



# NHS Wales Decarbonisation Strategic Delivery Plan

**2021-2030**

Published March 2021

## Who we are

Established in 2001, the Carbon Trust works with businesses, governments and institutions around the world, helping them contribute to, and benefit from, a more sustainable future through carbon reduction, resource efficiency strategies, and commercialising low carbon businesses, systems and technologies.

The Carbon Trust:

- works with corporates and governments, helping them to align their strategies with climate science and meet the goals of the Paris Agreement;
- provides expert advice and assurance, giving investors and financial institutions the confidence that green finance will have genuinely green outcomes; and
- supports the development of low carbon technologies and solutions, building the foundations for the energy system of the future.

Headquartered in London, the Carbon Trust has a global team of over 200 staff, representing over 30 nationalities, based across five continents.



The Carbon Trust's mission is to accelerate the move to a sustainable, low carbon economy. It is a world leading expert on carbon reduction and clean technology. As a not-for-dividend group, it advises governments and leading companies around the world, reinvesting profits into its low carbon mission.

The NHS Wales Shared Services Partnership (NWSSP) is an independent organisation, owned and directed by NHS Wales. NWSSP supports NHS Wales through the provision of a comprehensive range of high quality, customer focused support functions and services.



#### **Authors:**

##### **David Powlesland**

Carbon Trust Wales – Senior Manager

##### **Chris Joyce**

Carbon Trust Wales – Associate

#### **Key Contributors:**

##### **Alex Hicks**

Welsh Government – Head of Public Sector Decarbonisation

##### **Christopher Lewis**

NHS Wales Shared Services Partnership – Senior Environment and Facilities Management Advisor

##### **Craig Morgan**

NHS Wales Shared Services Partnership – Environment and Facilities Management Advisor

#### **Project Sponsor:**

##### **Neil Davies**

NHS Wales Shared Services Partnership – Director of Specialist Estate Services

##### **Rhiannon Phillips**

Welsh Government – Senior Delivery Manager Net Zero Public Sector and ETS

##### **Richard Barr**

Welsh Government – Capital Estates and Facilities

##### **Stephen Pickard**

NHS Wales Shared Services Partnership Procurement – Senior Category Manager

#### **Contributors:**

Numerous stakeholders have engaged with the development of this Delivery Plan. We would like to extend our thanks to all those who gave their time to contribute and review. This has helped to give this Delivery Plan the foundation it needs to be successful.

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*This Decarbonisation Strategic Delivery Plan is supported by a separate Technical Appendices document. The Technical Appendices document provides further detail on the specific actions required for Delivery Plan implementation.*

# Statement of Commitment



**Dr Andrew Goodall CBE**

Director General of Health  
and Social Services / Chief  
Executive of NHS Wales

A clear and ambitious green recovery will be a key component to how we respond following the COVID-19 pandemic. This NHS Wales Decarbonisation Strategic Delivery Plan demonstrates how NHS Wales can play its part in the recovery and its commitment to 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.

The Welsh Government declared a Climate Emergency in 2019 supported by Members of the Senedd. This Strategic Delivery Plan responds to this declaration and is aligned to Welsh Ministers ambition for the public sector to be net zero by 2030. As the largest public sector organisation in Wales the NHS has an important role to play to contribute towards this target and I would expect ambitious targets to be in place.

Good progress has been made in recent years across NHS Wales to decarbonise the estate but more can be done. Design and construction inevitably have a long lead-in time and ensuring we are at the forefront of emission reduction in our public buildings is ever more important. This Strategic Delivery Plan gives us opportunities to look again at building and energy uses as well as procurement, travel and other emission sources across the NHS. Despite progress to date, our operations in 2018/19, set out in the Carbon Footprint report, still resulted in the emission of more than 1,000,000 tonnes of carbon dioxide equivalent. More than two-thirds of these emissions are not in our direct control, which indicates the scale of the challenge we are embracing.

The very nature of the health service means it is unlikely we will be able to provide the services we do without causing any emissions, but more can be done to reduce them. Going forward the NHS in Wales will deliver safe and high-quality care for patients in the most effective ways, whilst also delivering on our commitments to climate change. The Wellbeing of Future Generations Act provides a unique and positive context for the NHS to exploit opportunities to make real change in its carbon emissions over the next decade.

The impact of emissions and pollution on health outcomes is also a wider health issue I am mindful of. Air pollution is widely linked to increased rates of cardiac arrest, stroke, heart disease, lung cancer, obesity, cardiovascular issues, asthma, and dementia. As a result, the Strategic Delivery Plan will not only help reduce emissions, but play a role in improving air quality which in turn has an impact on both businesses and the health service. Less emissions and the importance of green spaces and nature for example have provided significant therapeutic benefits during the pandemic and will continue to do so.

It is clear that the NHS must act now to reduce its environmental impact, play its part, and be an exemplar in the way forward in taking steps to reduce emissions.

This Decarbonisation Strategic Delivery Plan sets out our plan for addressing the Climate Emergency. The targets are ambitious, and in some areas will require a fundamental shift to our approach to healthcare, but will contribute to reducing our impact on the Global Health Emergency. The Strategic Delivery Plan sets out 46 initiatives and targets for the decarbonisation of NHS Wales that will be assessed and reviewed in 2025 and 2030.

Taking swift action over the next five years is critical to ensuring the targets within this strategy are adhered to. This relies on minimising our waste, increasing our efficiencies, and investing heavily in decarbonisation of our buildings and vehicles. Low carbon must be core to the decisions, and embedded into our everyday processes so that it becomes integral to the decisions that we make. The NHS in Wales, together with our public sector partners, must lead by example. This is particularly important with regard to our supply chain where our decisions and influence needs to be used to take our suppliers on the low carbon journey with us.

The Decarbonisation Strategic Delivery Plan has been developed through a partnership approach. Whilst recognising that some planned engagement activities were unable to take place due to the pandemic there has been significant interest in the development of the Plan both amongst NHS colleagues and wider stakeholders. I am encouraged to note that more than 100 industry experts and healthcare professionals have contributed to ensuring this plan is informed, targeted, credible, and will have a significant impact on the future operation of the Health Service in Wales.

I would conclude by saying that every single person in Wales has a role to play in the decarbonisation of our health service in line with prudent healthcare. The choices you make as an individual, as a patient, as a member of staff, as a supply chain partner, will undoubtedly play a role in helping to reduce our combined contribution to greenhouse gas emissions. We all need to contribute to this which will significantly improve wider health and well-being across the population of Wales.



Dr Andrew Goodall CBE

Director General of Health and Social Services / Chief Executive of NHS Wales

# The Climate Emergency Challenge

## A Climate Emergency for Wales

**Immediate and bold action to tackle climate change is more crucial now than ever before.**

There is now unprecedented political recognition of a global Climate Emergency. The Intergovernmental Panel on Climate Change has made it clear that limiting global warming to 1.5°C above pre-industrial levels is necessary to prevent a sustained public health catastrophe. This has culminated in the Paris Climate Change Agreement, in which 189 countries united to ratify a legally-bound commitment to act to limit global temperature rise this century.<sup>1</sup>

**The five warmest years on record have occurred in the five years succeeding the Paris Agreement.<sup>2</sup>**

Climate change is recognised as the most significant threat to the health of humanity on a global scale. The World Economic Forum states climate change as the greatest risk to the stability of the global economy, in terms of scale and likelihood;<sup>3</sup> which will increase pressure on health systems across the world. The World Health Organization estimates that climate change will lead to around 250,000 extra deaths per year globally from 2030, and that the direct cost impact will be \$2-4 billion per year over the next decade.

**With climate change and detrimental health impacts inextricably linked, the Climate Emergency must also be recognised as a health emergency.**

Increased societal awareness has led to calls for greater action to tackle climate change. Activism has enhanced the media spotlight on the climate agenda. Increased public awareness has led to growing pressure on governments and businesses to act rapidly to mitigate climate change, calling for the UK and devolved governments to formally declare a Climate Emergency. This was also supported in 2019 by an open letter signed by over 1,200 UK doctors calling for direct action against the climate crisis, citing the significant threat that climate change poses to public health.

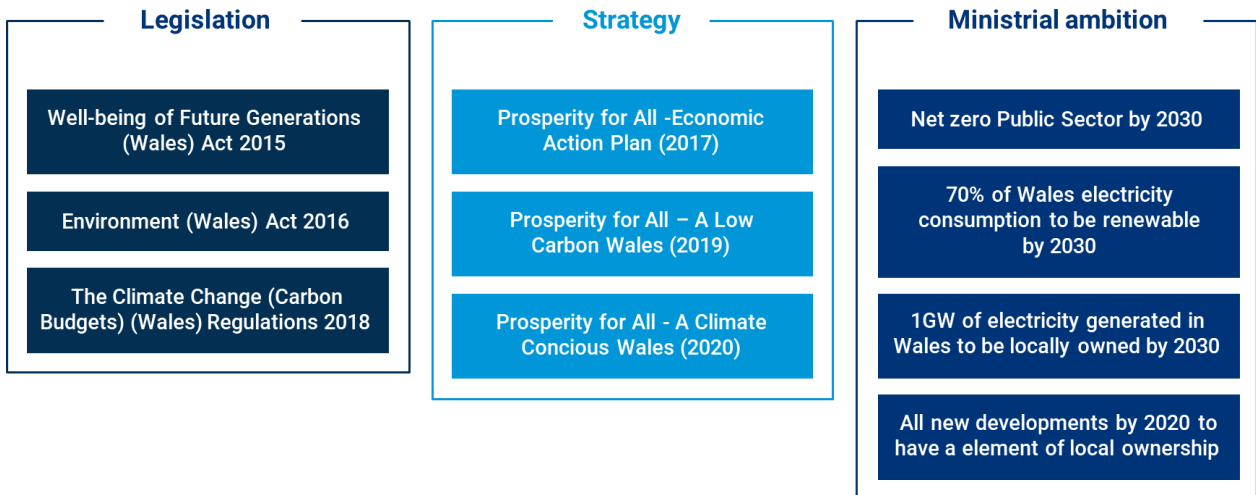
**In April 2019, with cross-party support, the Senedd was the first Parliament in the world to declare a Climate Emergency.**

Since the Climate Emergency declaration, Welsh Government has accepted the Climate Change Committee's recommendation to increase Wales's 2050 emissions target to a 95% reduction with a further ambition to achieve net zero. However further advice published in December 2020 has recommended that action needs to be taken sooner, and this must chart a steeper trajectory towards net zero.<sup>4</sup> If accepted, the advice would lead to a net zero target for all sectors in Wales by 2050 and a stretching target of a 63% reduction in greenhouse gas emissions by 2030 (compared with the current target of 45%).

**To lead the way on climate action in Wales, Welsh Government set the ambition for the public sector in Wales to be net zero by 2030.**

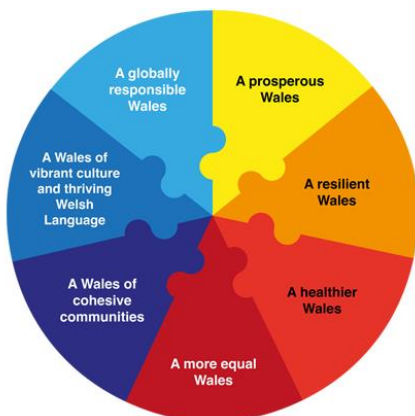
## NHS Wales Climate Emergency

To implement decarbonisation, Welsh Government has put in place binding legislation, strategies, and ambitions to drive carbon reduction activity in Wales. In March 2019 the First Minister for Wales launched Prosperity for All: A Low Carbon Wales<sup>5</sup>, this sets out Welsh Governments plan for decarbonisation in Wales. This further states the ambition for the public sector to be net zero by 2030, and the specific policy to reduce emissions in the health sector.



NHS Wales recognises it has a significant contribution to make towards the ‘team Wales’ target of a net zero public sector. To stimulate engagement and action across all parts of NHS Wales, the first initiative within this Delivery Plan provides the commitment to address the Climate Emergency.

**NHS Wales will show leadership and commitment to deliver this Decarbonisation Delivery Plan in order to address the Climate Emergency for Wales as declared by Welsh Government and the Senedd.**



The NHS Wales requirements under the *Well-being of Future Generations (Wales) Act 2015* will ensure that the climate is considered at an everyday decision-making level. This world-leading legislation places NHS Wales with a duty to support the seven Well-being Goals put in place by the act. Decarbonisation has a critical role to play in meeting this duty, in particular to achieve a resilient, healthier, and globally responsible Wales. 6

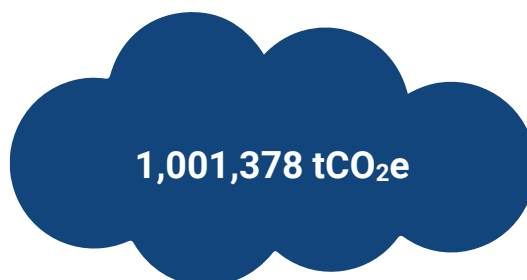
With climate change, pollution, and detrimental health linked, it is the responsibility of NHS Wales to act on the climate and health emergency to support a healthier Wales now and in the future.



## NHS Wales Carbon Footprint

Prior to developing this Delivery Plan, NHS Wales Shared Services Partnership (NWSSP) commissioned a Carbon Footprint assessment for the whole of NHS Wales. The [NHS Wales Carbon Footprint 2018/19<sup>7</sup>](#) has influenced the approach set out in this Delivery Plan and provides initial baseline emissions data for target setting.

### Total NHS Wales Carbon Emissions 2018/19



The NHS Wales 2018/19 Carbon Footprint has been calculated as approximately 1 million tonnes of CO<sub>2</sub>e, which represents around 2.6% of Wales's total greenhouse gas emissions.<sup>8</sup> This has been set as the baseline for emissions reduction targets going forward.

Emissions have been attributed to the three scopes as defined by the Green House Gas Protocol:

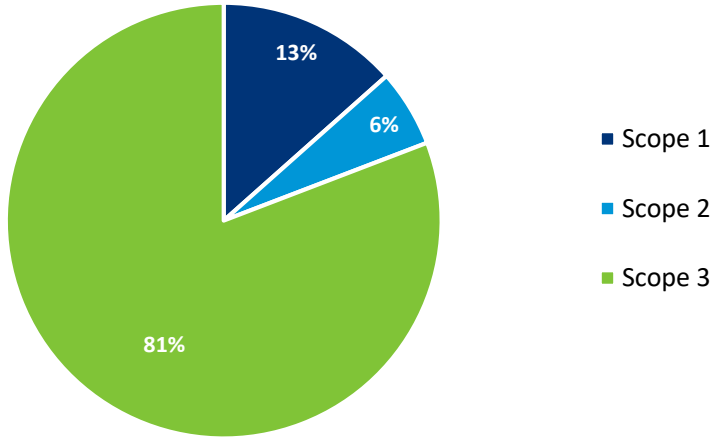
<b>Scope 1</b>	<b>Scope 2</b>	<b>Scope 3</b>
<i>Direct emissions of an organisation, including combustion of fuels and fugitive emissions</i>	<i>Indirect emissions of an organisation, including purchased electricity and heat</i>	<i>Other indirect emissions associated with an organisation, including the supply chain, transport and distribution, business travel and commuting, use of products, waste, investments and other leased assets or franchises.</i>

To aid understanding, emissions have been further broken down and analysed into **four** categories:

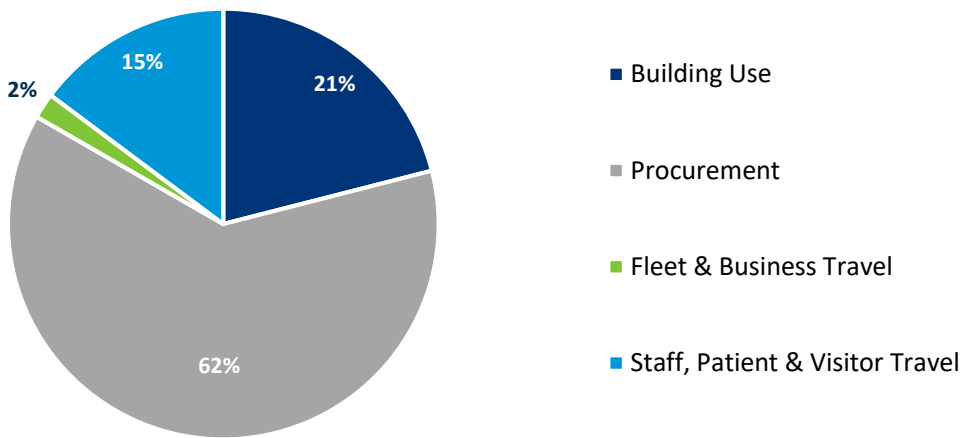
- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <b>Business use</b></li> <li>2. <b>Fleet and Business Travel</b></li> </ol> | <ol style="list-style-type: none"> <li>3. <b>Staff, Patient and Visitor Travel</b></li> <li>4. <b>Procurement</b></li> </ol> |
|---|--|

The following charts provide the split of NHS Wales Carbon Footprint by scope and by category.

**NHS Wales Carbon Footprint by Scope 2018/19**



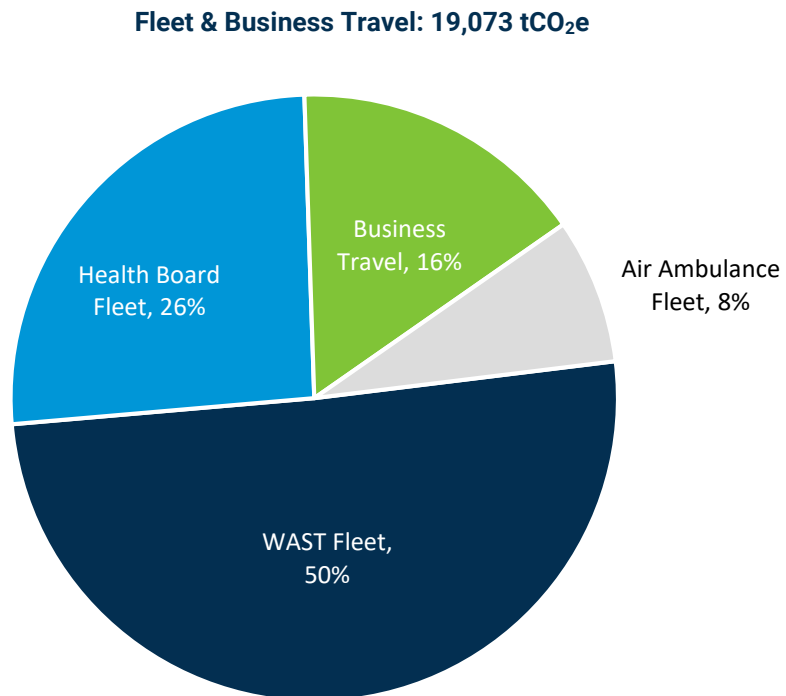
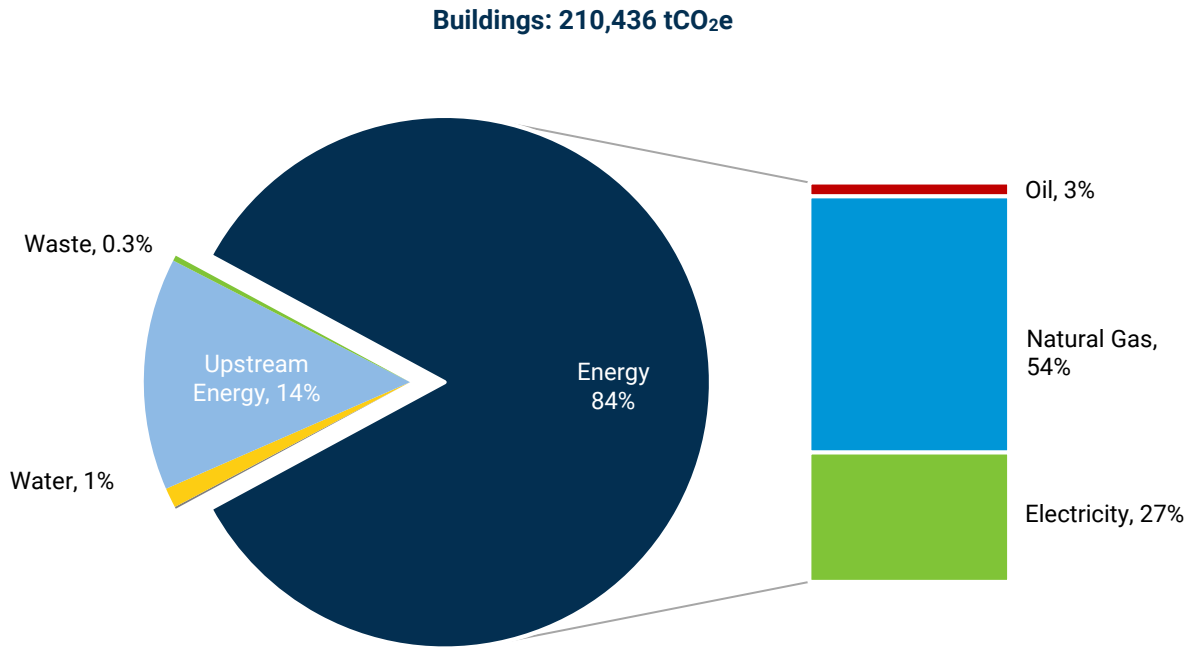
**NHS Wales Carbon Footprint by Category 2018/19**



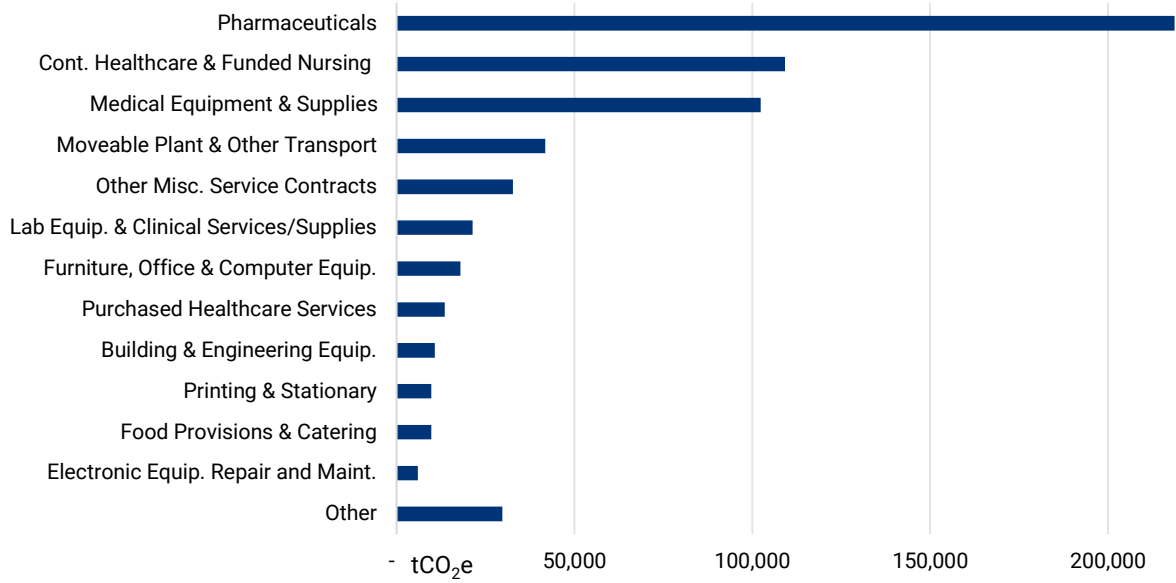
This Delivery Plan sets out a target for NHS Wales as a whole, and for the four categories of emissions assessed. However, no target has been set by scope of emissions.

The need to improve emissions data accuracy and coverage is recognised within the NHS Wales Carbon Footprint assessment. The requirement for ongoing data improvement, in particular for transport- and procurement-related emissions, is set-out within the Delivery Plan.

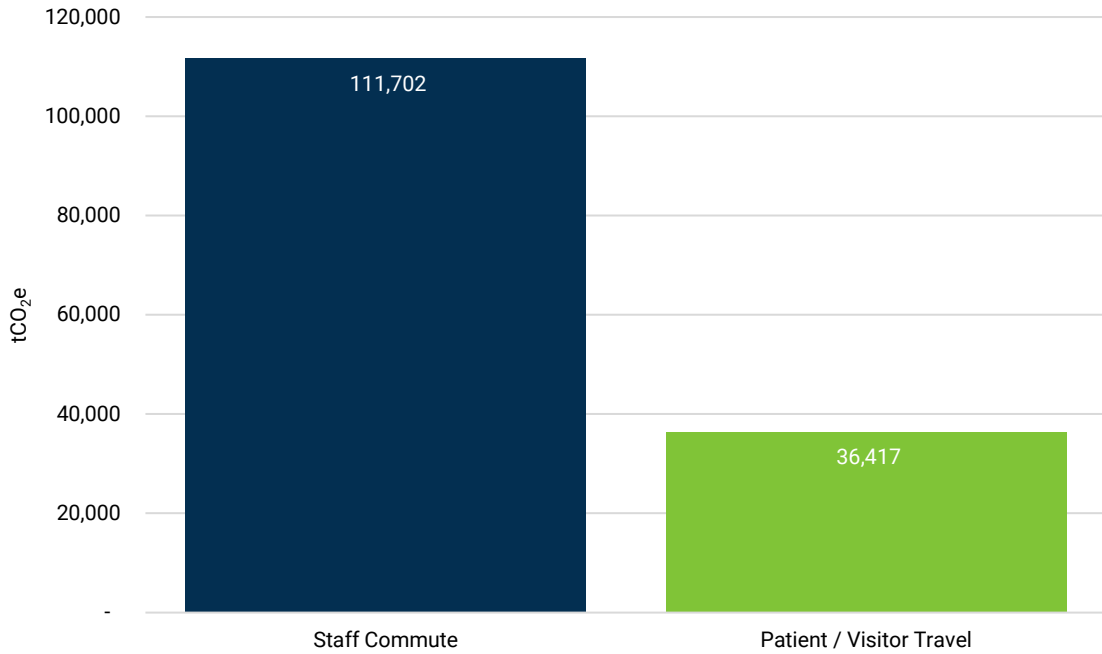
The following charts provide key summary information regarding the **four** categories assessed within the Carbon Footprint. Further detail and analysis of the [NHS Wales Carbon Footprint 2018/19](#) can be found on the Welsh Government website.



**Procurement: 623,750 tCO<sub>2</sub>e**



**Staff, Patient & Visitor Travel: 148,119 tCO<sub>2</sub>e**



## Sustainable Recovery to the Pandemic

Alongside the tragic impact of the Covid-19 pandemic, a devastating economic impact has also been recognised.

**Hundreds of health professionals in Wales have called on Welsh Government to support a 'healthy recovery' to the pandemic.** In June 2020, the UK Health Alliance on Climate Change wrote to the Prime Minister setting out 'Climate Change Principles for a Healthy Recovery.'<sup>9</sup> In July 2020, a letter signed on behalf of hundreds of Welsh doctors and healthcare workers highlighted evidence linking air pollution to the susceptibility of Covid-19 in patients, demonstrating their support for the climate agenda and recognition of the potential health benefits a green recovery can provide.



Photo credit: Laing O'Rourke

In response to the economic impact of the Covid-19 pandemic, the Welsh Government has set up a *Green Recovery Taskforce*. The aims of the task force are closely aligned with the aims of NHS Wales in this Delivery Plan. The opportunity for investment against the initiatives set-out will support a green economic recovery in Wales.

The response to the pandemic has demonstrated how significant and impactful change can be enforced into the day-to-day life of the public and the approach to work; this includes how healthcare is delivered. An NHS Trust in England demonstrated that remote working during the first Coronavirus lockdown reduced business mileage by 67% and reduced electricity consumption by 12-18% across their sites.<sup>10</sup>

**With the pandemic demonstrating that rapid and significant societal change is achievable, the goal now must be to stir similar urgency and commitment to tackle the Climate Emergency.**

# NHS Wales Commitments

This NHS Wales Decarbonisation Strategic Delivery Plan has been developed to drive an ambitious but realistic reduction in carbon emissions from NHS Wales’s operations.

This Delivery Plan sets out 46 initiatives for decarbonising NHS Wales. The commitments cover emissions from Scopes 1, 2, and 3.

The following table provides specific headline commitments up to 2030 which will be reviewed in 2025 and 2030 alongside the overall carbon reduction targets for these periods.

Access to resource and finance is critical to ensure the success of this Delivery Plan, and this will be supported by Welsh Government and NWSSP as part of the Action Plan review process. For the first year of delivery (2021-22), Welsh Government has made available £16m in capital finance.

## Moving up a gear (2020-2022)

- NHS Wales will fully support the Climate Emergency for Wales as declared by the Welsh Government
- Carbon reduction will be a high priority in business case decision making – this will mean that increased revenue costs will not be a barrier to the optimal low carbon option
- An ‘NHS Wales Climate Change Group: Decarbonisation Board’ and a ‘Decarbonisation Programme Manager’ will be put in place to lead Delivery Plan implementation
- Welsh Government will enable access to finance to support the successful implementation of the Delivery Plan
- ‘Decarbonisation Action Plans’ will be developed by Health Boards, Trusts, and NWSSP Procurement – these will be regularly updated and committed to within Integrated Medium-Term Plans on a 2-yearly basis
- All new-build developments and major refurbishments will be designed and accredited to a net zero framework

### Well on our way (2022-2026)

- NHS Wales will have reduced carbon emissions by 16% in line with the 2025 interim target
- Low carbon heat evolution plans for acute hospitals will be in place
- By 2025, all lighting across the estate will be LED
- The total renewable energy potential for the NHS Wales estate will be known, with an implementation plan progressing
- Reducing emissions will be mandated within new procurement contracts for major suppliers
- Procurement emissions accounting will shift to a 'market-based' approach
- Medical gases with low global warming potentials will be used as standard with improved emissions accounting data available to assess the impact
- All cars and light goods vehicles procured will be battery-electric where practically possible. Sufficient charging infrastructure will have been installed to support an increased uptake in fleet, staff, and public electric vehicles
- Digital technology and telemedicine will be increasingly used to increase efficiency and reduce travel

### Achieving our goal (2026-2030)

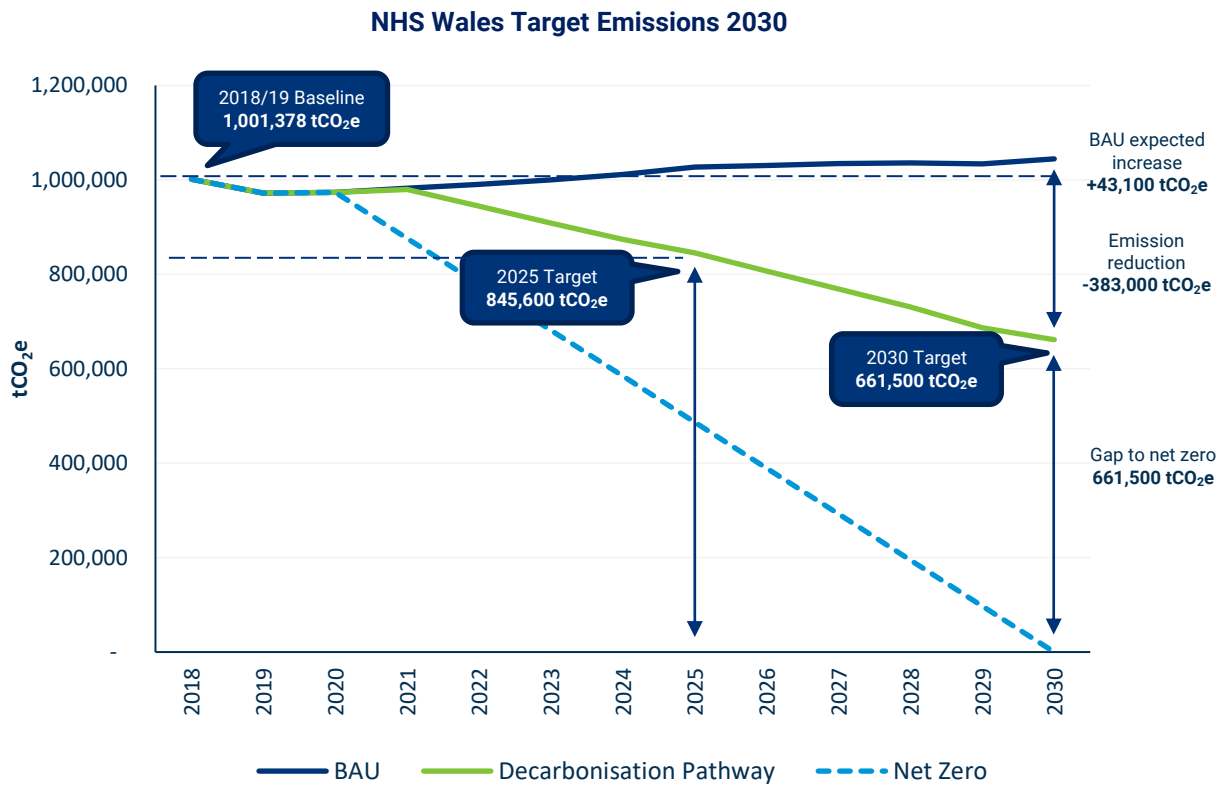
- NHS Wales will have reduced carbon emissions by 34% equivalent to 383,000 tCO<sub>2</sub>e as a minimum contribution to a net zero Welsh Public Sector
- Every building will have undergone an energy-efficient upgrade – low carbon heating will be utilised and renewable energy will be generated on site
- Aim for all natural-gas combined heat and power plant to be decommissioned
- WAST will aim for new ambulances procured to be plug-in electric, or alternative low carbon fuelled
- Large-scale renewable energy generation will be implemented by collaborating with public sector partners, landowners, developers, and local communities
- Carbon sequestration land will have been developed and included within carbon accounting
- A climate smart approach to modern healthcare will be incorporated into new developments

# 2025 and 2030 Emissions Targets

## NHS Wales' Target

NHS Wales's emissions pathway has been mapped out between 2018 and 2030 for three scenarios:

- **Business-as-usual (BAU)** – presents the expected emissions if NHS Wales took no additional action to decarbonise; despite the ongoing decarbonisation of UK electricity grid, an increase is forecast due to the continual growth of the Health Service.
- **Decarbonisation Pathway** – presents a targeted decarbonisation scenario based upon the initiatives set within this Delivery Plan; this pathway sets the overall 2025 and 2030 emissions reductions targets.
- **Net zero** – a theoretical linear decarbonisation approach that achieves zero carbon to demonstrate the gap to net zero for NHS Wales.



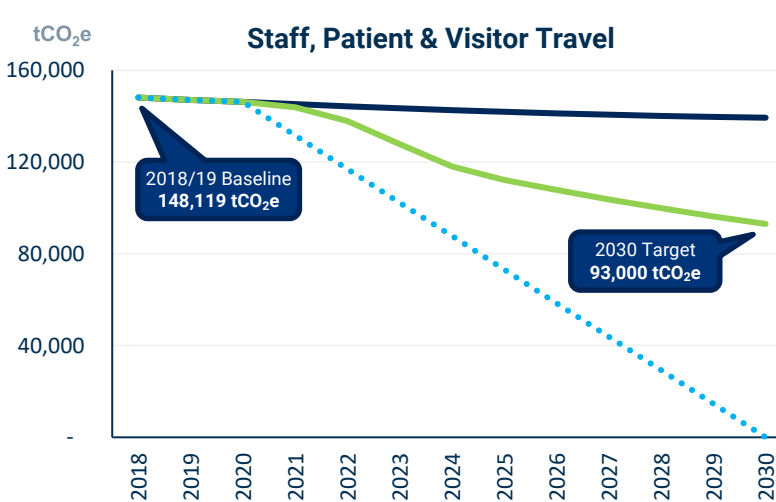
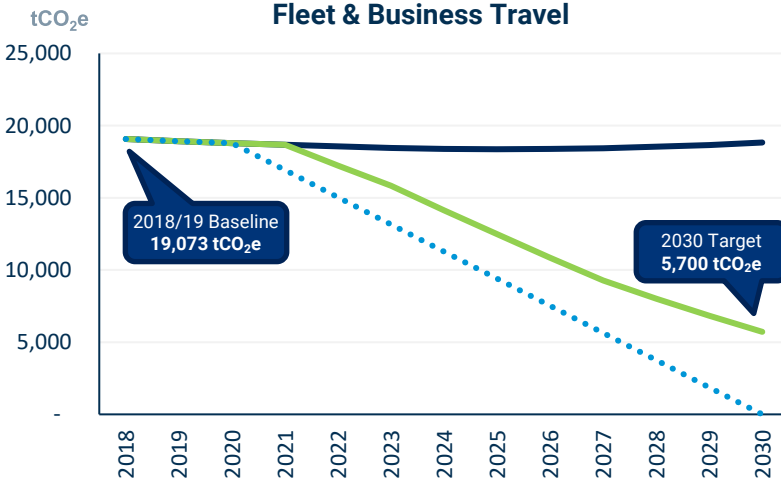
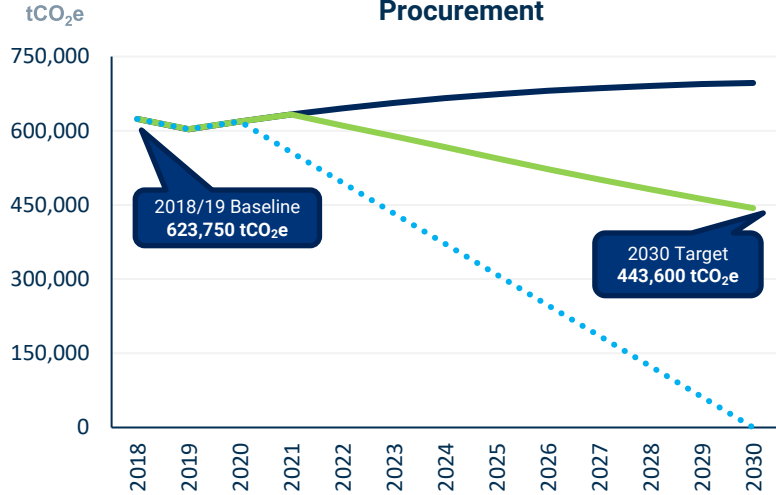
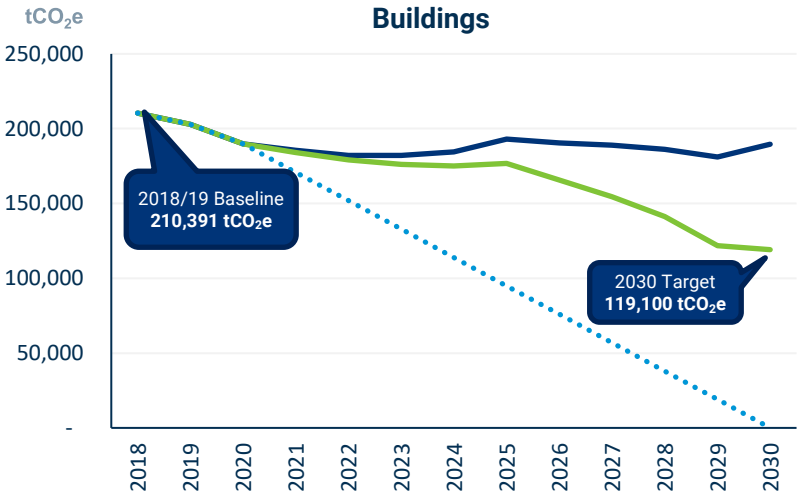
The NHS Wales 2025 and 2030 decarbonisation targets are set as follows:

NHS Wales Decarbonisation Target	Emissions (tCO <sub>2</sub> e)	Percentage reduction from 2018/19	Cumulative savings from initiatives will total (tCO <sub>2</sub> e)
2025	845,600	-16%	459,000
2030	661,500	-34%	1,982,500



# Category Targets

Alongside the overall NHS Wales emissions targets, assessments of performance will be made against the following category targets:



**Key:**

- BAU
- Interventions
- Net zero

# Delivery Plan Implementation

The success of this Delivery Plan will be highly dependent on the governance structure put in place, the management approach to ensure sustained momentum, and the financial investment put forward to support implementation. The following activities set out the implementation approach for the Delivery Plan; these are split between mobilisation and an improvement approach. Further detail regarding the specific actions, responsibilities, and target dates can be found within the Technical Appendices.

## Mobilisation

- 1 NHS Wales will show leadership and commitment to deliver this Decarbonisation Delivery Plan in order to address the Climate Emergency for Wales as declared by Welsh Government and the Senedd.
- 2 A 'Decarbonisation Board' will be put in place to oversee implementation of the Delivery Plan; this will be a sub-group of the Welsh Government NHS Wales Climate Change Group.
- 3 A 'Decarbonisation Programme Manager' will be put in place as a dedicated role to drive the focussed implementation of the Delivery Plan.
- 4 'Action Plans' will be developed, which will form the basis of how NHS Wales organisations will implement Delivery Plan initiatives – these will be developed two-yearly and committed to within Integrated Medium-Term Plans.
- 5 Welsh Government will enable the successful implementation of the Delivery Plan by supporting access to additional resource and finance for delivery of initiatives.

## Improvement and Revision Approach

- 6 NWSSP Specialist Estate Services will oversee the evolution of the Estates and Facilities Performance Management System (EFPMS) returns to capture improved data coverage and communicate carbon performance – this will evolve to align with the 'Carbon reporting guide for the public sector in Wales' data requirements when published.
- 7 Welsh Government and NWSSP will issue a revision of the Delivery Plan with updated and refined targets by 2023.
- 8 Welsh Government and NWSSP will review the success of Delivery Plan implementation in 2024, and issue an update of the Plan in 2025.

# Decarbonisation Initiatives

Decarbonisation of NHS Wales has been structured into six main activity streams:

- Carbon Management
- Buildings
- Transport
- Procurement
- Estate Planning and Land Use
- Approach to Healthcare

The activity streams do not specifically match the Carbon Footprint categories or the specific targets; they are structured to aid understanding of implementation. The initiatives included within the activity streams will often provide carbon reduction across several of the footprint categories.

*Initiatives* are the decarbonisation activities, or projects, that NHS Wales will undertake.

The identification of initiatives involved multiple parties, including the Carbon Trust, NWSSP, Welsh Government, NHS organisations, voluntary commissions, healthcare staff, and industry experts.

The Technical Appendices provides a full summary of the initiatives and sets out the specific actions, responsibilities, target dates for implementation, and appropriate exclusions.

Content	
Carbon Management	<ul style="list-style-type: none"> <li>• Approach to carbon management</li> </ul>
Buildings	<ul style="list-style-type: none"> <li>• Decarbonising the existing estate</li> <li>• Requirements for new build developments and major refurbishments</li> </ul>
Transport	<ul style="list-style-type: none"> <li>• Improvements to non-emergency response fleet</li> <li>• Improvements to fleet, staff, patient and visitor travel</li> <li>• Improvements to the Welsh Ambulance Service NHS Trust emergency response fleet</li> </ul>
Procurement	<ul style="list-style-type: none"> <li>• Improvements to supply chain carbon accounting and engagement</li> <li>• Approach to decarbonisation of the supply chain</li> </ul>
Estate Planning and Land Use	<ul style="list-style-type: none"> <li>• Approach to strategic estate planning and building use</li> <li>• Approach to using land for offsetting and renewable energy generation</li> </ul>
Approach to Healthcare	<ul style="list-style-type: none"> <li>• Approach to smart working</li> <li>• Approach to climate and decarbonisation education</li> <li>• Approach to management of healthcare and medicines</li> <li>• Approach to reducing carbon emissions from waste</li> </ul>

## Carbon Management

No.	Initiative
1	Implement best practice carbon management with dedicated roles in place to undertake Delivery Plan initiatives.
2	Proactively communicate the Climate Emergency to staff and the public with the aim of stimulating low carbon behaviours and growing engagement in the decarbonisation agenda.
3	Drive the engagement required for decarbonisation across each organisation's leadership team – Finance, Procurement, Estates, and Capital Project teams will engage to develop a focussed and active approach to project implementation.

## Existing Buildings

No.	Initiative
4	Progress a transformational energy and water efficiency retrofit programme across the estate – every building with a long-term future will have undergone a multi-technology energy-efficient upgrade by 2030.
5	Fully replace all existing lighting with LED lighting by 2025.
6	Complete expert heat studies by the end of 2023 for all acute hospitals to set the plan to transition away from fossil fuel heat sources.
7	Progress low carbon heat generation for all non-acute sites larger than 1,000m <sup>2</sup> by 2030.
8	We will not plan to install any further natural gas CHP plant - renewable CHP will be championed instead. For existing CHP plant, we will prioritise decommissioning over investment in major refurbishment of failed CHP from 2025, with the ambition for all CHP to be decommissioned by 2030.
9	Take an active approach to efficient control of energy in our buildings. All buildings will have up-to-date, standardised, and effective building management systems (BMS). Dedicated resource to optimise the use of energy by BMS control will be put in place by 2023.
10	Determine the overall viable potential for onsite renewable energy generation at each NHS Wales organisation by 2023. Install half of this potential by 2026, and the remainder by 2030.

## New Builds and Major Refurbishments

No.	Initiative
11	Develop and build low carbon buildings to net zero standard – engage and collaborate with NHS partners across the UK on the emerging net zero building standard for hospitals, and adopt a net zero building accreditation approach which will be defined by 2022.
12	All project teams to have an independent client-side sustainability representative to provide due diligence support for the optimal low carbon design across all development stages – and be responsible for ensuring the Net Zero Framework process is followed.
13	Integrate Modern Methods of Construction (MMC) into the design and construction of new buildings – this will consider modular design, offsite fabrication, and just-in-time delivery to minimise construction-related carbon emissions.
14	Install electric vehicle charging points in new developments beyond minimum requirements, and future-proof new car parks by installing infrastructure to enable straightforward installation of future charging points.
15	Prioritise low carbon heating solutions as a key design principle. No fossil fuel combustion systems are to be installed as the primary heat source for new developments.
16	Incorporate the principles of sustainable transportation into the design of new sites (in addition to electric vehicle infrastructure) in line with the Welsh Government’s Active Travel Action Plan for Wales. <sup>17</sup>



Photo credit: Laing O'Rourke

## Transportation

No.	Initiative
17	NWSSP will work with Health Boards and Trusts to develop the best practice approach for electric vehicle (EV) charging technology, procurement, and car park space planning – this will include consideration of NHS Wales’ own fleet, staff vehicles, and visitor EV charging.
18	A standardised system of vehicle management for owned and leased vehicles will be developed to plan, manage, and assess vehicle performance - this will entail central fleet management oversight within each organisation.
19	All new cars and light goods fleet vehicles procured across NHS Wales after April 2022 will be battery-electric wherever practically possible. In justifiable instances where this not suitable, ultra-low emission vehicles should be procured.
20	All new medium and large freight vehicles procured across NHS Wales after April 2025 will meet the future modern standard of ultra-low emission vehicles in their class.
21	All Health Boards and Trusts will appraise the use of staff vehicles for business travel alongside existing pool cars. Health Boards and Trusts will update their business travel policies to prioritise the use of electric pool cars, electric private vehicles, and public transport.
22	The Welsh Ambulance Service NHS Trust will continue to develop their electric vehicle charging infrastructure network plan for the existing NHS Wales estate to facilitate the roll-out of electric vehicles.



No.	Initiative
23	The Welsh Ambulance Service NHS Trust will aim for all rapid response vehicles procured after 2022 to be at least plug-in hybrid EV, or fully battery-electric in appropriate locations.
24	The Welsh Ambulance Service NHS Trust will actively engage with vehicle manufacturers for research and development of low carbon emergency response vehicles and report annually, with the ambition to operate plug-in electric, or alternative low carbon fuelled, emergency ambulances by 2028.

## Procurement

No.	Initiative
25	NWSSP will transition to a market-based approach for supply chain emissions accounting.
26	NWSSP will expand its current Sustainable Procurement Code of Practice to include a framework for assessing the sustainability credentials of suppliers.
27	Value to the local supply chain will be maximised, whilst maintaining high standards for goods and services.
28	100% REGO-backed electricity will be procured by 2025, and 100% offset gas by 2030.
29	NWSSP Procurement Services will embed NHS Wales' decarbonisation ambitions in procurement procedures by mandating suppliers to decarbonise.
30	Sustainability will be embedded within strategic governance – NWSSP Procurement Services will work across Wales to champion decarbonisation in the supply chain, and influence decarbonisation ambitions for buildings and transport.
31	NWSSP Procurement Services will improve supply chain logistics and distribution to reduce the carbon emissions from associated transport.
32	NWSSP Procurement Services will actively develop and support procurement requirements to support implementation of this Delivery Plan.

## Estate Planning and Land Use

No.	Initiative
33	All-Wales strategic estate planning will have carbon efficiency as a core principle – <i>quantified carbon</i> will be a key decision metric for planning new developments, rationalisation of the estate, and championing smart ways of working.
34	NWSSP and Welsh Government will advise Health Boards and Trusts on an appraisal approach for allocating land for uses such as renewable energy generation, greenhouse gas removal and afforestation – NHS Wales organisations will maintain green space and utilise land for decarbonisation, including collaborating with neighbouring land owners.
35	Large-scale renewable energy generation opportunities with private wire connections to NHS Wales sites will be progressed where viable.

## Approach to Healthcare – Smart Working

No.	Initiative
36	Our approach to 21st-century healthcare will be central to the design of new hospital developments – redesigning the whole journey with care closer to home in a carbon-friendly primary care estate with a reduced need to visit hospitals.
37	Support the Welsh Government’s target for 30% of the Welsh workforce to work remotely <sup>12</sup> , by continuing to facilitate flexible and smart working, developing the existing approach to remote working technology, and rationalising existing office space.
38	Continue to utilise technology to increase the efficiency of engagements between staff and the public where suitable.

## Approach to Healthcare – Education

No.	Initiative
39	Health education will be used to champion decarbonisation across our service – we will encourage sustainable healthcare practice, waste efficiency, and low carbon staff and patient behaviour.



## Approach to Healthcare – Healthcare and Medicines

No.	Initiative
40	Support the work of existing working groups such as the Welsh Environmental Anaesthetic Network to raise awareness of the carbon impact of medical gases and transition to a culture where gases with low global warming potentials are prioritised.
41	Explore methods of minimising gas wastage and technologies to capture expelled medical gases.
42	Take a patient-centric approach to optimise inhaler use, focusing on a reduction in the over-reliance of reliever inhalers where possible and emphasising the importance of inhaler-specific disposal and recycling.
43	Transition the existing use and distribution of carbon-intensive and high global warming potential (GWP) inhalers to alternative lower GWP inhaler types where deemed suitable.

## Approach to Healthcare – Waste

No.	Initiative
44	Support the development of guidance by 2022 for best practice reduction of pharmaceutical waste.
45	Develop a 'plastics in healthcare' initiative to address waste in the delivery of health care – this will aim to tackle PPE, single use plastics, and packaging waste.
46	Engage with pharmacists and prescribers to build upon and support existing efforts to encourage responsible disposal of inhalers through discussions with patients, information leaflets, posters and media.

# Roadmap

The roadmap timeline sets out the NHS Wales summarised initiative activity out to 2030. To influence the roadmap, and the initiatives included within this Delivery Plan, a high-level scoring exercise has been undertaken. The scoring reflected should be used to reflect and visualise initiatives only, this does not provide the detail required to justify that one initiative should be prioritised over another, and is not a precise representation of impact.

Appraisals of initiatives were undertaken using the following metrics:

- *Carbon impact*
- *Technology and market readiness*
- *Effort and resource demands*
- *Strategic importance for enablement*

A quantitative scoring was allocated to each metric, with the combined total providing the overall score for each initiative. To maintain a decarbonisation focus, the carbon impact metric has a double weighting than that of other metrics. The Technical Appendices provides a full summary of initiative scoring and additionally includes a high-level financial impact assessment.

	Selected Example Initiatives	Score (/25)
5	Fully replace all existing lighting with LED lighting by 2025.	14
6	Complete expert heat studies by the end of 2023 for all acute hospitals to set the plan to transition away from fossil fuel heat sources.	17
11	Develop and build low carbon buildings to net zero standard – engage and collaborate with NHS partners across the UK on the emerging net zero building standard for hospitals, and adopt a net zero building accreditation approach which will be defined by 2022.	15
19	All new cars and light goods fleet vehicles procured across NHS Wales after April 2022 will be battery-electric wherever practically possible. In justifiable instances where this not suitable, ultra-low emission vehicles should be procured.	12
29	NWSSP Procurement Services will embed NHS Wales’ decarbonisation ambitions in procurement procedures by mandating suppliers to decarbonise.	22

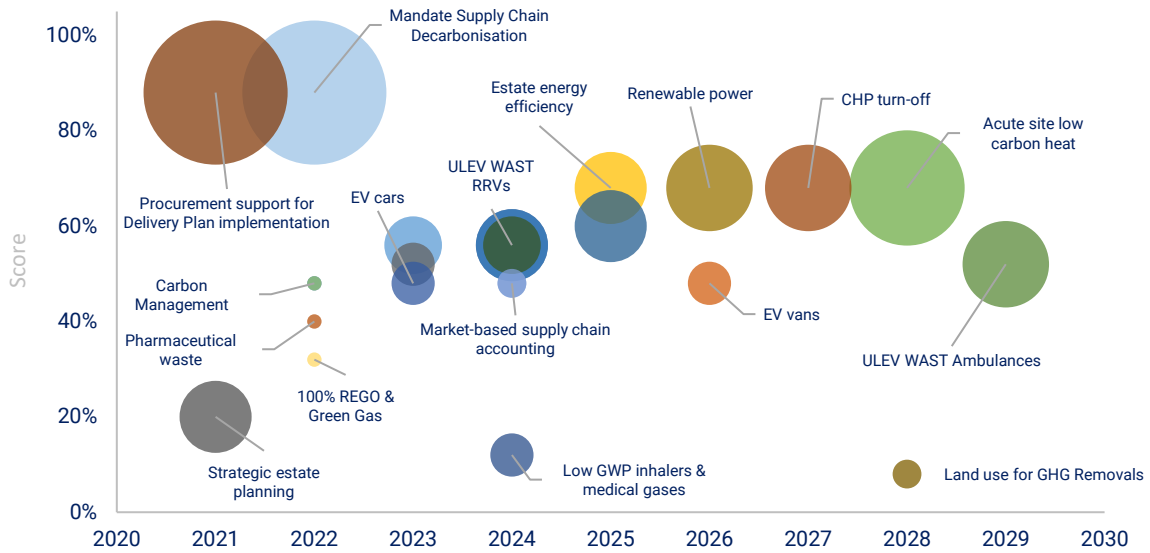
## Initiative Roadmap Scoring

The following charts provide a visualisation of the initiative appraisal. The chart presents:

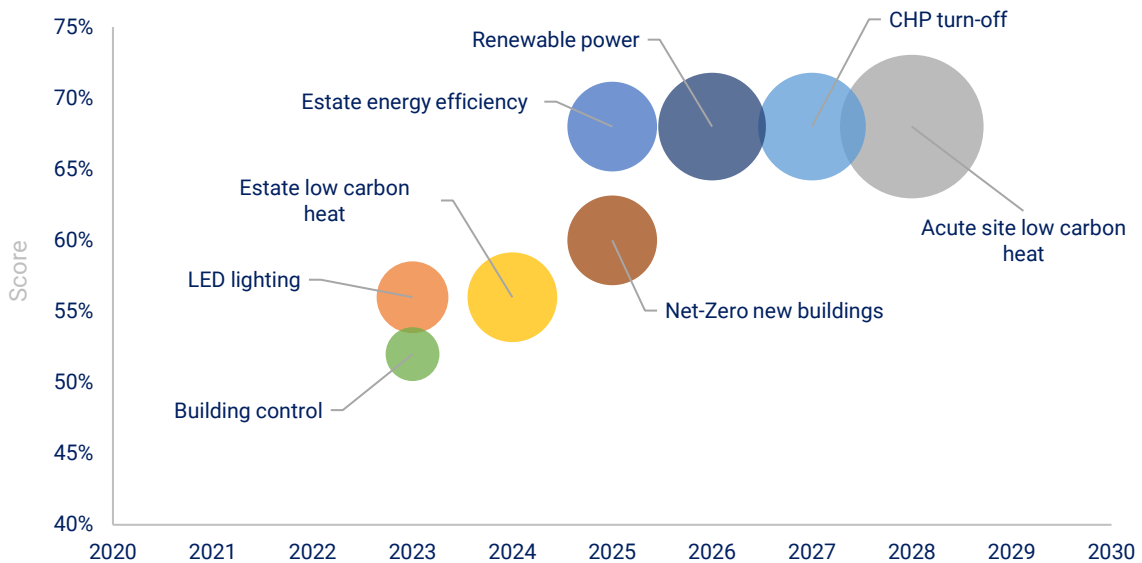
- Indicative year in which implemented (in reality each will be across several years)
- Initiative score, shown as a percentage, based on the assessment against the four metrics
- Initiative carbon impact, represented by the size of the bubble.

Selected initiatives are presented in the first chart covering buildings, transport, procurement, and the approach to healthcare. Highest scoring and largest impact initiatives relate to procurement, these are shown early on the timeline. The second chart presents building only initiatives for comparison.

**Selected Initiative Roadmap Scoring**



**Building Initiatives Roadmap Scoring**



## Roadmap Timeline for Implementation

The following timeline summarises key initiatives across buildings, transport, procurement, and the approach to healthcare.

	Buildings	Transport	Procurement	Approach to Healthcare
2021	Action Plan requirements and expectations to be developed	A best practice approach for EV infrastructure and management will be developed	NWSSP will start the transition to a market-based approach for supply chain emissions accounting	The Welsh Government's 30% work from home target will be facilitated with appropriate technology and an updated approach to office use
2022	Effective building management systems and dedicated resource to optimise the use of energy by better control will be put in place	All new cars and light goods fleet vehicles procured across NHS Wales after April 2022 will be battery-electric where possible	The Sustainable Procurement Code of Practice will include a framework for assessing the sustainability credentials of suppliers	Anaesthetists will be prioritising medical gases with low global warming potentials as standard
2023	By 2023 low carbon heat evolution plans will be completed for all acute hospitals, and renewable energy implementation plans will be developed	WAST will aim for all rapid response vehicles procured after 2022 to be at least plug-in hybrid-electric or fully battery-electric for appropriate locations	NWSSP Procurement will actively be working with targeted suppliers and sectors, and will have contractually mandated decarbonisation into major procurements	Best practice pharmaceutical waste practice will be in place championing better prescribing, reviewing, just in time delivery, and a shift away from procuring bundles of pharmaceuticals
2024	New buildings will be constructed and accredited to a net zero standard.		NWSSP Procurement Services will improve supply chain logistics and distribution to reduce the carbon emissions from associated transport	Technologies to capture expelled medical gases will have been assessed and put into trial

	Buildings	Transport	Procurement	Approach to Healthcare
2025	Decommissioning of natural gas CHP plants will be prioritised over refurbishment. All lighting will be fully replaced by LED	All new medium / large freight vehicles procured across NHS Wales after April 2025 will be to the future modern standard of ultra-low emission vehicles	NWSSP will have updated to market-based emissions accounting, and continues to engage with supply chains to support decarbonisation	Digital technology will be developed to support a smart communication approach between our sites and with the public at home
2026 / 27	50% of overall renewable energy generation potential will have been installed			
2028 / 29		WAST will aim for new ambulances procured to be plug-in electric, or alternative low carbon fuelled		
2030	Every building will have undergone an energy-efficient upgrade – low carbon heating will be utilised, renewable energy will be generated on site, and all gas CHPs will be decommissioned		Significant parts of the supply chain will have progressed to net zero emissions	

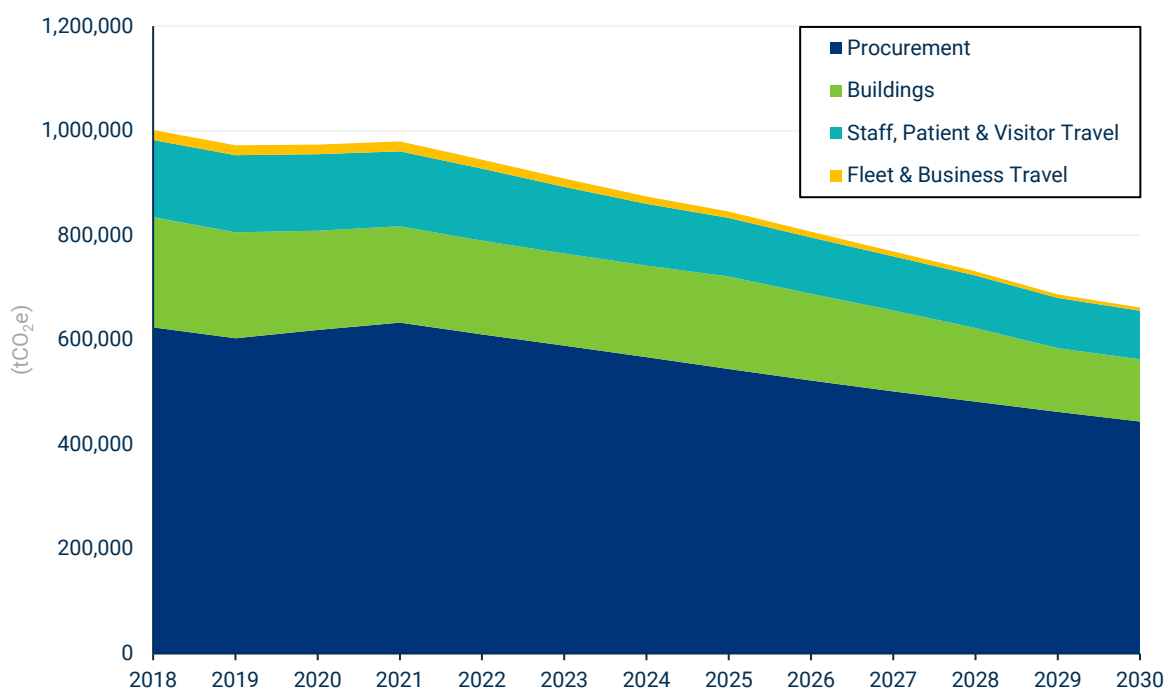
## Emissions Modelling

The decarbonisation initiatives set out in the roadmap were modelled across the next decade based upon when and how the measures could be implemented.

The figure below shows an indication of how NHS Wales' emissions could look if the decarbonisation roadmap is followed. It shows decarbonisation speeding up after 2021, with the most significant decreases in emissions occurring from 2026 onwards with increasing scale of implementation of the Delivery Plan initiatives.

All emissions categories assessed demonstrate a reduction in emissions, this is also with respect to business-as-usual increases due to estate and healthcare service expansion. The largest source of emissions shown up to 2030 remains emissions associated with the procurement of goods and services.

**NHS Wales 2018 - 2030 Emissions**



In 2030, the estimated residual emissions are 661,500 tCO<sub>2</sub>e, with a 34% reduction achieved against the BAU. This presents the anticipated contribution to a net zero Welsh public sector.

The net zero target for the public sector will be on a 'team Wales' basis<sup>13</sup>; this means that carbon-positive organisations (such as Natural Resources Wales) will balance with residual emissions of other Public Bodies such as NHS Wales. To support consistent carbon accounting, a Carbon reporting guide for the public sector in Wales developed by Welsh Government is expected to be published in 2021.

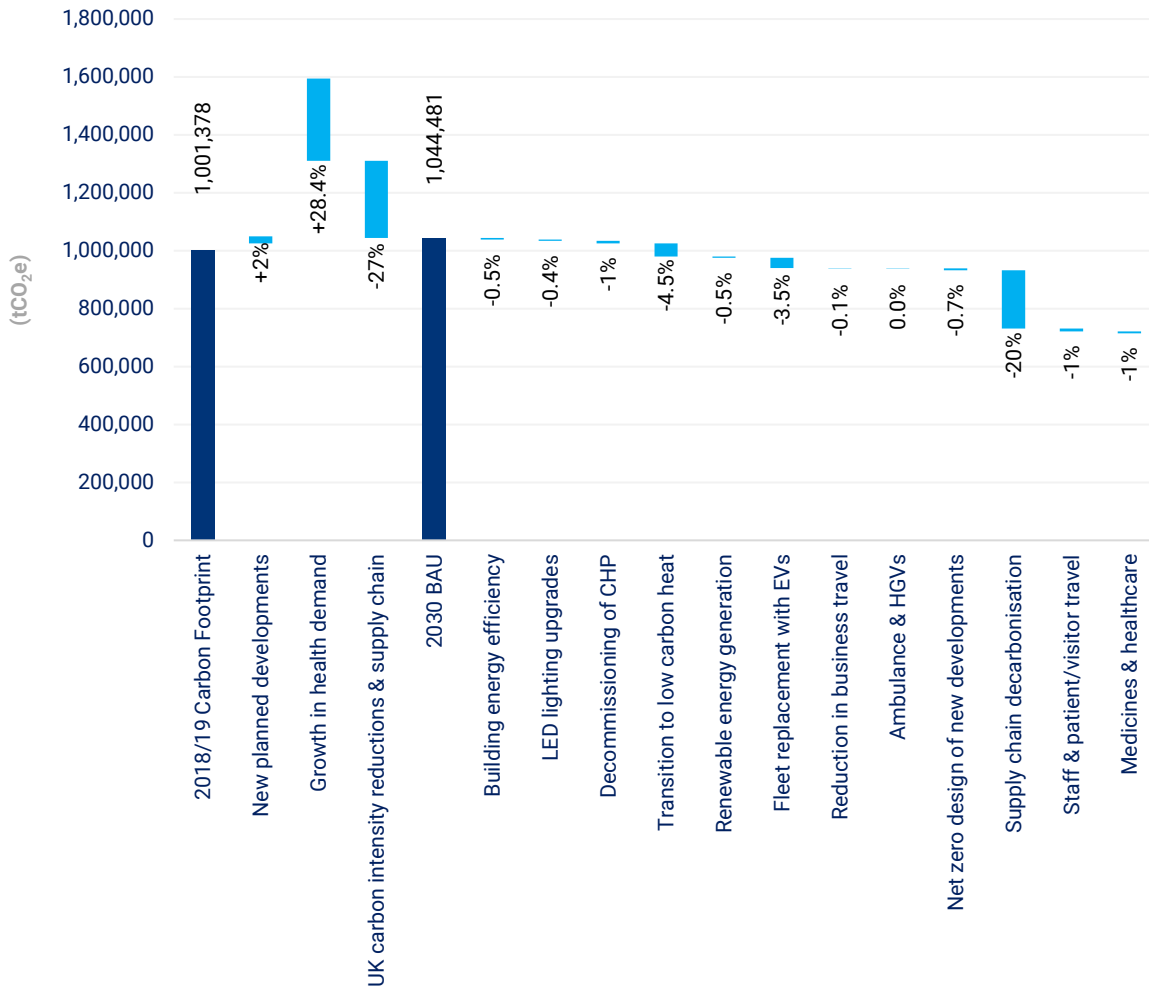
# NHS Wales 2030 Emission Reduction Breakdown

The carbon reduction contribution of initiatives set out in the Delivery Plan has been mapped against the 2018/19 carbon footprint as a baseline (1,001,378 tCO<sub>2</sub>e).

Business-as-usual (BAU) up to 2030 includes the estimated increases in emissions from the expansion of the NHS Wales estate (2% increase in emissions), and increased demand for health care (28% increase in emissions linked to population growth and higher energy intensity of healthcare technology, etc.). The decarbonisation forecasts for UK grid electricity, the average UK vehicle emissions, and for the supply chain are reflected within 'UK carbon intensity and supply chain'; this presents a 27% reduction to show a BAU 2030 down to a similar level of emissions as 2018/19.

Initiatives have been simplified and modelled to present the contribution to the 34% carbon reduction target against a 2030 BAU.

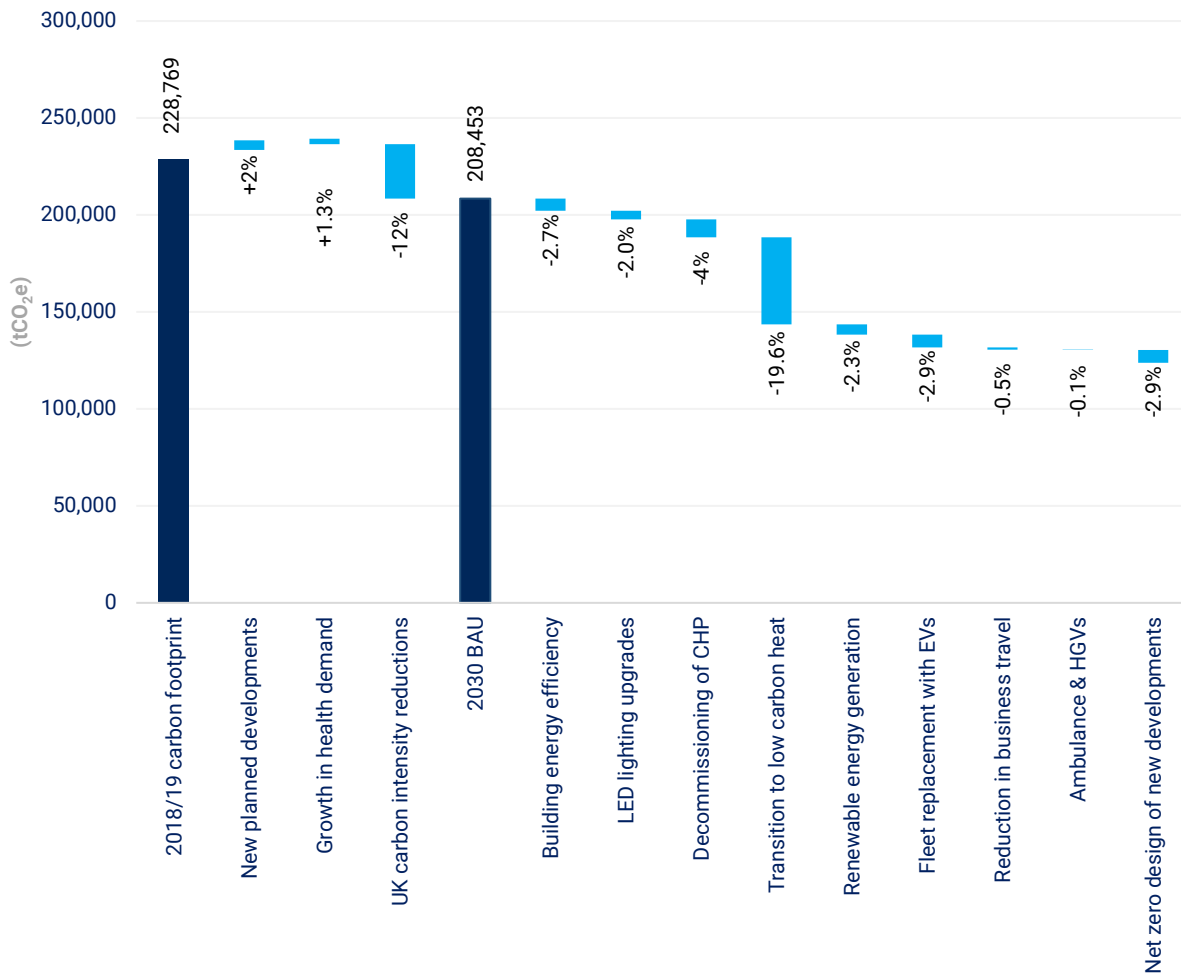
**2030 Emission Reductions from Initiatives**



# Buildings and Fleet 2030 Emission Reduction Breakdown

The following chart shows the potential emission reductions against the two categories of buildings, and fleet & business travel. These categories have been selected for presentation due to NHS Wales' direct control and influence over emissions.

2030 Buildings and Fleet Emission Reductions through Initiatives







4

'Action Plans' will be developed, which will form the basis of how NHS Wales organisations will implement Delivery Plan initiatives – these will be developed two-yearly and committed to within Integrated Medium-Term Plans.

5

Welsh Government will enable the successful implementation of the Delivery Plan by supporting access to additional resource and finance for delivery of initiatives.

For this Delivery Plan to be considered successful, a step-change in decarbonisation activity must be recognised.

The basis for the response to this Delivery Plan will be for NHS Wales organisations to develop Action Plans setting out how progress will be made against the initiatives set. It is important this is aligned with the strategic direction of each organisation also; therefore, the implementation of decarbonisation Action Plans are required to be committed to within Integrated Medium-Term Plans.

Key actions for each initiative are highlighted in the Technical Appendices, many of which will support Action Plan development. Important early actions for 2021/22 include putting in place data collection requirements to support market-based emissions accounting, supporting the approach for electric vehicles, planning specialist heat assessments, and engaging on the development of a new net zero building standard.

It is recognised that access to additional resource and finance is critical to ensure the success of this Delivery Plan. However, much progress can be made by championing decarbonisation within the decision-making process, and by integrating this into behaviour across NHS Wales.

Nevertheless, significant investment will be needed to meet the 16% reduction target by 2025 and 34% reduction target by 2030.

As part of the Action Plan development and review process, the *Climate Change & Decarbonisation Programme Board* and Welsh Government will understand the capital and revenue impacts for NHS Wales organisations. This will allow a strategic approach to be taken for investment decisions. The journey must start right away, to support this Welsh Government have ringfenced an initial £16m of decarbonisation capital to support initiative implementation in 2021/22.

The ultimate focus of Action Plans and investment decisions must be to recognise a step change in emissions across NHS Wales. Targets have been set for 2025 and 2030 for the overall emissions and a percentage reduction, these however will both be impacted by other business as usual changes in the health service. To appraise the success of action taken, a cumulative savings from initiatives target will be set; this will provide a focus to tracking interventions made through Action Plans across NHS Wales.

NHS Wales Decarbonisation Target	Emissions (tCO <sub>2</sub> e)	Percentage reduction from 2018/19	Cumulative savings from initiatives will total (tCO <sub>2</sub> e)
2025	845,600	-16%	459,000
2030	661,500	-34%	1,982,500

1

NHS Wales will show leadership and commitment to deliver this Decarbonisation Delivery Plan in order to address the Climate Emergency for Wales as declared by Welsh Government and the Senedd.

The most critical next step is to ensure that all parts of NHS Wales fully engage with and support the Climate Emergency.

This Delivery Plan provides a clear statement of commitment from Dr Andrew Goodall CBE, Chief Executive of NHS Wales, that NHS Wales will show leadership to tackle the Climate Emergency. This simple message must be the catalyst for all NHS Wales to engage and act.

Urgency, collaboration, and ongoing action are required to address climate change as a common cause, and to support the well-being of our future generations for a healthier Wales.



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+44 (0) 20 7170 7000

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