

Written evidence submitted jointly by the Secretary of State for Wales and the Minister for Business, Energy and Clean Growth (REW0044)

Contents

1. How can the UK Government best support the deployment of renewable generators in Wales?	3
1. Context	3
2. Electricity	3
a. Introduction	4
b. Contracts for Difference	4
c. Network infrastructure	5
d. Flexibility and Storage	6
e. Planning	6
f. Seabed leasing	7
3. Heat	7
a. Introduction	8
b. Support schemes	8
c. Hydrogen	8
2. How should the UK and Welsh Governments work together to support the development of renewable energy projects in Wales?	9
1. Devolution context	9
2. Inter-governmental working	9
3. What mechanisms can ensure that subsidies for renewable generators are good value for money?	11
4. What opportunities are there for renewable generators in Wales of greater interconnection with other electricity markets?	13
1. Context	13
2. Policy	14
5. How can the UK Government facilitate Welsh contributions to COP26?	15
1. Background.....	15
2. Inter-governmental and stakeholder activity	16
6. What implications is COP26 expected to have for Wales?	17
7. Has the COP26 Year of Climate Action had any significant implications for Wales?	18
8. What opportunities are there for renewable energy to aid Wales post-COVID-19 economic recovery?	19
1. Advancing Offshore Wind	20
2. Driving the Growth of Low Carbon Hydrogen	20
3. Delivering New and Advanced Nuclear Power	21
a. Small Modular Reactors.....	21
b. Fusion	21
c. Gigawatt-scale nuclear power.....	22
d. Wylfa Newydd	22
e. Hinkley Point C and Wales	22
4. Accelerating the Shift to Zero Emission Vehicles	23
5. Greener Buildings	24
6. Investing in Carbon Capture Utilisation and Storage / Industrial Decarbonisation	24
7. Innovation and finance.....	25
8. Jet Zero and Green Ships.....	25
9. Other	26

Tables

Table 1	Renewable energy generation capacity in Wales (MW)	3
Table 2	Welsh Contracts for Difference projects	4

1. How can the UK Government best support the deployment of renewable generators in Wales?

1. Context

In 1990, electricity generation accounted for 25 per cent of UK emissions. In 2018, it was only 15 per cent¹. 30 years ago, fossil fuels provided nearly 80 per cent of electricity supply². Today, the UK gets over half of its power from low-carbon technologies³.

The rapid growth of renewables has been a critical feature of the decarbonisation of the power sector. In Wales, renewable generation capacity has grown from 789 megawatts (MW) in 2010 to 3,540MW in 2019, an increase of 449%. 7.5% of the UK's current renewable energy generation capacity is in Wales, compared to 63.3% in England, 25.2% in Scotland and 4% in Northern Ireland. The breakdown of renewable energy generation capacity in Wales by technology is shown in Table 1.

Wind	2,002
Solar PV	1,091
Hydro	169
Landfill gas	47
Sewage sludge digestion	13
Other biomass	217
Total	3,540

2. Electricity

a. Introduction

A range of measures, such as the Feed-in Tariff scheme (FiTs), Renewable Obligation (RO) and Contracts for Difference (CfDs), have helped the expansion of renewable energy projects across the country, including in Wales. However, the balance of policy tools that will be required to further expand renewable energy generation capacity between now and 2050 to meet the UK's net-zero target will need to be adapted.

The UK Government envisages that a number of shifts will take place in the structure and makeup of the energy system of Great Britain. The electricity network is now becoming more decentralised. We are likely to see pervasive digitalisation and an increase in the installed capacity of electricity storage, to accompany a generation mix that will be composed predominantly of renewables. We are likely to see decentralised and interconnected energy markets, in contrast to today's centralised and national market. Smart technologies will revolutionise how consumers engage

¹ BEIS analysis of BEIS (2020), Final UK greenhouse gas emissions national statistics ([link](#))

² BEIS (2020), DUKES, table 5.1.3 ([link](#))

³ BEIS (2020), Energy Trends, table 5.1 ([link](#))

⁴ BEIS (2020), Energy Trends, table 6.1 ([link](#))

with the market, playing a more involved role in managing their bills and even selling surplus power back to the grid.

In this context, the UK Government is pursuing a number of strategic policy initiatives and reforms to enable the continued deployment of a mix of renewable technologies in the years ahead.

b. Contracts for Difference

The Contracts for Difference (CfD) price stability scheme has played an important role in attracting investment in and enabling the deployment of renewable projects by providing certainty over returns to developers. GB-wide, the CfD scheme has, at the time of writing, delivered over 58,000 gigawatt (GW) hours of low-carbon electricity and secured £22.8bn worth of investment in projects to date⁵.

Not all renewables require or seek a CfD to be commercially viable and it is a commercial decision for developers whether to bid into the CfD auction. The Welsh projects that have benefited from a CfD to date are listed in Table 2. The 576MW Gwynt y Môr installation off the coast of North Wales is not included in the table because it was supported under the Renewables Obligation.

Project name	Technology (installed capacity)	Current strike price (£/MWh)⁷	Start date
Clocaenog Forest Wind Farm	Onshore wind (96MW)	94.46	31.10.2019
Brenig Wind Farm	Onshore wind (45MW)	90.72	29.03.2019
Enviroparks Hirwaun Generation Site	ACT (11MW)	N/A	Terminated
Mynydd Y Gwair Wind Farm	Onshore wind (40MW)	91.59	20.03.2019
Station Yard CfD 1	ACT (0.5MW)	N/A	Terminated

The UK Government will continue to hold regular CfD auction rounds every two years. The next auction in late 2021 will be open to onshore wind, solar photovoltaics and other established technologies, as well as fixed-bottom and floating offshore wind. Subject to sufficient projects coming through the planning pipeline to maintain competitive tension, the UK Government has an ambition to secure up to double the capacity awarded in the last round, aiming to deploy around 12GW of low-cost renewable generation – as announced in the Prime Minister 10 Point Plan.

c. Network infrastructure

The regulation of the transmission and distribution networks is a matter for Ofgem, the GB energy-sector regulator. Ofgem is setup as an independent regulator in statute (primarily the Utilities Act 2000, Gas Act 1986 and Electricity Act 1989) and is designated as a Non-Ministerial Department under Cabinet Office guidelines.

On 8 December 2020, Ofgem published the RIIO-2 final determinations settlement for transmission-level and gas network operators for the period 2021-2026, which

⁵ Low Carbon Contracts Company (2020) ([link](#))

⁶ Low Carbon Contracts Company (2020) CfD map ([link](#))

⁷ Current strike prices are indexed.

has granted £30bn in baseline funding for upfront network investment alongside the potential for £10bn additional network funding⁸.

This investment, which encompasses Wales, will help to ensure that there is sufficient network infrastructure in place in the coming years to facilitate the net-zero transition, enabling future renewable energy projects.

RIO-ED2, the electricity distribution price control, will run between 2023 and 2028. It is at an earlier stage of development than RIO-2 for transmission and gas networks, having published its Sector Specific Methodology Decision in December⁹. In this Decision, Ofgem set out its expectation for distribution network companies to invest strategically to support achieving net-zero by 2050, including for networks to link to new renewable generation.

As part of a series of electricity network charging reforms, Ofgem has been progressing a Significant Code Review to reform network access and forward-looking charges (the Access Review). Ofgem's objective for the Access Review is to ensure electricity networks are used efficiently and flexibly, reflecting users' needs and allowing consumers to benefit from new technologies and services while avoiding unnecessary costs on energy bills. Part of this reform includes consideration of the level of upfront charge paid for connecting to the distribution network, as well as allocation of ongoing use of system charges. Government officials are working closely with Ofgem to understand the ramifications of its proposed reforms, including for renewable generation across Great Britain. Ofgem expects to publish its 'minded-to' decision for consultation later this year.

The UK Government recognises that the further transformation of the energy system will require growing investment in physical network infrastructure. When Parliamentary time allows, legislation will be introduced to enable competitive tendering in the building, ownership and operation of the onshore electricity network. Introducing competition to electricity networks has the potential to reduce network costs, as we saw with the efficiencies achieved through the tendering of offshore network infrastructure, enabling savings of up to £1bn on projects tendered over the next ten years.

In addition, the Offshore Transmission Network Review will consider a range of potential approaches to ensure that the transmission connections for offshore wind generation are delivered in the most appropriate way, considering the contribution offshore wind is expected to make towards net-zero by 2050. The review will focus on exploring ways to better coordinate the deployment of offshore network assets. A more coordinated approach has the potential to deliver considerable consumer savings and significantly reduce the environmental and social impacts of offshore projects, including for coastal communities. At the same time, the review will also have to assess whether some offshore projects are already too far in their development process to implement changes to their planned connection without major commercial and delivery risks. The review brings together all the stakeholders involved in the timing, siting, design, and connection of offshore generation including relevant devolved administrations. Representatives of the Welsh Government are on the project board and working group for the review.

⁸ Ofgem (2020) Energy network price controls OVERVIEW OF FINAL DETERMINATIONS 2021-2026 ([link](#))

⁹ Ofgem (2020) ([link](#))

d. Flexibility and Storage

The UK Government and Ofgem's 2017 Smart Systems and Flexibility Plan set out a range of actions to facilitate the deployment of storage of at all scales by removing regulatory barriers, reforming markets and investing in innovation. The Energy White Paper, published in December 2020, announced that the UK Government will publish a new Smart Systems Plan in partnership with Ofgem in spring 2021. This will outline the next steps that will be taken to address barriers to smart and flexible technologies.

Furthermore, the UK Government recently passed legislation to make it simpler for large scale storage facilities to seek planning permission. In 2019, the Government published a second consultation on the treatment of electricity storage facilities with respect to the national planning threshold, proposing to carve out storage (except pumped hydro) from the national planning regime in England and Wales. Following consideration of evidence from stakeholders which showed that the 50MW threshold for the national planning regime was distorting sizing and investment decisions, storage has now been removed from the NSIP regime.

e. Planning

The Offshore Wind Evidence and Change Programme¹⁰, a joint-initiative between the Department for Business, Energy and Industrial Strategy (BEIS), Department for Environment, Food and Rural Affairs (DEFRA) and The Crown Estate, aims to better understand and overcome the cumulative environmental impacts of offshore wind, and its effects on users of the sea and onshore communities. The Welsh Government and Natural Resources Wales sit on the steering group for the programme.

As announced in the Energy White Paper, the UK Government will complete a review of the existing energy National Policy Statements (NPSs), which also apply to Wales. NPSs establish the need for new energy infrastructure and set out the framework for the consideration of applications for development consent. The review will look to ensure that the suite of NPSs support the policies set out in the Energy White Paper so that we can continue to have a planning policy framework which can deliver the investment required to build the infrastructure needed for the transition to net-zero.

f. Seabed leasing

The management of the seabed off the coastlines of England and Wales, including leasing, is the responsibility of The Crown Estate (TCE), which is independent of the UK Government. Created by an Act of Parliament, it is a statutory corporation that operates on a commercial basis.

¹⁰ The Crown Estate (2020) ([link](#))

TCE has played an important role to date in expanding offshore renewable energy capacity in Welsh waters. It is, effectively, the landlord of the seabed and is responsible for balancing a range of maritime and stakeholder interests when exercising its duties.

Offshore projects have different routes to apply for a seabed lease from TCE. First, developers may apply as part of a 'leasing round'. Three rounds have concluded thus far and a fourth is currently underway¹¹. On 8 February, TCE announced that 6 additional projects will progress to the next stage of the leasing round application process, one of which is a proposed 1.5GW offshore windfarm off the coast of North Wales led by a consortium of EnBW and BP¹².

Second, developers may apply for an extension to an existing lease. For example, the proposed Awel y Môr Offshore Wind Farm¹³, which would be an extension to the aforementioned Gwynt y Môr project, has secured seabed rights but is currently in the process of applying for planning consent.

Third, developers may seek a seabed lease as part of TCE's 'innovation and demonstration' application facility. Some Members of Parliament have raised concerns about this process and whether it is sufficiently ambitious and timely to meet the scale of interest in offshore energy projects, particularly in the Celtic Sea area. The Office of the Secretary of State for Wales welcomed the announcement on 1 December from TCE stating its intention to consult stakeholders and the market on the level of near-term demand for floating offshore wind projects. As part of the review, TCE will consider how leases could be made available in a way that accelerates the deployment of floating offshore wind projects¹⁴.

3. Heat

a. Introduction

Competency over renewable heat policy in Wales is shared between the UK and Welsh Governments. The production, distribution and supply of heating and cooling and the regulation of heat and cooling networks are reserved to the UK Government. Other aspects of heat and cooling networks and the ability to implement schemes to incentivise heat and cooling projects are devolved to the Welsh Government.

b. Support schemes

In August last year, the UK Government awarded £8m as part of the Heat Networks Investment Project to support the development of local heat networks in Cardiff (£6.3m) and Bridgend (£1.2m). Heat networks are one of the most cost-effective ways of reducing carbon emissions from heating, and their efficiency and carbon-saving potential increases as they grow and connect to each other.

¹¹ The Crown Estate (2020) ([link](#))

¹² The Crown Estate (2021) ([link](#))

¹³ RWE (2020) ([link](#))

¹⁴ The Crown Estate (2020) ([link](#))

Further work is underway to support the continued decarbonisation of buildings through the deployment of renewable heat. Last year, the UK Government consulted on proposals for a Green Gas Support Scheme. The aim of the Scheme would be to increase the proportion of green gas in the grid. The consultation also sought views on the introduction of a GB-wide Clean Heat Grant, which would provide capital grants for heat pumps and in certain circumstances for biomass generation.

The UK Government will publish a dedicated Heat and Buildings Strategy in early 2021 which will set out its plans to achieve further decarbonisation in the buildings sector, including the suite of policy levers that will be used to encourage consumers and businesses to make the transition to clean heat and improve the energy efficiency of buildings.

c. Hydrogen

Hydrogen could offer consumers a future heating option which works in a very similar way to natural gas today, but without the associated carbon emissions. However, unlike electric heat pumps and heat networks, the feasibility of using hydrogen for clean heat needs further testing and development. The practicalities and cost of safely converting or replacing existing networks and appliances to operate with pure hydrogen need to be fully evaluated.

The Energy White Paper and Prime Minister's Ten Point Plan announced a range of initiatives aimed at further exploring the potential role of hydrogen as a source of clean heat for buildings and domestic settings. Funding will be available for testing and trialling projects, working with the industry to ensure that the overall programme of work is comprehensive and fully coordinated. A number of community trials will commence over the coming decade, with the aim of piloting a hydrogen neighbourhood by 2023, a large hydrogen village by 2025 and potentially a hydrogen town by the end of the decade. This activity will help to inform a decision around the mid-2020s over the potential long-term role of hydrogen as a domestic heat source. Welsh communities are, in theory, within the scope of the trials, though there are no known proposals to conduct any in Wales at present.

In addition, the UK Government will assess the case for encouraging, or requiring, new gas boilers to be readily convertible to hydrogen, so-called 'hydrogen-ready' boilers, in preparation for any future conversion of the gas network. To facilitate the transition and development of the gas network, the UK Government will continue to work with the Health and Safety Executive to enable up to 20 per cent hydrogen blending on the network by 2023, subject to the success of testing and trials. As the regulation of energy conservation and the gas network are largely reserved policy areas, it is likely that any such measures would apply to Wales, as part of the collective effort to decarbonise Great Britain.

2. How should the UK and Welsh Governments work together to support the development of renewable energy projects in Wales?

1. Devolution context

Energy policy in Wales is underpinned by a wide range of ‘secondary’ policy inputs – financing, planning, network infrastructure and innovation, for example – which span the competencies of both the UK and Welsh Governments. Matters reserved to the UK Parliament are listed in Schedule 7A to the Government of Wales Act 2006.

2. Inter-governmental working

Recognising the broad division of roles and powers between the two governments in Wales, the UK Government is committed to working closely with the Welsh Government at all levels to achieve both governments’ shared goals. There is much to be gained from working together and sharing learning where possible for the benefit of the people of and businesses in Wales, as climate change does not respect territorial borders.

Though there have been and will be differences in opinion over some individual questions of policy, the UK Government highly values its relationship with the Welsh Government and welcomes the insight, experience and knowledge it brings to inter-governmental discussions with respect to energy, and wider, policy.

Indeed, on a number of occasions, the Welsh Government has opted-in to collaborate with the UK Government on schemes that would otherwise be devolved, such as the Industrial Energy Transformation Fund.

A number of fora and channels of communication exist to facilitate an on-going dialogue between the two governments, some of which are inter-governmental in nature and therefore include representatives from the Scottish Government and Northern Ireland Executive.

- The Net-Zero Inter-Ministerial Group is chaired by the Minister for Business, Energy and Clean Growth. It brings together UK Government Ministers and Ministers from the Devolved Administrations to discuss matters pertaining to the net-zero transition. It is scheduled to meet every two months.
- A range of official-level working groups exist to facilitate a dialogue between the UK and Welsh Governments with respect to specific policy areas, such as industrial decarbonisation and offshore network infrastructure, for example.

- In the National Infrastructure Strategy, the UK Government set out that it agrees with the National Infrastructure Commission's proposals for regulators to ensure that devolved administrations (and local authorities and metro mayors in England) have sufficient opportunity to contribute to consultations as part of the price control process. Ofgem has previously recognised and signalled the need to work with Devolved Administrations at the earliest stages to inform decisions to be taken to reach net-zero by 2050 (See Ofgem Strategic Narrative 2019-2023).
- The Office of the Secretary of State for Wales works with other UK Government departments to ensure that the devolution implications of policy are considered as part of the policy development process.
- The Welsh Government is always entitled to contribute to formal UK Government consultations when views are sought on policy proposals. The Office of the Secretary of State for Wales stands ready to facilitate one-to-one conversations between the Welsh Government and the respective UK Government department as required.
- Welsh and UK Government Ministers regularly exchange written correspondence on a range of matters pertaining to energy, and wider, policy.
- A wide range of channels of communication and working relationships exist between Wales Office, Welsh Government and BEIS officials across a range of policy areas.

3. What mechanisms can ensure that subsidies for renewable generators are good value for money?

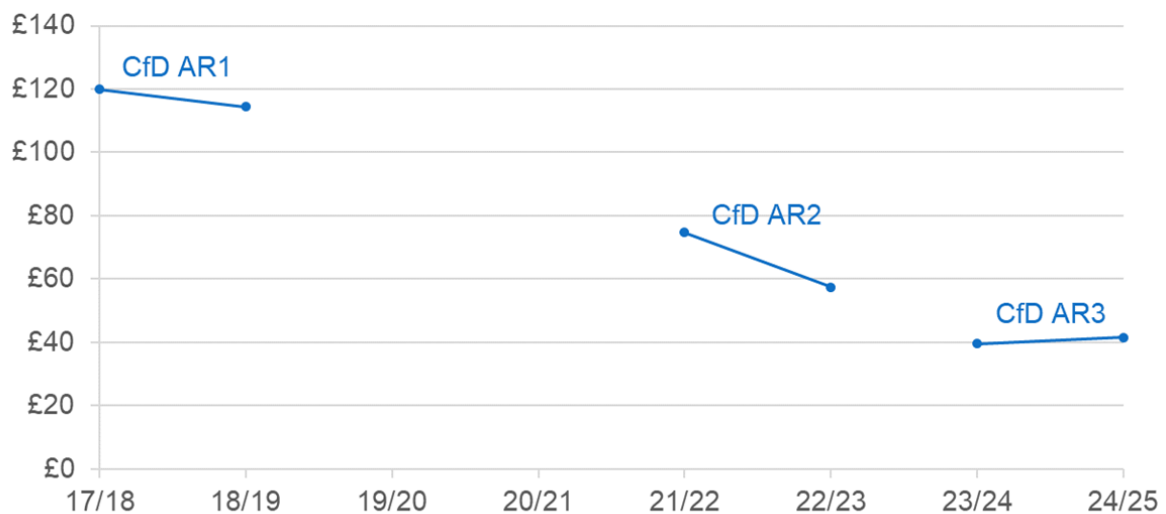
Achieving value for money while balancing other important policy considerations, such as security of power supply, is an overarching objective of the UK Government’s energy policy.

The Contracts for Difference (CfD) price stability scheme incentivises investment in renewable energy by protecting project developers from volatile wholesale prices, while protecting consumers from paying increased support costs when electricity prices are high. It has played a crucial role in reducing the investment costs associated with large-scale energy infrastructure projects, which benefits energy suppliers and their customers.

On 20 September 2019, the UK Government published the results of the third CfD allocation round¹⁵, which saw contracts awarded to 5.8 gigawatts (GW) of new renewable energy projects at clearing prices well below those anticipated. This saw the costs of offshore wind fall by around 30% from the previous allocation round in 2017, as demonstrated in the graph below.

Offshore Wind auction clearing prices by delivery year

2012 £/MWh



On the CfD scheme, the Energy Systems Catapult commented: “The CfD scheme has been extremely successful in achieving its objectives. Strike prices have come down over successive allocation rounds with, for example, the strike price for offshore wind reducing by some two thirds over just the last five years. Projects are delivering generation within their Targeted Commissioning Windows. CfDs have enabled low carbon generation to be delivered at scale cost effectively¹⁶.”

¹⁵ Department for Business, Energy and Industrial Strategy (2019) ([link](#))

¹⁶ Energy Systems Catapult (2020) ([link](#))

The UK Government is also pursuing a range of supply-side interventions to bring down the cost of early-stage renewable energy technologies through innovation funds such as the Net-Zero Innovation Portfolio, Clean Growth Fund and a series of other technology-specific funds. More information on these measures is provided in answer to question 8.

4. What opportunities are there for renewable generators in Wales of greater interconnection with other electricity markets?

1. Context

Electricity interconnectors are cables that allow for the transmission and trade of electricity between different markets. Interconnection widens the market for generators and enhances security of supply by diversifying the sources of supply.

Interconnection has been shown to have clear benefits for decarbonisation. Analysis published alongside the Energy White Paper illustrated that an increased level of interconnection could result in considerable reduction in emissions in both the UK and the European Union to 2050¹⁷. This is because interconnection supports the integration of intermittent renewables by enhancing the flexibility of energy systems, allowing excess renewable energy to be exported rather than curtailed. This is of particular relevance between Great Britain and Ireland, due to both energy systems' rapidly growing contribution from wind energy.

6 gigawatts (GW) of interconnector capacity is currently installed in GB, including a 2GW and a 1GW connection to France, 1GW to the Netherlands, 1GW to Belgium, 500MW to Northern Ireland and 500MW to Ireland. There is a further 11.9GW in the pipeline, with 3.8GW currently under construction in the form of new interconnectors to Norway, Denmark and France.

Ofgem has granted 'cap and floor' regimes in principle to nine projects with a combined capacity of 10.9GW, including the operational 1 GW interconnectors to France and Belgium. This regime, which underwrites a certain level of risk for interconnector projects, has proven successful in encouraging investment in interconnection.¹⁸

Wales is currently connected to Ireland by EirGrid Group's 500MW East West Interconnector (EWIC). Greenlink is a proposed 200km interconnector between Pembroke and County Wexford; the project is currently in the final stages of obtaining necessary planning permission and consents.

2. Policy

In the Energy White Paper, published in December 2020, BEIS committed to work with Ofgem, developers and European neighbours to realise at least 18GW of interconnector capacity by 2030. This represents more than a three-fold increase from current levels and will position the UK as a potential net-exporter of excess green energy, helping to keep wind turbines generating even when GB electricity demand has been met.

¹⁷ BEIS (2020) ([link](#))

¹⁸ Ofgem (2020) ([link](#))

The ongoing Offshore Transmission Network Review (OTNR) is considering the potential role of multi-purpose interconnectors in facilitating the UK's offshore wind ambitions. These hybrid projects can combine the transmission links we need to connect offshore wind to our grid with interconnectors to neighbouring markets. Compared to an uncoordinated solution, these projects offer advantages in terms of reduced capital expenditure and coastal landing points, as well as more efficient utilisation of offshore wind resources.

Ofgem is currently reviewing its 'cap and floor' regulatory regime, including considering the wider benefits of interconnection (such as flexibility and decarbonisation) and the potential for multi-purpose projects. Ofgem published an open letter to developers last August calling for views on this review¹⁹.

¹⁹ Ofgem (2020) ([link](#))

5. How can the UK Government facilitate Welsh contributions to COP26?

1. Background

The 26th UN Climate Change Conference of the Parties (COP26) will be held in Glasgow 1-12 November 2021. The summit will bring together heads of state, climate experts and campaigners to agree coordinated action to tackle climate change. 197 country-level parties to the United Nations Framework Convention on Climate Change, in addition to climate experts, businesses and campaigners, will take part in COP26.

The UK Government's role over and above organising logistics is to work with country participants at the diplomatic level to ensure the parties make an ambitious series of commitments to act on climate change mitigation and adaptation. The COP26 President Designate, the Rt Hon Alok Sharma MP, is leading this work.

The UK Government's ambition for COP26 is for all countries to come forward with ambitious 2030 climate plans and long-term strategies to reach zero carbon emissions and to step up and help societies and economies adapt to climate change, particularly the most vulnerable. We are also bringing governments, business and civil society together to accelerate progress in five key areas: adaptation and resilience; finance; nature; zero emission vehicles and energy transition.

2. Inter-governmental and stakeholder activity

The UK Government is committed to COP26 delivering for all of the UK and is already engaging with the Welsh Government at both official and Ministerial levels, to ensure an inclusive and ambitious summit for the whole of the UK.

A number of engagement activities have been and continue to be pursued to facilitate the contribution of people, businesses and civil society groups in Wales and the Welsh Government.

- A COP26-dedicated Ministerial Group, which includes representation from the UK, Welsh and Scottish Governments and Northern Ireland Executive, met for the first time on 6 November 2020 and discussed the UK Presidency Objectives for COP26 and public and stakeholder engagement on COP26. The Group will meet quarterly in the run up to COP26 and is a forum for Ministers to engage and collaborate on COP26, in support of the delivery of an inclusive and welcoming COP26 representative of the whole of the UK.
- In August, COP26 President Designate Alok Sharma visited stakeholders in Wales to discuss COP26 and the importance of tackling climate change.
- Nigel Topping, the UK High Level Champion, had a roundtable discussion on the Race to Zero and agriculture with Welsh agricultural stakeholders on 22 July 2020.

- The UK High Level Champion spoke at the Welsh Government-organised Climate Week alongside a range of speakers from Wales, including the First Minister of Wales and a number of representatives from industry and civil society.
- We are inviting businesses from every corner of the UK to take part in the Race to Zero²⁰, a global initiative, backed by science-based targets, to commit businesses, cities, regions, investors and universities to achieve net zero emissions by 2050 at the very latest.
- The Together for Our Planet campaign will engage the UK public in climate action in the run up to COP26.
- We have already established the Creative Earth art competition in collaboration with WWF. It is open for people aged 16 and under from across the UK and offers children the opportunity to have their artwork displayed at COP26 and show the rest of the world their vision for the future.
- In December, the UK Government COP26 Unit held briefing sessions for stakeholders from across the UK to present information on the opportunities available to stakeholders across the Summit within UK Government managed spaces.
- The COP26 Unit has organised a number of climate roundtables to mobilise all of society to engage with COP26 and take ambitious climate action ahead of the summit.
- The COP26 President Designate Alok Sharma chairs the COP26 Mayors and Regions Advisory Council to engage cities and regions in the run up to COP. The membership includes the Leader of Cardiff City Council.

²⁰ <https://racetozero.unfccc.int/>

6. What implications is COP26 expected to have for Wales?

Climate change does not recognise territorial borders. The summit aims to generate international momentum to take concerted action to bring down global emissions, and therefore has the potential to deliver benefits to citizens and communities right across the globe.

The campaigns highlighted in answer to question 5 are an opportunity to raise awareness of the need to take action on climate change right across society through highlighting the roles that each of us can play in the transition to net-zero.

Taking collective action has the potential to deliver a wide range of sustainability benefits – cleaner air, lower levels of pollution and a strengthened ecosystem – to Wales and beyond.

The summit itself is an opportunity to showcase the breadth of interest in taking action on climate change in all corners of the UK. Organisations in Wales have a route to apply for opportunities within the UK Government managed spaces at COP26. All interested parties are encouraged to apply²¹.

²¹ <https://www.gov.uk/government/topical-events/cop26>

7. Has the COP26 Year of Climate Action had any significant implications for Wales?

The Year of Climate Action campaign was launched earlier in 2020 but was paused due to COVID-19. The campaign was re-launched in November 2020 and re-branded as the “Together for our Planet” campaign. The aim of the campaign is to engage the whole of the UK in the conversation around climate change in the run-up to COP26 in November 2021.

As part of the campaign, the UK Government will be partnering with a diverse range of cultural, sporting, youth and local organisations and businesses to make sure we represent the best of this country’s efforts to tackle climate change.

8. What opportunities are there for renewable energy to aid Wales post-COVID-19 economic recovery?

As we rebuild the economy after the coronavirus, we must build back better, greener, and faster. This means supporting green jobs, levelling up and accelerating the UK's path to net zero.

Spanning clean energy, buildings, transport, nature and innovative technologies, the Prime Minister's Ten Point Plan²², published in November last year, will mobilise £12 billion of UK Government investment to unlock three times as much private sector investment by 2030, which will support up to 250,000 highly-skilled green jobs.

The Ten Point Plan will position the UK to be able to take advantage of export opportunities in new, global emerging markets in low carbon technologies and services, providing jobs, supporting levelling-up and reinvigorating our industrial heartlands, including in Wales.

It is presently too early to put figures on the number of jobs and amount of potential investment that could be delivered in Wales, as the figures quoted above represent aggregate activity across the UK and because decisions over how funding will be allocated are yet to be taken.

Within the overall investment and policy framework provided by the Ten Point Plan, supported by the Energy White Paper and National Infrastructure Strategy, Wales has a range of opportunities to cultivate new specialisms in net-zero sectors and deliver new jobs at scale.

1. Advancing Offshore Wind

The UK Government has an ambition to reach 40GW of offshore wind capacity by 2030, including 1GW of floating offshore wind. To help to deliver against both targets, the UK Government will continue to hold regular Contracts for Difference auction rounds every two years. The next auction in late 2021 will be open to a number of technologies including fixed-bottom and floating offshore wind.

Wales is already making a contribution to the UK Government's 'fixed-bottom' offshore wind target, with, for example, the 576MW Gwynt y Môr project off the coast of North Wales and the proposed Awel y Môr extension which could potentially add in excess of 500MW generation capacity to the installation.

Floating offshore wind has strong deployment potential in Welsh waters, particularly in the Celtic Sea off the coast of South West Wales and England where wind speeds are high and deep seas are accessible from major strategic ports. Developers such as Blue Gem Wind, a joint-venture between Total and Simply Blue Energy, are already coming forward with initial pilot projects that have the potential to position Wales as one of the leading nations worldwide for early floating offshore wind deployment.

²² BEIS and the Prime Minister's Office (2020) ([link](#))

In a report commissioned by the Welsh Government, the Offshore Renewable Energy Catapult sets out the potential benefits to jobs in South West Wales and the south west of England arising from floating offshore wind manufacturing, which could be as high as 3,000 for the first 500MW of deployment²³ subject to commercial supply chain decisions.

2. Driving the Growth of Low Carbon Hydrogen

The UK Government aims to work with industry to bring forward 5GW of low carbon hydrogen production capacity by 2030. As we progress towards this ambition, we would hope to see around 1GW of hydrogen production capacity by 2025. These targets will be supported by the £240m Net Zero Hydrogen Fund confirmed out to 2025, intended to support both CCUS enabled (blue) hydrogen and electrolytic (green) hydrogen production. Details of how projects will be able to bid into the Net-Zero Hydrogen Fund will be communicated in due course.

In the first half of this year, the UK Government will publish a Hydrogen Strategy which will set out an action plan for decarbonisation and expansion of hydrogen in the 2020s across the UK.

There are already promising signs of interest and innovation around hydrogen production and utilisation in Wales, which the UK Government is backing. For example, the Riversimple Clean Mobility Fleet was awarded £1.2m from the UK Government's Hydrogen Transport Programme to develop fuel cell electric vehicles.

The Milford Haven Energy Kingdom has received a £1m grant from UK Research and Innovation to develop diverse, local seed markets to support the transition to hydrogen and renewables along the Milford Haven Waterway.

The South Wales Industrial Cluster has received funding from the UK Government's Industrial Decarbonisation Challenge to explore options to transition the region's industries to net-zero, including by considering the role of low-carbon hydrogen.

3. Delivering New and Advanced Nuclear Power

The Energy White Paper makes clear that nuclear power continues to be an important and proven source of reliable clean electricity. But with the existing fleet set to retire, additional nuclear beyond Hinkley Point C will be needed in a low-cost electricity system of very low emissions. Whether large-scale, small modular reactors (SMRs) or nascent advanced technologies, new nuclear can support jobs and growth at both national and regional levels.

The UK Government has committed to take a number of important steps to cultivate the next generation of nuclear technologies, which have the potential to enhance Wales' already strong position within the leading cluster of nuclear sector activity in the UK²⁴.

²³ Offshore Renewable Energy Catapult (2020) ([link](#))

²⁴ North West Nuclear Arc Science and Innovation Audit (2018) ([link](#))

a. Small Modular Reactors

Subject to value for money and future spending rounds, the £385m Advanced Nuclear Fund will enable investment of up to £215m into small modular reactor technology, which has the potential to unlock a further £300m in private sector funding. Later this year, the Generic Design Assessment process will open to enable an assessment of SMR technology from a safety and regulatory perspective, and an assessment will be made of the siting requirements for the reactors in due course.

The Fund also includes a commitment of up to £170m for a research and development programme on advanced modular reactors.

To help bring these new technologies to market, the UK Government will invest an additional £40 million in developing the regulatory frameworks and supporting UK supply chains.

b. Fusion

The UK Government, working with the UK Atomic Energy Agency, has committed £222m for the first five years of the STEP (Spherical Tokamak for Energy Production) programme to develop and build a prototype fusion power plant capable of delivering energy to the UK grid. The programme aims to demonstrate a path to the commercial viability of fusion energy.

The Secretary of State for Wales wrote to all local authorities in Wales in December to encourage all interested parties in Wales to consider engaging with this opportunity. Communities have until 31st March to nominate a site for STEP.

A further £184m is being invested to enhance UKAEA infrastructure, grow the UK's fusion skills base and expand research facilities for fusion and related fields, maximising scientific and economic impact of the UK fusion industry. This will make the UK the best place in the world for public and private sector fusion R&D.

c. Gigawatt-scale nuclear power

On large nuclear, the UK Government has made a commitment to negotiate "at least one more" gigawatt power plant up to the point of Final Investment Decision by the end of this Parliament, subject to clear value for money and all relevant approvals.

The response to the consultation on the suitability of the Regulated Asset Base model for financing nuclear projects, which was published alongside the Energy White Paper, stated the UK Government's view that the RAB model remains a credible option for potential future large-scale projects. In considering financing options, UK Government will also examine the potential role of Government finance during construction, provided there is clear value for money for consumers and taxpayers.

d. Wylfa Newydd

It is recognised that the news of Hitachi's withdrawal of the Development Consent Order application for the proposed Wylfa Newydd Nuclear Power Station will have come as a disappointment to many people in North Wales. Ultimately, this was a commercial decision for Hitachi. Wylfa remains one of the best sites in the country for developing nuclear power stations and is at the forefront of the UK Government's mind.

The UK Government previously offered a significant package of potential support to Wylfa Newydd that included taking a one third equity stake, providing all of the required debt financing to complete construction, and providing generous financial support through our Contract for Difference scheme.

The UK Government remains willing to discuss new nuclear projects with any viable companies and investors wishing to develop sites in the UK, including in North Wales.

e. Hinkley Point C and Wales

On 29 September 2016, the UK Government signed a Contract for Difference for Hinkley Point C (HPC), the first new nuclear plant in the UK for more than 20 years. HPC is delivering a range of economic benefits to Wales. As of January 2020, these include the following:

- The largest single group of locally based workers at the site comes from Wales. Over 1,000 Welsh residents have worked on the project so far.
- 21 apprentices who were employed at Wylfa are now working at HPC.
- Over 100 Welsh companies are working at Tier 1 and Tier 2 levels with contracts totalling over £150 million.
- The project is also sourcing more than 200,000 tonnes of Welsh steel from Express Reinforcements in Neath and large components from Vessco Engineering in Bridgend.

4. Accelerating the Shift to Zero Emission Vehicles

The 10 Point Plan confirmed the UK Government's intention to end the sale of new petrol and diesel cars and vans by 2030 and for all cars and vans to be 100% zero emission at the tailpipe from 2035. Between 2030 and 2035, all new cars and vans will be required to have a significant zero emissions capability, which would include some plug-in and full hybrids. This capability will be defined through consultation this year.

The UK Government's new phase out dates will help the UK to meet its climate change obligations. They will improve air quality in our towns and cities, support economic growth and put the UK at the forefront of the electric vehicle revolution.

To support the UK's world-leading automotive industry to make the transition to zero emission vehicle production, the UK Government has committed to investing £582m in Plug-in Vehicle Grants to incentivise take-up of zero or ultra-low emission vehicles and nearly £500m to be spent in the next four years on the development and mass-scale production of electric vehicle batteries and other strategic technologies as part of its commitment to a £1 billion Automotive Transformation Fund. Both measures are open to Wales, though it will be a decision for developers and companies as to whether to put forward proposals to request financial support, such as to set up a Gigafactory, from the Automotive Transformation Fund.

The 10 Point Plan also confirmed a funding package for electric vehicle charging infrastructure, though this policy area is generally devolved to the Welsh Government with the exception of a number of schemes such as the On-Street Residential Charging Scheme, Electric Vehicle Home Charging Scheme and Workplace Charging Scheme which apply to Wales. A total of £275m was committed for these schemes.

To ensure the phase out dates are met and to support the UK's interim carbon budgets, the Department for Transport will publish a green paper in the coming months on the post-EU regulatory regime for CO² emissions from new road vehicles. The green paper will consider both overall fleet efficiency and how best to deliver the move to 100% zero emission vehicle sales for cars and vans. This will apply to the whole of the UK.

5. Greener Buildings

Emissions from buildings make up 19% of the UK's overall emissions footprint. The challenge for government and industry is to transform how buildings use energy in line with our net-zero target but minimise the disruption to consumers as we go through this change and keep bills affordable. This shift has the potential to create new employment opportunities in, for example, engineering, materials and construction sectors.

As set out in answer to question 2, energy efficiency is generally devolved, though regulatory measures are mostly reserved and some support schemes, such as the Energy Compliance Obligation, which was extended in the Energy White Paper until 2026, apply to Wales.

The UK Government intends to consult on the territorial scope of and market mechanism to support delivery of its aspiration to install 600,000 heat pumps a year by 2028.

6. Investing in Carbon Capture Utilisation and Storage / Industrial Decarbonisation

Carbon, capture, usage and storage (CCUS) technology captures carbon dioxide from power generation, low carbon hydrogen production and industrial processes, storing it deep underground where it cannot enter the atmosphere. This technology will be globally necessary, but no one country has yet captured the market.

The cluster of industries in South Wales currently has the second largest emissions footprint in the UK, emitting 8.2 mega tonnes of CO₂ per annum, second only to the Humber, and CCUS could play an important role in its decarbonisation over the coming decades. Funding has been given, via UK Research and Innovation, to the South Wales Industrial Cluster to advance its plans for CCUS in the region.

The 10 Point Plan included a commitment to establish CCUS in 2 industrial clusters by the mid-2020s and an aim to establish 4 clusters by 2030, capturing up to 10 Mt of carbon dioxide per year. This will be enabled by a £1bn CCS Infrastructure Fund and business models for CCUS and low-carbon hydrogen production, which are currently in development.

In addition, the UK Government has already committed to a series of initiatives to support industry along a decarbonisation pathway to net-zero by 2050 and will publish an Industrial Decarbonisation Strategy later this year.

The Industrial Energy Transformation Fund (£289m for England, Wales and Northern Ireland) helps manufacturing companies with high energy use to cut their energy bills and carbon emissions through investing in energy efficiency and low-carbon technologies. £31m of grants were offered in the first window of the fund, including to projects in Wales. A second window has now launched with £40m available.

The £250m Clean Fund will support the UK steel sector to transition to lower carbon iron and steel production through new technologies and processes, maximising longevity and resilience in the UK steel sector by building on longstanding expertise and skills and harnessing clean growth opportunities. The response to the call for evidence on the potential design of the fund was published on 14 December 2020^[1].

The Industrial Decarbonisation Challenge, announced as part of the Industrial Strategy, will invest £170m across industrial clusters in the UK. The South Wales Industrial Cluster (SWIC) has benefitted from financial support from the Challenge. The cluster is considering a range of potential pathways to decarbonise its constituent heavy industries such as by utilising carbon capture technology and low-carbon hydrogen as a possible fuel source.

^[1] BEIS (2020) ([link](#))

7. Innovation and finance

Innovation is the key to fostering new clean technologies and advancing existing ones. It helps nurture better products, new business models and understand changing consumer behaviour and, ultimately, drives down the cost of clean technologies.

The Net Zero Innovation Programme (NZIP) will invest at least £1bn, with £200m committed to the coming financial year, to accelerate the commercialisation of innovative low-carbon technologies, systems and business models in power, buildings and industry.

The NZIP will focus on ten priority areas, including: floating offshore wind; nuclear advanced modular reactors; energy storage and flexibility; bioenergy; hydrogen; homes; direct air capture and advanced CCUS; industrial fuel switching; and disruptive technologies such as artificial intelligence for energy.

The fund will be open to applications for initiatives in Wales. Further information on how it will operate and how projects can apply for funding will be communicated in due course.

8. Jet Zero and Green Ships

Aviation and shipping are two of the more difficult sectors to decarbonise, which underscores the importance of government action in these areas. The UK Government aims to position the UK at the forefront of aviation and maritime technology to push forward low carbon travel and build on UK strengths

Wales, along with Scotland and Northern Ireland, has the potential to benefit from additional R&D funding for green aircraft technology, due to the concentration of airports, airfields, and aerospace manufacturers in the nations.

The UK Government is investing £15 million into FlyZero – a 12-month study, delivered through the Aerospace Technology Institute (ATI), into the development of zero-emission aircraft that could enter service in 2030.

The UK Government is also investing £15m into sustainable fuels and will consult on a Sustainable Aviation Fuel (SAF) mandate to create a market-led demand for these alternative fuels. Lanzatech are aiming to build a SAF alcohol-to-jet plant in Port Talbot, using flue gases from Tata Steel. The project was shortlisted for Stage 2 of DfT's Future Fuels for Flight and Freight Competition (F4C). Analysis from industry suggests up to 1,000 jobs could be created in Wales as a result of a strong domestic SAF industry.

To support the emergence of a market in zero emission aircraft, the UK Government will invest in R&D into the infrastructure upgrades required at UK airports to move to battery and hydrogen aircrafts.

For shipping, the UK Government will be investing £20m into research and demonstration projects to decarbonise shipping. The Clean Maritime Demonstration Competition, announced as part of the Prime Minister's 10 Point Plan and planned for launch in Spring 2021, is a one-year programme aimed at supporting the deployment of advanced fuels and energy that will accelerate maritime decarbonisation. This work is planned to include feasibility studies at key sites like Orkney and Teesside, the development of hydrogen and alternative fuel shipping hubs across the UK and has the potential to enable a number of clean maritime clusters.

9. Other

Further information on the final two elements of the 10 Point Plan – Green Public Transport, Cycling and Walking and Protecting our Natural Environment – which are of less direct relevance to the Committee's questions, is available in the 10 Point Plan document²⁵.

February 2021

²⁵ BEIS and the Prime Minister's Office (2020) ([link](#))