

Why Net Zero

Chapter

1



Levelling up the country, ending our domestic contribution to climate change, and leading the world to a greener, more sustainable future

The case for action

1. We are at a crossroads in our history. As we recover from the impact of the pandemic on our lives and livelihoods, we know that it will not be enough to go back to the way things were before. The science is clear, we know that human activity is changing our climate and that this will have a devastating impact on human lives, the economy, and the natural world – ranging from the extinction of some species and the melting of ice caps to extreme weather patterns threatening our homes, businesses, and communities.¹ As the latest report by the Intergovernmental

Panel on Climate Change (IPCC) shows,² this is no longer a challenge for tomorrow: we are already seeing the impacts today with increased incidence of events such as extreme heat, floods, and wildfires across the globe. We need to act urgently and reduce emissions globally to limit further global warming. The landmark 2015 Paris Agreement agreed to hold the increase in the global average temperature to well below 2°C above pre-industrial levels, and to pursue efforts to limit it to 1.5°C.



The UK's net zero target

The UK was the first major economy to create a legally binding target to bring greenhouse gas emissions to net zero by 2050. This target was set considering the latest scientific evidence and was recommended by the Climate Change Committee (CCC), the UK's independent climate advisory body. The net zero target also responds to the overwhelming public support for acting on climate change. In recent surveys of the UK public, 80% of participants expressed concern about climate change.³

Government is committed to ambitious decarbonisation measures across society. However, we know that this does not mean emissions will drop to *absolute zero* by 2050 – we acknowledge that sectors such as industry, agriculture, and aviation are difficult to decarbonise completely. Greenhouse gas removals (GGR), like trees and carbon capture and storage technology, are therefore essential to compensate for the residual emissions arising from these hard to decarbonise sectors, so we can reach *net zero* by 2050.

2. The sooner we act on climate change the lower the costs will be. Globally, the costs of failing to get climate change under control would far exceed the costs of bringing greenhouse gas emissions down to net zero. The Office for Budget Responsibility concluded that there could be significant fiscal benefits from early action to transition to net zero, meaning the costs will be lower than if we delay.⁴ Delaying action would only serve to put future generations at risk of crossing critical thresholds resulting in severe and irreversible changes to the planet, the environment, and human society. On the other hand, early and ambitious action would help protect lives and livelihoods, while maximising the co-benefits for people, society, the environment, and the economy.⁵ As part of the transition to net zero emissions, we will transform our energy system away from fossil fuels to low carbon sources of energy, such as renewable electricity generated in the UK. This will ensure sustainable and affordable energy supplies and protect consumers by reducing our exposure to volatile international fossil fuel

markets which have caused the recent spike in gas prices.

3. The UK has long led the way in tackling climate change, and immediate action to reduce emissions brings enormous economic opportunities to revitalise our economy and deliver on our priority to level up the country. Across the globe, as governments, people and businesses rise to this challenge, a growing global green economy has the potential to create millions of new jobs. We are uniquely placed to seize this once-in-a-generation opportunity and deliver a transition to net zero that has the potential to create thousands of jobs in every part of the UK.

4. We must, therefore, build back better. Our vision, building on the Prime Minister's *Ten Point Plan for a Green Industrial Revolution*, is to level up our country with new green jobs, end our contribution to climate change, and reverse the decline of our natural environment, leading the world to a greener, more sustainable future.

Plan for Growth and green sector vision

This strategy sets out how we will build on the Prime Minister's *Ten Point Plan* with our vision to create new jobs and net zero industries as we meet our climate targets. In turn, this will support levelling up the country, and put the UK at the forefront of the global green markets.

We are laying the foundations for businesses to invest in the UK's green economy, taking action to ensure we have the right skills to deliver a green industrial revolution and committing to work with industry to develop sector and supply chain action plans in areas where the UK has an economic advantage.

Build Back Better: Our Plan for Growth sets out the Government's commitment to supporting future growth sectors based on the UK's comparative advantage and growth potential, and commits to publishing sector visions across these sectors. This strategy articulates our vision for the green economy. We will build on this with more detail in further Sector and Supply Chain Development Plans – such as the CCUS supply chains roadmap published earlier this year, and the Hydrogen Sector Development Action Plan which we will publish in 2022.

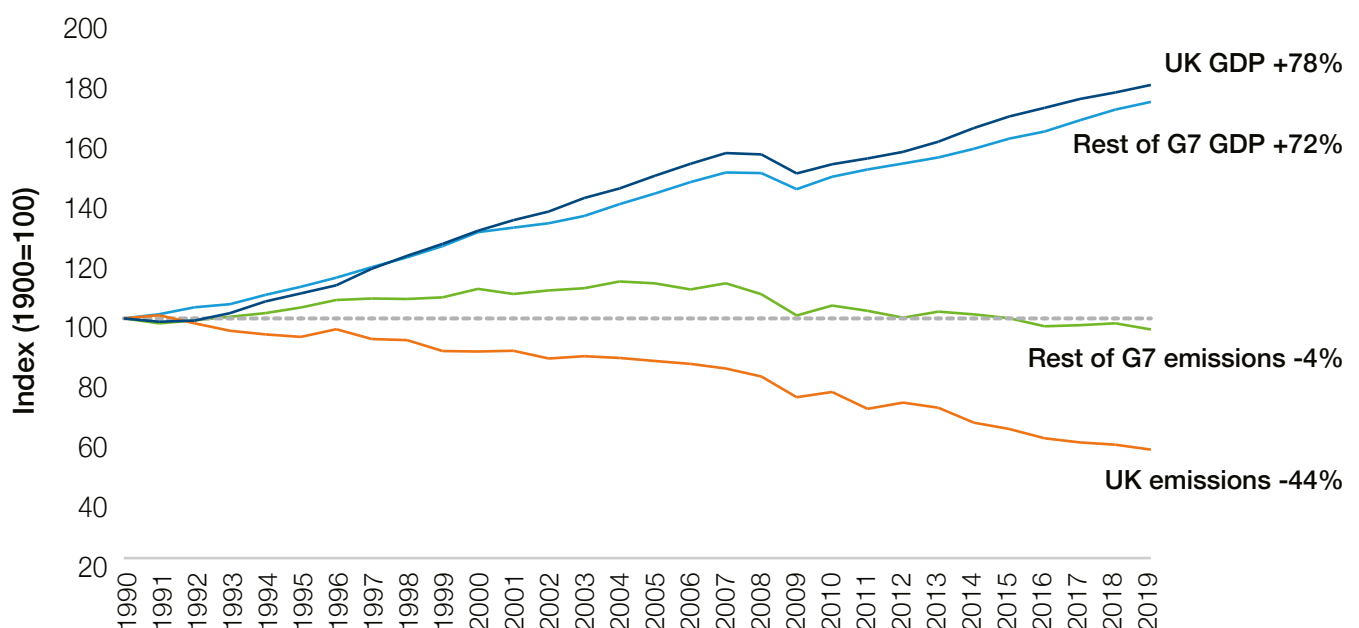


Driving a green industrial revolution and levelling up the UK

5. The UK has long proved that tackling climate change and delivering economic growth can go hand in hand. Between 1990 and 2019, we cut emissions faster than any other G7 country, a 44% reduction.⁶ We achieved this whilst growing our economy by 78%.⁷ Our latest official estimates show that 410,000 people work in the UK's low

carbon economy and its supply chains across the country, with an estimated turnover of £42.6 billion in 2019.⁸ These numbers are even higher once we account for the jobs and economic activity supporting broader environmental policies such as climate adaptation and biodiversity.

Figure 2: UK vs Rest of G7 GDP and GHG Emissions⁹



Source: The World Bank, UNFCCC National Inventory Submissions, ONS, BEIS Greenhouse Gas Inventory.

6. As the world moves to tackle climate change, new opportunities will arise for UK companies in domestic and international markets. Updated analysis, based on the BEIS Energy Innovation Needs Assessment (EINA) suggests key net zero aligned sectors in the UK could contribute up to £60 billion of gross value added (GVA) a year by 2050.¹⁰

7. We have immediate opportunities to capitalise on our core strengths: the largest market for offshore wind in the world, a world-class oil and gas sector, and the

City of London is long established as a leader in green finance.¹¹ In the long term, evidence from the Energy Innovation Needs Assessment (2019) and subsequent analysis, point to domestic and export opportunities for the UK in electric vehicle technologies and manufacturing, the next generation of offshore wind (including new approaches such as floating offshore wind), carbon capture, usage and storage (CCUS), low carbon hydrogen, smart energy systems and storage, and direct air carbon capture and storage (DACCS).

8. The opportunities for British innovation, expertise, and products will not just be confined to these shores. The value of goods and services exported by UK low carbon and renewable energy businesses exceeds £7 billion.¹² The net zero transition will create new growth opportunities for UK based companies, such as Livingstone based FoundOcean and Trelleborg's North West England based operation, who won contracts with the support of UK Export Finance (UKEF) to supply Taiwan's growing offshore wind market.

9. These opportunities show that net zero and levelling up go hand in hand. Delivering net zero allows us to boost living standards by supporting jobs and attracting investment in the green industries of the future, which can be in areas that need this the most. Crucially, delivering net zero also involves supporting workers employed in high carbon industries that will be affected by the transition, by giving them the skills they need to make the most

of new opportunities in the green economy. But the link between net zero and levelling up is wider than just the economy, net zero can deliver wider benefits for people and communities across the UK by helping spread opportunity and restore pride in place.

10. We are already taking action to make the most of these opportunities. We have embedded a net zero principle in our levelling up funding initiatives, such as the Levelling Up Fund and the Towns Fund, so that these schemes can contribute to meeting our net zero targets and help places to reduce their carbon impacts. Later this year, we will publish a Levelling Up White Paper. This will build on the actions the government is already taking to both deliver net zero and level up across the country, including the ones set out in this strategy, and set out new interventions to improve livelihoods and drive economic growth in all parts of the UK.

Maximising opportunities after leaving the EU

Following the UK's departure from the European Union in January 2020 the UK now has the flexibility to determine our own decarbonisation pathways to 2050, in a way that fully utilises the unique strengths and opportunities of UK diplomacy, industry and innovation.

Since leaving the EU, the UK has built on our climate leadership, demonstrating an independent and ambitious approach to meeting our 2050 target:

- Setting an ambitious Nationally Determined Contribution (NDC) under the Paris Agreement, committing to the fastest rate of reducing emissions on 1990 levels of any major economy.
- Setting out ambitious plans with bold policy action across key sectors of the economy, such as the Prime Minister's *Ten Point Plan for a Green Industrial Revolution*, the *Energy White Paper*, *North Sea Transition Deal*, *Industrial Decarbonisation Strategy*, *Transport Decarbonisation Plan*, *Hydrogen Strategy*, and the *Heat and Buildings Strategy*.
- Establishing a UK Emissions Trading Scheme (UK ETS), to replace the UK's participation in the EU ETS, that demonstrates the UK's commitment to carbon pricing as an effective tool that will help fulfil our climate change objectives. The UK ETS will be aligned to our net zero target, giving industry the certainty they need to invest in low carbon technologies.

Supporting green jobs across the UK

11. Last year, the Prime Minister set out his *Ten Point Plan for a Green Industrial Revolution*, laying the foundations for a green economic recovery from the impact of COVID-19, outlining how we will level up the country and put the UK at the forefront of the growing global green economy.

12. This strategy builds upon that approach: the package of policies will support up to 190,000 jobs by the middle of the 2020s and up to 440,000 jobs in 2030. These jobs will contribute to our wider ambition of 2 million green jobs by 2030, which also factor in employment that contributes to other environmental goals. Updated analysis suggests that around 56,000 green jobs have been secured or created across the UK economy, with some being already online and others in the pipeline over the next decade.

13. There will be opportunities for each region of the UK. For example, we are supporting new investment in hydrogen and CCUS into industrial clusters across the UK. We are also driving the electrification of vehicles impacting manufacturing and supply chains in Wales, the Midlands and North East England, developing Gigafactories in the UK, accelerating the roll out of charging infrastructure across the UK, and supporting roll-out of zero emission buses which would boost manufacturers in Scotland and Northern Ireland. We are also supporting the development of new offshore wind power off the coast of England, Scotland, and Wales; and already investing in nuclear power in the South East and West of England.

14. The impact of the transition to net zero on the UK's labour market could be significant: with one estimate suggesting up to 20% of the workforce could see demand for their skills affected, either positively or negatively.¹³ Furthermore, as set out by HM Treasury's *Net Zero Review*, although the net macroeconomic impact is likely to be small in 2050 relative to total growth over the period, impacts between and within regions over the next three decades can vary. Our approach will need to reflect that benefits and impacts of the transition will be dependent on individual household characteristics, such as their housing type and current vehicle usage, to support those low-income households most affected by individual technology transitions.

15. Our approach to supporting green jobs, attracting private investment, and tackling climate change will benefit the whole of the UK, including areas where a large proportion of people are currently employed in high-carbon sectors. However, while employment opportunities in green industries will emerge, high-carbon sectors will have to adapt or decline, resulting in a need to transition local labour markets to ensure people have the right skills to make the most of these opportunities.

16. Our sector deals, including on nuclear, offshore wind, automotive and the North Sea Transition Deal considered the skills needs and support for the labour market transition to net zero on a sectoral basis. The North Sea Transition Deal, for example, will support workers, businesses, and the supply chain throughout the transition by harnessing the sector's existing capabilities, infrastructure, and private investment potential to exploit new and emerging technologies such as hydrogen production, CCUS, offshore wind and decommissioning. Through the Deal, the sector, government, and unions will work together over the next decade and beyond to deliver the skills, innovation, and new infrastructure required to decarbonise North Sea production.

17. Our Automotive Transformation Fund and industrial clusters framework will help these industries, transition to a sustainable future. We are also taking action to enable local employers to set out their green skills needs, and support workers to gain the skills they need to access green jobs - such as through our Skills Bootcamps.

18. Supporting innovation will also help unlock jobs across low carbon sectors. For example, our portfolio of net zero innovation will provide at least £1.5 billion of government funding to help commercialise clean technologies and boost private investment across the UK.



Examples of clean growth investment across the UK

Scotland, Aberdeen

Scotland has a technology hub for offshore wind, including the first successful floating turbines in Aberdeen. The city is benefiting from funding for the Aberdeen Energy Transition Zone and the Global Underwater Hub, as well as the Net Zero Technology Transition Programme.

Scotland, Orkney

Hydrogen in an Integrated Maritime Energy Transition' project £1.6 million from the UK Government match-funding a £2.3 million project to develop hydrogen-based clean maritime solutions.

Wales

South Wales Industrial Cluster

Nearly £20 million to support the deployment of decarbonisation infrastructure will go to the South Wales Industrial Cluster which aims to create a net zero industrial zone from Pembrokeshire to the Welsh/English border by 2040.

Wales, Cwmbran

EPIC - Electric Powertrain Integration for heavy Commercial vehicles £31.8 million project (£15.8 million from the UK government) to develop lightweight electric powertrains for heavy goods to manage extreme levels of electrical power.

Northern Ireland, Belfast

Wrightbus zero-emission buses £11.2 million from the UK Government to develop hydrogen-fuel technology.

North West

Ellesmere Port plant

transforming to build electric vans £100 million from Stellantis to build electric vans, safeguarding 1,000 jobs.

North West, Greater Manchester

People Powered Retrofit

£1 million from the UK Government to support initial business development, leading to 1,150 homes retrofitted and 3,500 local contractors retrained over the next five years.

West Midlands

Public Sector Decarbonisation Scheme

£2 million from the UK Government to Windsor Academy Trust for heat decarbonisation and energy efficiency measures across seven schools.

South West & East of England

£84.6 million invested by government and industry in 3 ambitious aerospace R&D projects based in Bedford, Bristol and Cranfield to help the industry build back greener.

South West, Somerset

Hinkley Point C Nuclear Power Station

£3.5 billion already spent with companies in the South West and 12,786 jobs created so far, including 787 apprentices.

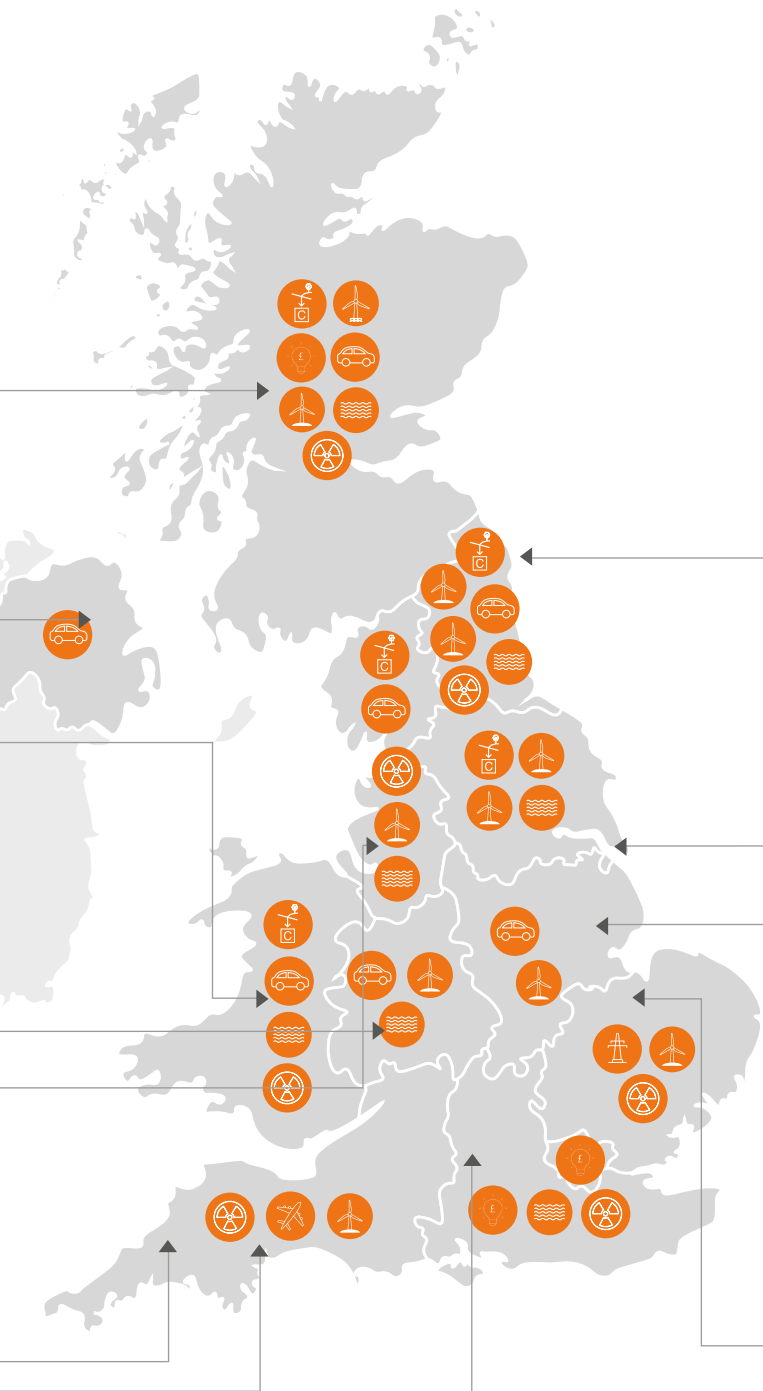
- Heat Pumps
- CCUS
- Offshore Wind
- Automotive
- Rail
- Waste and Circular Economy
- Climate Change Adaptation

- Heat Networks
- Retrofit
- Nuclear
- Aerospace
- Forestry
- Oil and Gas
- Science and Innovation

- Low Carbon Hydrogen
- Electricity Networks
- Green Finance
- Maritime
- Agriculture
- Steel

- Public Transport and Cycling
- Onshore Wind
- Solar
- Tidal
- Smart Systems
- Nature Conservation & Restoration

UK-wide



North East, Teesside

Whitetail Clean Energy

8 Rivers Capital and Sembcorp Energy UK's 300MW NET power plant, creating over 2000 construction and 200 operational jobs.

North East

Transforming automotive manufacturing

£1 billion announced by Nissan and Envision AESC to create an electric vehicle manufacturing hub supporting 6,200 jobs.

North East

Gateshead District Energy Scheme

£5.9 million of UK government funding for heat network project with mine water source heat pump connecting 5 buildings and up to 1,250 new homes to the Gateshead District Energy Scheme.

Yorkshire and the Humber

Able Marine Energy Park

Up to £75 million from the UK Government to facilitate a c.£500 million offshore wind manufacturing port hub, supporting up to 3,000 local jobs.

Yorkshire and the Humber

Siemens Gamesa offshore wind factory expansion

£186 million from Siemens Gamesa to expand their offshore wind turbine blade factory, creating and safeguarding up to 1,080 local jobs.

East Midlands

Tackling Climate Change on the River Rase

£200,000 from the UK Government for nature-based solutions in the River Rase catchment helping climate adaptation.

East of England

Advanced Greenhouses

£120million from Greencoat Capital backed by UK pension funds to build 2 greenhouses (covering 72 acres) warmed by heat pumps utilising warm waste water, creating 360 new green jobs and 120 seasonal jobs.

Midlands, Coventry

Coventry will be the first zero emission bus town awarded ten of millions to replace the entire local operator bus fleet with electric buses.

Case Study: North East of England

This region is leading the way in championing new technologies, whether it is electric vehicles (EVs), carbon capture, hydrogen, or renewables. Research undertaken for government indicates that the North East could gain an extra 27,000 jobs by 2050 arising from UK climate action.¹⁴ The research indicates that the gains to the region over time come to a large extent from specific investments needed for the UK to meet net zero, rather than baseline economic growth. In depth interviews with regional and industry stakeholders has also revealed a real and justified optimism about the region's potential to level up due to the Green Industrial Revolution and remain an attractive location for people to live and work.

The optimism is backed by significant investments in offshore wind and EV manufacturing. Spurred on by our 40 GW offshore wind deployment plans and £160 million investment in ports and manufacturing, we have seen almost £1.5 billion in investment in our offshore wind manufacturing capabilities. Recently announced projects include GE Renewable Energy's plans for a new blade factory in Teesside, South Korea's SeAH Wind, and GRI Renewable Industries' construction of factories in the Humber and Smulders (Newcastle), and the expansion of Siemens Gamesa's existing site in Hull.¹⁵ Combined these projects will support up to 3,600, direct green jobs.

Nissan and Envision AESC have reaffirmed their belief in the region and in Britain's plans to shift to EVs, through their £1 billion flagship investment to establish an Electric Vehicle Hub in Sunderland. The hub will bring together electric vehicles, renewable energy, and battery production. Nissan will invest up to £423 million to produce a new-generation all-electric vehicle in the UK. Envision AESC will invest £450 million to build the UK's first large-scale Gigafactory.



Leveraging private investment

19. We estimate that additional capital investment must grow from present levels to an average of £50-60 billion per year through the late 2020s and 2030s. Most of this investment will come from the private sector, providing new opportunities for businesses and investors. Over the same period, we could see additional resource savings of around £180 billion as a result of our reduced use of oil and natural gas.

20. The policies and spending brought forward in the Net Zero Strategy mean that since the *Ten Point Plan*, HMG has mobilised £26 billion of government capital investment for the green industrial revolution. Along with regulations, this will support up to 190,000 jobs in 2025, and up to 440,000 jobs in 2030, and leverage up to £90 billion of private investment by 2030.

21. Development of existing clean energy industries can give a sense of the scale of investment we will likely need to develop and grow new low carbon sectors. According to Wind Europe¹⁶, from 2010-20 the UK leveraged around £47 billion in our world leading offshore wind industry, almost half of all European investment in the sector. As existing strengths expand and newer strengths emerge, we will work with industry, investors,

and innovators to mobilise the private investment required to deliver net zero.

22. Government has an important role to play in ensuring a comprehensive financing offer, long-term investment signalling and fit-for-purpose business models coupled with investment from numerous private sources. We will work to create an attractive environment to secure the right investment in UK projects, with benefits to UK business and communities. By building on our strengths, including potential for rapid scale up across the domestic value chain, and coupling this with a strategic approach from government on policy and investment, we can create the right conditions to unlock the significant scale of private investment that will be needed.

23. Recent steps include establishing a new Office for Investment (OFI), which will support high value investment opportunities into the UK which align with key government priorities. The new UK Infrastructure Bank will provide leadership to the market in the development of new technologies, particularly in the scaling early-stage technologies that have moved through the R&D phase. With an initial £12 billion of investment the Bank will crowd in private investment to accelerate our progress to net zero whilst helping to level up across the UK. (See *Green Investment* chapter for more detail).

Creating wider benefits for society, the economy and the environment

24. Acting on climate change also brings the opportunity for wider benefits for our society individual wellbeing,¹⁷ economy, and environment from improving public health to protecting biodiversity. These include:

- ✓ Cleaner air and less noise pollution, by replacing fossil fuels with renewables for generating electricity and moving to electric vehicles.
- ✓ Better insulated homes will reduce energy consumption and lower bills, alongside health benefits.
- ✓ Opportunities to tackle mitigation and adaptation together, and bring wider benefits. For example, sustainable land management can reduce emissions from land, assist adaptation, improve food security, and protect wildlife.¹⁸

- ✓ Supporting biodiversity by planting woodlands and restoring peatlands.
- ✓ Physical and mental health benefits, and better connectivity to jobs, public services, and each other, by promoting more walking and cycling, and improving access to green spaces.

25. We know central government cannot and should not deliver these benefits by acting alone. We want to work in partnership with people and communities across the country. To do so, we will empower local leaders to kickstart their own net zero initiatives, taking responsibility for improving their areas and shaping their own futures.

UK framework for ending our domestic contribution to climate change

26. The UK has long been a global leader in tackling climate change. The 2008 Climate Change Act sets the legal framework for reducing emissions across the UK economy. In 2019, we became the first major economy to legislate to reach net zero by 2050.

27. On our pathway to net zero, the UK has interim targets called carbon budgets and Nationally Determined Contributions (NDCs). Carbon budgets restrict the total amount of greenhouse gases that the UK can emit over five-year periods, ensuring continued progress towards our long-term climate target. NDCs are commitments made by Parties to the Paris Agreement. They show how Parties intend to reduce their greenhouse gas emissions to meet the temperature goal of the Paris Agreement.

28. In 2020, we communicated to the UN Framework Convention on Climate Change (UNFCCC) our NDC pledge to reduce UK emissions by at least 68% by 2030 on 1990 levels.^{19,20}

29. In June 2021, the Government set in law the sixth carbon budget (CB6) limiting the volume of greenhouse gases emitted from 2033 to 2037. CB6 reduces emissions by approximately 78% by 2035 compared to 1990 levels. For the first time, this carbon budget formally incorporates the UK's share of international aviation and shipping emissions, enabling these emissions to be accounted for consistently with other emissions and demonstrating leadership in how we account for our emissions.²¹

30. This strategy sets out the action we will take to keep us on track for the UK's carbon budgets and 2030 NDC, and establishes our longer-term pathway towards net zero by 2050. The Net Zero Strategy will be submitted to the UNFCCC as our second Long-Term Low Greenhouse Gas Emission Development Strategy under the Paris Agreement.



Emission reduction targets in Scotland, Wales, and Northern Ireland

The UK Government's net zero target covers the whole of the UK. All parts of the UK have an integral role to play in delivering the UK-wide carbon budgets on the path to net zero by 2050. Each nation faces different challenges based on the share of its emissions from hard-to-treat sectors. For example, Northern Ireland has a higher proportion of its total emissions from agriculture (29%), compared to the UK overall (11%).²²

Scotland

The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, which amends the Climate Change (Scotland) Act 2009, sets targets to reduce Scotland's emissions of all greenhouse gases to net zero by 2045 at the latest, with interim targets for reductions of 75% by 2030 and 90% by 2040 and annual targets for other years. Scotland's net zero target is in line with the independent, expert advice of the Climate Change Committee.

The update to the Scottish Government's 2018-2032 Climate Change Plan sets out the pathway to its new and ambitious targets set by the Climate Change Act 2019. It is also a key strategic document for its green recovery from COVID-19.

Wales

In March 2021, the Senedd passed a suite of regulations to set a Net Zero Wales 2050 target, increase Wales decadal emissions targets, and set Wales Carbon Budgets 2 and 3 in line with them. Relative to the baseline established in legislation, the targets and budgets set in law are:

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

Welsh legislation requires Welsh Government Ministers to publish a plan for meeting each of its carbon budgets. *Net Zero Wales* will be published before COP26 and will set out the policies and proposals to meet Wales Carbon Budget 2 (2021-25) and set Wales on a longer-term pathway to net zero.

Northern Ireland

The current legislative framework for tackling climate change in Northern Ireland is the UK Climate Change Act 2008. Although this extends to Northern Ireland, it does not set a specific greenhouse gas emissions reduction target for Northern Ireland. It is implicit, and based on independent advice of the Climate Change Committee, that Northern Ireland contributes its fair share of required greenhouse gas emission reductions to meet the UK-wide net zero by 2050 target and the UK Government's 5-yearly carbon budgets set under the UK Climate Change Act. A Climate Change Act for Northern Ireland, whilst not yet introduced, is currently being progressed and remains a priority for delivery during the current Assembly mandate, by March 2022.

The Northern Ireland Executive is also currently developing a multi-decade Green Growth Strategy. This longer-term Strategy will be delivered through a series of Climate Action Plans, which will set out the actions to meet sector-specific greenhouse gas emission targets.



Leading the world to a greener, more sustainable future

31. The UK accounts for less than 1% of global emissions.²³ It is essential to enhance international collaboration with other countries and take urgent, concrete action globally to reduce emissions in the near-term. The 2020s is a critical decade in determining whether the Paris temperature goals can be kept within reach. The UK's role in international climate action is set out in the *International Climate Leadership and Collaboration* chapter.

32. The UK is leading the way in global climate action. Countries that are covered by a commitment to net zero or carbon neutrality now account for around 75% of global GHG emissions, and around 80% of global GDP. When the UK took the role of incoming COP Presidency in December 2019, coverage was less than 30% of world GDP. We have a unique opportunity to further this leadership through our G7 Presidency in 2021, and as the host and president of the COP26 summit, in partnership with Italy. The COP26 summit will bring together nearly 200 Parties to accelerate action towards the goals of the Paris Agreement and the UNFCCC, and our drive towards global net zero.

33. COP26 will be the forum to define the decisive decade of climate action and setting the path to global net zero emissions. The UK is urging all parties to demonstrate how they will reach net zero greenhouse gas emissions through near term 2030 NDC targets and Long-Term Strategies to 2050, protect people and nature from climate change impacts, fund climate action, and work together to deliver immediate steps to keep warming within 1.5°C. There will also be a renewed focus on accelerating near-term action in the top priority areas of coal phase out, zero-emission vehicles, climate finance, and halting deforestation.

34. The four goals for the UK's COP26 Presidency are:

- a. Mitigation: bring parties together to deliver commitments on mitigation.** All countries should come forward with ambitious 2030 climate plans (Nationally Determined Contributions, or NDCs) and long-term strategies to reach net zero greenhouse gas emissions, with the aim of keeping the goal of limiting global warming to 1.5°C in reach.
- b. Adaptation: establish a new consensus on protecting people and nature from climate change impacts.** All countries should come forward with ambitious adaptation plans and communications to help their societies and economies adapt to climate change.
- c. Finance:** To deliver on our first two goals, developed countries must deliver on their promise to mobilise at least \$100 billion in climate finance per year by 2020, and through to 2025, to help developing countries tackle and adapt to climate change. International financial institutions must play their part and we need work towards unleashing the trillions in private and public sector finance required to secure global net zero.
- d. Collaboration: bring countries together to reach an outcome accelerating climate action and finalising the Paris Rulebook.** Use the power of a fair and inclusive Presidency to enhance international collaboration among policy makers, investors, business, young people, indigenous peoples, and civil society. This can help to solve key challenges and accelerate the delivery of the Paris Agreement goals, particularly: adaptation and resilience, nature, clean energy and transport, and finance.

35. In delivering net zero, the UK also has the opportunity to be at the forefront of large, expanding global markets and capitalise on export opportunities in low carbon technologies and services. This includes renewables, CCUS, hydrogen, smart energy systems and storage, Greenhouse Gas Removals (GGRs), Advanced Modular Reactors (AMRs), and transport. By leading the world in the transition to a net zero future, the UK will be well placed to benefit economically by leading in the export of sustainable technologies and solutions.

36. As the world economy moves to meet the Paris commitments, with over 80% of world GDP now committed to net zero, the UK will set a clear direction and give businesses the certainty they need to invest, grow, and develop the technologies of the future. Some commentators estimate global investment in energy supply and infrastructure to reach \$92 trillion and \$173 trillion over the next thirty years. To achieve this level, the global economy will need to more than double annual investments from around \$1.7 trillion per year to between \$3.1 and \$5.8 trillion per year on average.²⁴

37. This strategy sets out our approach to reaching net zero emissions and securing the vast wider benefits as we transition to a greener, more sustainable future. We urge other countries to follow this example with ambitious commitments at COP26 and detailed plans to deliver on them.



Endnotes

- ¹ IPCC (2018), 'Global warming of 1.5°C', <https://www.ipcc.ch/sr15/download/>
- ² IPCC (2021), 'Sixth Assessment Report', <https://www.ipcc.ch/assessment-report/ar6/>
- ³ BEIS (2021), 'Climate change and net zero: public awareness and perceptions', <https://www.gov.uk/government/publications/climate-change-and-net-zero-public-awareness-and-perceptions>
- ⁴ OBR (2021), 'Fiscal Risk Report – July 2021', <https://obr.uk/frr/fiscal-risks-report-july-2021/>
- ⁵ IPCC (2021), 'Working Group 1 contribution to the Sixth Assessment Report', <https://www.ipcc.ch/report/ar6/wg1/#FullReport>
- ⁶ Note, emissions figures exclude IAS. UNFCCC, 'GHG emissions with LULUCF', https://di.unfccc.int/time_series
- ⁷ GDP, PPP (constant 2017 international \$), World Bank <https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD>
- ⁸ ONS (2021), 'Low Carbon and Renewable Energy Economy (LCREE) Survey direct and indirect estimates of employment, UK, 2014 to 2019', <https://www.ons.gov.uk/economy/environmentalaccounts/adhocs/13181lowcarbonandrenewableenergyeconomylcreesurveydirectandindirectestimatesofemploymentuk2014to2019>;
ONS (2021), 'Low carbon and renewable energy economy UK:2019', <https://www.ons.gov.uk/releases/lowcarbonandrenewableenergyeconomyuk2019>
- ⁹ Emissions data excludes IAS emissions. World Bank, <https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD> UNFCCC, BEIS Greenhouse Gas Inventory, 'Final UK greenhouse gas emission national statistics: 1990 to 2019', <https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2019>; National Inventory Submissions
- ¹⁰ BEIS (2019), 'Energy Innovation Needs Assessment', <https://www.gov.uk/government/publications/energy-innovation-needs-assessments>, 38
- ¹¹ The UK has a comparative advantage in a product or activity if it can produce it at a lower opportunity cost than its competitors. The principle implies that the UK should focus on production of those high-value goods, services and innovative activities where it is most competitive. It can then trade these for other goods and services where other countries have a comparative advantage over the UK. Consumers and producers in the UK and trading partners enjoy the efficiency gains from each country specialising and trading.
- ¹² ONS (2021), 'Low carbon and renewable energy economy, UK:2019', <https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2019>
- ¹³ LSE Grantham Institute (2021), Green economy: how the transition to net-zero could affect UK jobs across the country. <https://www.lse.ac.uk/granthaminstitute/news/green-economy-how-the-transition-to-net-zero-could-affect-uk-jobs-across-the-country/>
- ¹⁴ BEIS (2021) Net zero in the North East: Regional transition impacts, research commissioned for BEIS

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- ¹⁵ BEIS (2021), ‘Second wind for the Humber, Teesside and UK energy industry’, [Press release], <https://www.gov.uk/government/news/second-wind-for-the-humber-teesside-and-uk-energy-industry>
- ¹⁶ Wind Europe (2021), ‘Offshore Wind in Europe, Key Trends and Statistics 2020’, exchange rate based on monthly average between Jan 2011 and Dec 2020, <https://windeurope.org/intelligence-platform/product/offshore-wind-in-europe-key-trends-and-statistics-2020/>
- ¹⁷ HM Treasury (2021), ‘Green Book supplementary guidance: wellbeing’, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005388/Wellbeing_guidance_for_appraisal_-_supplementary_Green_Book_guidance.pdf
- ¹⁸ IPCC (2021), ‘Working Group 1 contribution to the Sixth Assessment Report’, <https://www.ipcc.ch/report/ar6/wg1/#FullReport>
- ¹⁹ BEIS (2020), ‘The UK’s Nationally Determined Contribution under the Paris Agreement’, <https://www.gov.uk/government/publications/the-uks-nationally-determined-contribution-communication-to-the-unfccc>
- ²⁰ The UK NDC is based on territorial emissions – greenhouse gases emitted from sources within the UK – so does not include emissions from international aviation and shipping. This is in line with international reporting requirements, international expectations, and advice from the Climate Change Committee.
- ²¹ CCC (2020), ‘Sixth Carbon Budget’, <https://www.theccc.org.uk/publication/sixth-carbon-budget/>
- ²² BEIS analysis (2021), Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland: 1990-2019 using AR5 with climate feedback Global Warming Potentials https://uk-air.defra.gov.uk/reports/cat09/2106240841_DA_GHGI_1990-2019_Final_Issue1.2.xlsx
- ²³ PBL (2020), Trends in Global CO₂ and Total Greenhouse Gas Emissions; 2020 Report, <https://www.pbl.nl/en/publications/trends-in-global-co2-and-total-greenhouse-gas-emissions-2020-report>
- ²⁴ BloombergNEF (2021), ‘New Energy Outlook 2021’, <https://about.bnef.com/new-energy-outlook/>