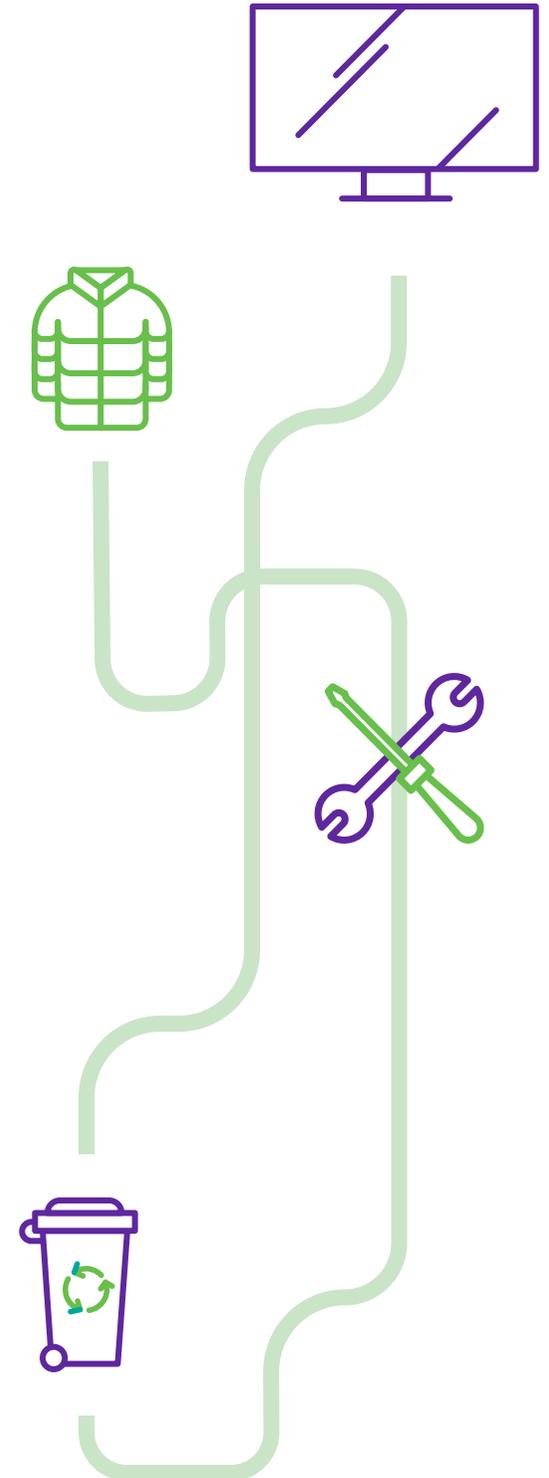
Employee commuting and office energy consumption are major components of our baseline footprint. However, COVID-19 is resulting in enduring changes to our working culture and a permanent shift to hybrid working patterns is anticipated for many in our workforce.

The changing dynamics of work will impact the composition of our emissions, and reductions in commuting mileage and office energy consumption will correspond with an increase in domestic energy consumption from homeworking. To achieve net zero, we must consider a whole system approach and establish an efficient hybrid working system that optimises emissions arising from all three sources.

Internally, we have also set up a cross-disciplinary Smart Working Task Group to explore ways we can work “smarter” to reduce environmental impacts while maintaining convenient, productive places for people to work. This includes the introduction of a Green Car Scheme to reduce emissions from employee travel where required, and the commissioning of a Public Sector behavioural change study to understand the barriers to low carbon forms of commuting.

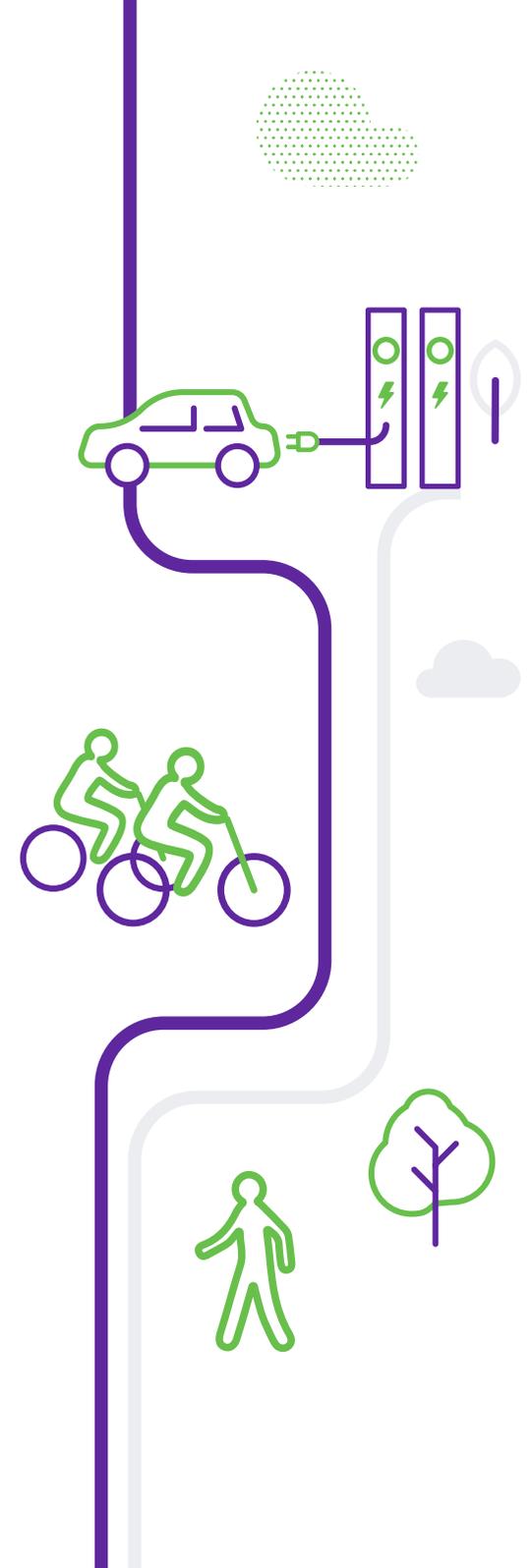
### INSIGHT:

Welsh Ministers have set out an ambition for 30% of the Welsh workforce to be working at or near home in the next four years and we have released a strategy to deliver this goal. The Welsh Government will visibly lead the way on delivery of this ambition – the impact of smart working from home is explored further in Appendix C.



## What we will do to achieve net zero

35	<b>Develop a corporate position for our approach to “smart working”</b> , informed by a review of working patterns and their carbon emissions impacts, which will provide strategic direction and inform investment decisions.
36	<b>Incorporate emissions from homeworking into our sustainability planning</b> to understand the magnitude of these emissions and work proactively with staff to reduce the additional energy consumption from their homeworking.
37	<b>Optimise existing low carbon IT services and continue investing in digital infrastructure</b> that enables productive teleworking and connectivity across the organisation without the need to travel.
38	<b>Conduct a ‘ways of working’ survey every other year</b> to reduce our reliance on benchmarks and identify tailored decarbonisation initiatives related to smart working, including optimised operation and utilisation of office space and teleworking.
39	<b>Align our planning to the Sustainable Travel Hierarchy<sup>11</sup> and support its uptake among staff</b> to shift commuting habits to low carbon forms of travel. We will engage with staff to understand existing barriers to the use of active travel and public transport, working collaboratively with local operators to identify opportunities that promote their uptake.
40	<b>Provide an enabling environment for low carbon travel</b> , including physical infrastructures such as bicycle storage, showers, electric vehicle (EV) chargers, and enabling policies such as our green car and cycle-to-work schemes.
41	<b>Promote to Welsh Government staff the existing (and any future) schemes which provide advice and support to Welsh householders to retrofit their homes towards net zero standards</b> to help our employees reduce energy consumption from working from home, reducing their domestic utility bills as well as contributing towards our organisational net zero target.



## 5. Supply chain, procured goods and services

The Welsh Government spends around £440 million buying goods, services, works, ICT and Digital tools/services so we can effectively deliver our core activities.

Emissions from the provision of these goods and services make up almost 85% of our baseline footprint, making it the largest contributor to Welsh Government's emissions and placing decarbonisation across the supply chain a key priority.

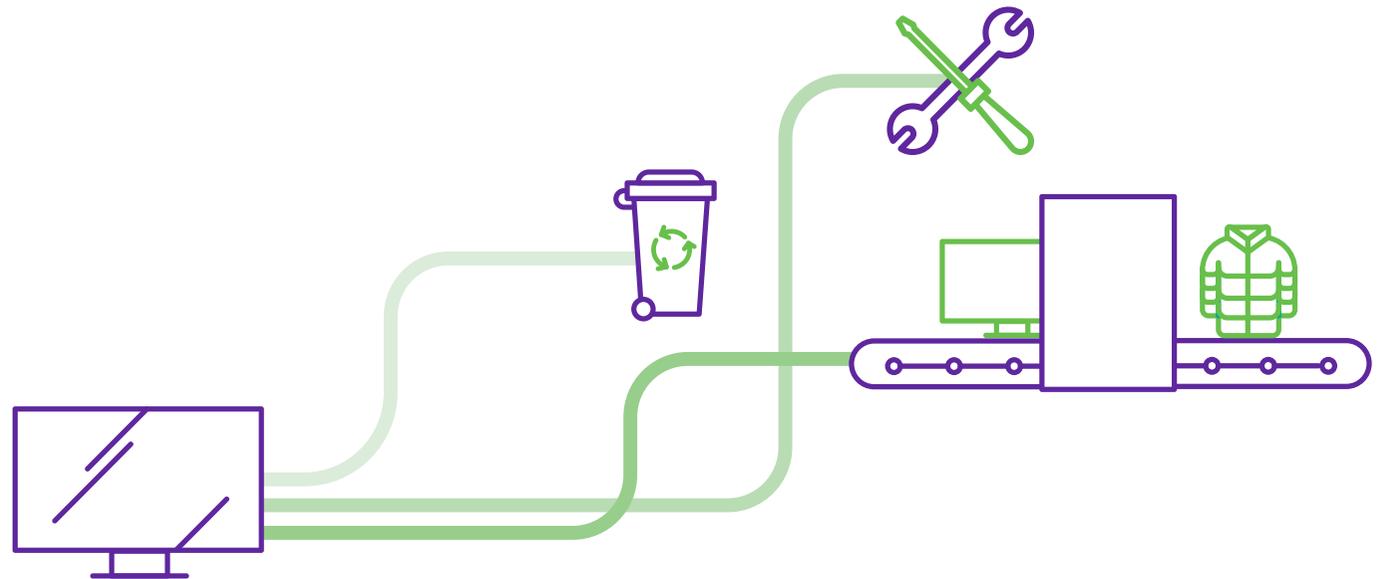
Accurately obtaining and apportioning emissions data from suppliers is a time-intensive and complex process so, in the interest of getting started, we have used spend-based proxies as an imperfect but necessary first step to estimate emissions. As part of our net zero ambition, improving data quality will go hand-in-hand with initiatives that directly reduce emissions across our supply chain.

Reducing emissions from procured goods and services is one of our biggest challenges and will involve engaging employees from across the organisation. Our vision is to only contract work with suppliers who endorse net zero and embed decarbonisation in the delivery of their goods and services.

Our central procurement team has already developed several documents to advise departments on how to integrate sustainability into procurement decision-making. For example, all contracts valued at £5 million or more (covering approx. 65% of our estimated baseline emissions) must now include carbon emissions reduction plans as part of their tenders.

### INSIGHT:

Emissions from purchased goods and services are estimated to contribute 84% (131,900 tCO<sub>2</sub>e) to Welsh Government's total carbon footprint, the majority of which is anticipated to come from contracts related to building construction services.



## What we will do to achieve net zero

- |    |   |
|----|---|
| 42 | <p><b>Establish sustainability as a core part of people's role along the procurement cycle</b> and provide formal training and guidance to inform and empower employees to make assertive decisions to plan sustainable low carbon delivery that compliments circular economy growth in Wales.</p>  |
| 43 | <p><b>Improve data collection and emissions quantification</b> to reduce our reliance on economic proxies and improve our ability to track emissions accurately; transition to company- and service-specific data collection practices for quantifying the emissions attributable to our purchased goods and services.</p>  |
| 44 | <p><b>Identify pockets of best practice and develop opportunities across procuring departments.</b> A centrally coordinated process will promote alignment and adoption across the organisation, using relevant Welsh Procurement Policy Notes (WPPN) as a basis for best practice.</p>   |
| 45 | <p><b>Develop tailored tools and guidance</b> to support the integration of sustainability at each stage of the procurement cycle. Engagement will be conducted with the implementing body to ensure functionality, with senior leadership taking a directive role in the dissemination to ensure adoption and implementation across the organisation. Evolve the approach so that low carbon credentials are considered alongside quality, cost, and social value as a key decision metric in tendering.</p> |
| 46 | <p><b>Communicate our ambitions for net zero to our supply chains and ask our suppliers to come on the journey to 2030.</b> This will help to ensure buy-in and collaboration with suppliers for evolving carbon accounting reporting requirements and continuous decarbonisation improvement.</p>  |



## 6. Land use

We hold an estimated 1,534 hectares of land either owned or under various leasing arrangements, with the objective to support wider economic development policy to deliver a more prosperous and fairer Wales. Based on the public sector reporting guide, the land where we are not responsible for routine management and operation is not included in our carbon footprint.

Some Welsh Government land may be utilised for future housing. We do not directly develop or procure housing construction, instead, we transfer agreed development land to registered social landlords, local authorities, and housing developers. This is usually for social housing provision, and we maximise the low carbon credentials of these developments through our WDQR 2021 standards (see section 1.4).

Wales's national land use planning policy is governed by Future Wales: National plan 2040<sup>12</sup>, which sets out a spatial development plan to make sure future land use contributes to improving the economic, social, environmental and cultural well-being of Wales. We must consider how we can best meet these needs with our existing land assets as well as meet our net zero ambition.

There is limited guidance on how organisations account for and report carbon emissions related to their land assets<sup>13</sup>, and we currently only have a high-level indication of the carbon emissions impact of our land, its potential, and priority projects.

Out to 2030, improvements in land use data and carbon accounting approach will be required alongside policy development for us to enhance our land assets and recognise carbon positive impact of any developments that take place on them.

We are exploring how to build on the strong role the land we hold for Wales has already played in hosting renewable generation, hosting 440 MW of installed capacity including the largest wind farm in England and Wales. We are exploring the establishment of a publicly owned renewable energy developer to take forward large scale renewable energy projects on the public estate.



<sup>12</sup> Future Wales: the national plan 2040 | GOV.WALES

<sup>13</sup> The GHG Protocol is expected to publish 'Land Sector and Removals Guidance' in early 2023.

## What we will do to achieve net zero

47	<p><b>Review our land holdings and green infrastructure assets</b> to understand each site's type, designation, and ownership status.</p>
48	<p><b>Identify and prioritise key strategic opportunities</b> where maintenance and/or adaptation of our owned land holdings could deliver the most significant environmental benefit. To achieve net zero, strategic initiatives should focus on larger areas with high carbon sequestration potential (e.g., peatland, forestry) and land suited to renewable energy development (e.g., brownfield sites). The opportunities identified will directly contribute to the ambition for a National Forest in Wales.</p>
49	<p><b>Maintain and enhance the resilience of ecosystems and carbon sinks</b> by acknowledging the ecosystem services they provide and including this in decision-making, alongside wider social and economic objectives.</p>
50	<p><b>Target environmental net gain for developments</b>, to minimise negative environmental impact and provide opportunities for enhancement, particularly in areas identified as ecologically or environmentally significant.</p>
51	<p><b>Require an energy report for all major development activities (by Welsh Government or third-party developers) on our owned land</b>, which will set out how energy efficiency and renewable energy opportunities will be maximised in the development.</p>



## 7. Residual emissions and offsetting

Only when we have established how we will reduce our emissions as much as possible will we consider greenhouse gas removals to offset any residual emissions to meet our targets. However, we will progress GHG removal projects over the coming years so that opportunities are not missed for the ecological benefit and a matured scale of GHG removals in Wales by 2030.

It is recognised that there are currently no definitive standards to define and guide best-practice for offsetting – particularly for the public sector, where conventional offsetting mechanisms (i.e., buying credits on the Voluntary Offset Market) are increasingly viewed as unsuitable and innovative strategies are being considered.

The offsetting market is dynamic, and we anticipate significant technology and policy development between now and 2030. Despite the uncertainty this implies, we will begin to develop a robust and credible approach that is aligned with our organisational objectives.

What we will do to achieve net zero	
52	<b>Agree on a set of priority principles</b> related to offsetting, accounting for our organisational objectives, potential co-benefits, and relevant standards (e.g., SBTi; Oxford principles for net zero aligned carbon offsetting, new GHG Protocol guidance for land use). We will thoroughly appraise available offsetting approaches to understand their alignment with our agreed priorities, including recognising ecological benefit in Wales.
53	<b>Publish an offset position statement that transparently outlines our approach to offsetting</b> , including our priorities and a shortlist of potential technologies and methods. We will be agile and remain informed of developments in best practice and adapt our offsetting strategy to align accordingly.
54	<b>We will implement offsetting for hard-to-abate emissions</b> that we cannot eliminate ourselves. This will require planning to ensure that the maturity of our offsetting projects is at a scale to balance our emissions in 2030.



## Next steps

### Developing our Action Plan

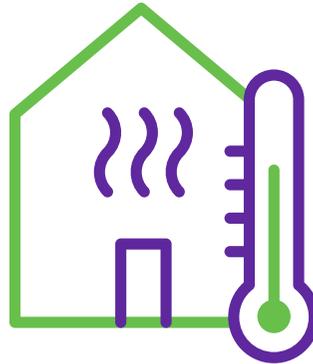
This Strategic Plan puts the foundation in place for Welsh Government to progress toward net zero as an organisation and support the wider public sector to achieve a collective net zero by 2030. More work is now required to set a specific Action Plan to deliver the change needed, this will be an internal working document for our decarbonisation programme, and will be operational by March 2023.

The key first step will be to mobilise the governance structure and build greater engagement across the organisation. This will be driven by the Chief Operating Officer as the senior responsible officer for delivering our transition towards net zero.

To address the initiatives set out, a working Action Plan across key departments will be developed and act as a key management document. This will include specific actions and activities to address each initiative and set out the timescales, responsibilities, funding requirements, and delivery risks.

### Taking action and sustaining momentum

We have already started to decarbonise our operations in certain areas; however, this Strategic Plan makes clear that only a holistic and thorough approach to decarbonisation, that affects every part of our organisation, operations, and workforce, will be sufficient for net zero to be achieved.



Delivering this Strategic Plan will not be easy – it will require support from across the existing organisation as well as further resources and funding. It is the responsibility of the Decarbonisation Project Team and departmental team leads to maximise impact across the organisation and secure additional resource to progress the decarbonisation of our activities.

### Achieving net zero

Starting now, we will increase the scale and speed at which we embed decarbonisation into our organisation and operations and evaluate the resources that will be required to deliver this Strategic Plan. Our modelling shows the need to maximise the scale of carbon reduction to be net zero ready, and go further to bridge the gap to net zero by 2030.

To meet our net zero ambitions in Wales, the Welsh Government recognises the need for it to lead by example. Tackling climate change is not driven simply by the need to hit targets and satisfy commitments, it is about protecting future generations, protecting Wales, and recognising the opportunities for Wales from this transformational journey.



## Appendix A: Emissions by scope

The GHG protocol<sup>14</sup> is a widely used and accepted methodology for greenhouse gas (GHG) emissions accounting. The GHG Protocol categorises emissions into three scopes. The Welsh Government's baseline footprint has been recalculated in accordance with the GHG protocol to allow for comparative exercises.

Scope	Description	Baseline tCO <sub>2</sub> e (FY 2019-20)
<b>Scope 1</b>	Emissions directly emitted by the organisation (i.e. natural gas burnt in a gas boiler, tail pipe emissions from a vehicle).	2,849
<b>Scope 2</b>	Emissions indirectly emitted from the consumption of purchased electricity, heat or steam.	9,080
<b>Scope 3</b>	All other indirect emissions, such as the extraction and production of purchased materials and fuels, transport related activities in vehicles not owned or controlled by the reporting entity, water consumption, waste disposal, etc.	144,616
<b>TOTAL</b>		<b>156,545</b>



## Appendix B: Pathway assumptions

Emissions source	Accelerated change	Gaining momentum
<b>Buildings and infrastructure</b>	<ul style="list-style-type: none"> <li>Accelerated decarbonisation of the national electricity supply.</li> <li>Rationalisation of the Admin Estate (17.8% reduction in estate size by floor area).</li> <li>Energy efficiency upgrades (inc. lighting, motors, chillers).</li> <li>Solar PV installed at four sites (Sarn Mynach, Rhydycar, Rodfa Padarn, Cathays Park).</li> <li>Deep electrification across the Admin Estate, with marginal residual fossil fuel consumption.</li> </ul>	<ul style="list-style-type: none"> <li>Steady decarbonisation of the national electricity supply.</li> <li>Rationalisation of the administrative estate (12.8% reduction in estate size by floor area).</li> <li>Energy efficiency upgrades (inc. lighting, motors, chillers).</li> <li>Solar PV installed at four sites (Sarn Mynach, Rhydycar, Rodfa Padarn, Cathays Park).</li> <li>Installation of electric heat pumps across the Admin Estate, with some residual fossil fuel consumption.</li> </ul>
<b>Smart working</b>	<p>A 50:50 hybrid working arrangement in 2030 has been modelled, this accounts for:</p> <ul style="list-style-type: none"> <li>Increase in office energy consumption and commuting mileage.</li> <li>Increase in additional domestic energy associated with homeworking.</li> <li>Domestic energy efficiency improvements exceeding national trends (5% reduction annually), and heating sources shifting to electricity from natural gas (40% shift by 2030).</li> </ul>	<p>70:30 hybrid working arrangement modelled:</p> <ul style="list-style-type: none"> <li>Increase in office energy consumption and commuting mileage.</li> <li>Increase in additional domestic energy associated with homeworking.</li> <li>Domestic energy efficiency improvements in line with national trends (3% reduction annually), and heating sources shifting to electricity from natural gas (20% shift by 2030).</li> </ul>

Emissions source	Accelerated change	Gaining momentum
<b>Commuting</b>	<ul style="list-style-type: none"> <li>• Model shift to low carbon forms of travel that exceed national trends. Compared to 'gaining momentum' an additional 35% of private car mileage is displaced by active travel.</li> <li>• By 2030, the average employee is driving a ULEV-compliant vehicle (75 gCO<sub>2</sub>/km).</li> <li>• Employees using their closest office one day a week.</li> <li>• National level trends towards ultra-low emission vehicles (ULEVS) and all hire cars and buses to be zero emissions by 2028 and 2035 respectively.</li> </ul>	<ul style="list-style-type: none"> <li>• Model shift to low carbon forms of travel that follow national trends.</li> <li>• Employees using their closest office one day a week.</li> <li>• National level trends towards ultra-low emission vehicles (ULEVS) and all hire cars and buses to be zero emissions by 2028 and 2035 respectively.</li> </ul>
<b>Business travel</b>	<ul style="list-style-type: none"> <li>• 50% reduction in business travel mileage.</li> <li>• At least 75% of remaining private car mileage transferred to ultra-low emissions hire cars.</li> <li>• National-level trends towards ULEVs.</li> </ul>	<ul style="list-style-type: none"> <li>• 25% reduction in business travel mileage.</li> <li>• At least 50% of remaining private car mileage transferred to ultra-low emissions hire cars.</li> <li>• National-level trends towards ULEVs.</li> </ul>
<b>Corporate fleet</b>	<ul style="list-style-type: none"> <li>• At least 75% of fossil fuel consumption (inc. 100% of Cadw's fleet) transitioning to battery electric vehicles. Half of the heavy load and specialist vehicle fleet transitions to battery electric vehicles, assuming accelerated market development and rollout of charging infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>• At least 50% of fossil fuel consumption (inc. 100% of Cadw's fleet) transitioning to battery electric vehicles. Remaining internal combustion engine vehicles are heavy load or specialised vehicles for which a current battery electric vehicle does not exist.</li> </ul>

## Appendix C: Smart working insights

### INSIGHT:

The emissions impact of an increase in teleworking is multi-faceted and a co-ordinated approach to smart working will be required to deliver carbon emissions savings.

We recognise the potential advantages of homeworking, though acknowledge that it is not a 'silver bullet' decarbonisation solution, with travel and office-related emissions in part transferred to the home rather than removed entirely. Emissions attributable to homeworking are not widely reported due to data scarcity, and they have not been included in our emissions calculations and baselining to date. We have, however, estimated them using benchmarks and assumptions from the Net Zero Carbon Reporting Guide update in 2022 and utilised in our target modelling.



The analysis exceeds the 30% national-level aim and assumes a 70:30 hybrid working model in the 'gaining momentum' scenario and 50:50 in the 'accelerated change' scenario by 2030. This modelling estimates a net carbon emissions increase compared to 2020, with the largest emissions changes resulting from commuting rather than use of our office estate, largely due to high expected efficiency of our offices in 2030.

### An increase in remote working impacts our emissions across three categories:

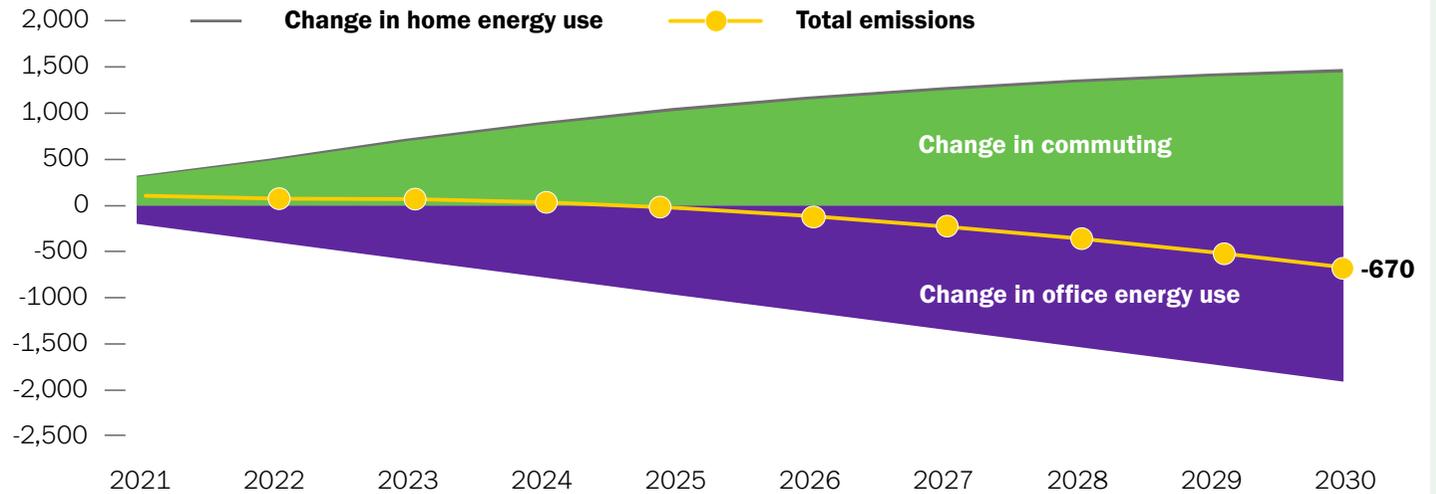
- i. Employee commuting,
- ii. Office energy consumption,
- iii. Domestic energy consumption during homeworking.

Improvements in data and further analysis will be pursued to enhance accuracy, increase our understanding, and further inform the development of our smart working policy initiatives.

### Scenario 1: Accelerated change

Staff spend 50% of their time in the office, a slight increase compared to office use during the pandemic. In this scenario, more staff travel into the office compared to in 2020. Office electricity from workstation appliances increases. Emissions from home energy use decrease as more staff work from the office, an improvement in the average home energy efficiency and due to the introduction of more domestic electric heating systems.

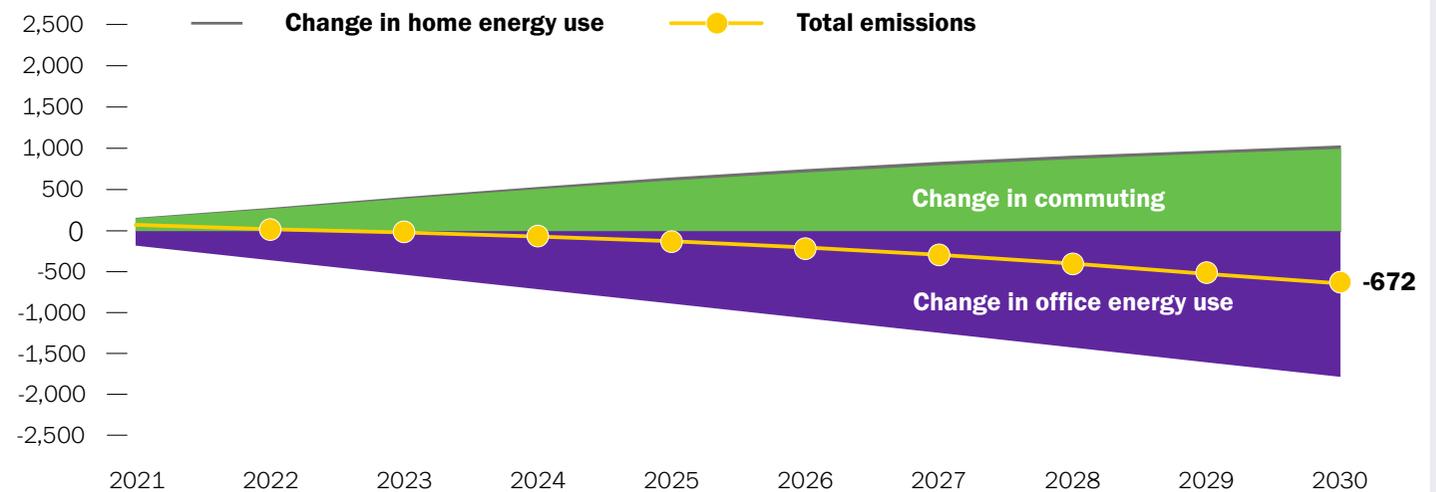
Estimated GHG emission changes from smart working relative to 2020 [50% homeworking in 2030]



### Scenario 2: Gaining momentum

Staff spend 30% of their time in the office, a more conservative increase compared to occupancy during the pandemic. In this scenario, staff commuting increases slightly, as well as the energy used in the office. Emissions from home energy use decrease as more staff work in the office relative to 2020, and due to an increase in average home energy efficiency and the introduction of more domestic electric heating systems.

Estimated GHG emission changes from smart working relative to 2020 [30% homeworking in 2030]



## Energy Service

The Welsh Government Energy Service (“WGES”) is funded by the Welsh Government with the aim of developing energy efficiency and renewable energy projects that contribute to public sector decarbonisation and national energy targets. The WGES is delivered by the Carbon Trust, Energy Saving Trust and Local Partnerships (the “Delivery Partners”). This report (the “Report”) has been produced by the Delivery Partners and, whilst the views expressed in it are given in good faith based on information available at the date of this Report:

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- › the Report is intended to provide general guidance only, rather than financial, legal or technical advice for the purposes of any particular project or other matter, and no-one in receipt of the Report should place any reliance on it in substitution for obtaining their own advice from an appropriate third party advisor;

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