

The onshore wind industry prospectus

How a partnership between industry and Government can maximise the benefits of the clean power we need

October 2021



RenewableUK

Our members are building our future energy system, powered by clean electricity. We bring them together to deliver that future faster; a future which is better for industry, billpayers, and the environment. We support over 400 member companies to ensure increasing amounts of renewable electricity are deployed across the UK and to access export markets all over the world. Our members are business leaders, technology innovators, and expert thinkers from right across industry.

Cover image: Drumduff Windfarm | A joint project by Thrive Renewables and GreenPower, the wind farm is located on top of an old, disused open cast coal mine in West Lothian.

Foreword



Onshore wind is already a key part of the UK's decarbonisation success story. Renewables have overtaken fossil fuels as the biggest source of UK power, and a quarter of that electricity comes from onshore wind. It has delivered thousands of jobs across the UK, not least in Scotland, where it remains the nation's biggest employer in low carbon power generation.

The benefits of onshore wind are clear to us in industry and many in government – the low-cost power it can provide is vital to keep consumer bills down and support the competitiveness of UK industry in the net zero transition.

To meet the challenge of net zero, we must scale-up the growth of renewables and the industry has set an ambition for 30GW of onshore wind by 2030. This Prospectus sets our vision for onshore wind's role in the energy transition and how we can work with Governments across the UK to deliver this.

Working together to deliver 30GW of onshore wind by 2030 will:

- Cut **household bills** by £25 a year
- Boost a green recovery by **adding £45bn to the UK economy**
- Create **27,000 high quality jobs** that support a just transition
- Deliver high levels of local content that support **levelling-up every part of the UK**
- Permanently cut **carbon emissions 6m tonnes a year**

The UK Government's levelling-up agenda and green recovery policies across the UK nations can drive a new wave of investment in infrastructure and skills, and the onshore wind sector is ready to play our part.

Currently, however, we are consenting less than half of the annual onshore wind capacity needed for a net zero pathway. Building local support in communities is key to delivering the next generation of onshore wind projects and we know that public support for action on climate change, in general, and onshore wind, in particular, is rising.

Working proactively with local communities, we can ensure that the right developments can progress and that the environmental, economic and social benefits of onshore wind investment are felt at the local level. From work for local construction firms, to community benefit schemes and skilled, long-term jobs in maintenance and engineering, onshore wind can bring new opportunities to support communities and levelling-up across the UK.

Matthieu Hue
Chief Executive Officer
 EDF Renewables
 &
Chair of the Onshore Wind Steering Group

The benefits of 30GW of onshore wind by 2030



Given the low cost of onshore wind, its development will payback the consumer around £16.3bn, or £25 a year for every UK household.



Saving 60 million tons of CO2, equivalent to saving 14,000km² of forest – the size of Northern Ireland - setting an example to the world ahead of COP26.

Northern Ireland
1,000 jobs and
£2bn GVA

Scotland
17,000 jobs and
£27.8bn GVA



Creating 27,000 full time jobs between 2021 and 2030, with a further 30,000 created during the operation of the wind farms.

Wales
3,000 jobs and
£4.4bn GVA

England
6,000 jobs and
£10.8bn GVA



Creating £45bn of GVA for the UK, and regenerating those areas key to the 'levelling up' agenda.

Growing the UK Supply Chain

Setting clear targets for onshore wind development across the UK, coupled with supportive policy enhancements, will significantly increase investment and market confidence. However, industry want to work with each Government of the UK to build on this favourable environment for investment and ensure that the UK maximises the growth of its supply chain in the sector. This would build on the successful industry-Government supply chain strategy for offshore wind highlighted in the UK Government's 10 Point Plan.

Continuing our commitments to the people, natural environment, and energy system transformation of the UK

We're committed to continuing the investment we make beyond our jobs and contracts - to the natural environment, to partnerships with local communities, and to supporting the transformation of our energy system to achieve net zero emissions, through clean electricity and hydrogen. What's more, we're committed to doing this at the lowest cost to consumers – ensuring bill payers see the maximum benefit of their commitment to developing the lowest cost form of new generation.

SPOTLIGHT ON SCOTLAND

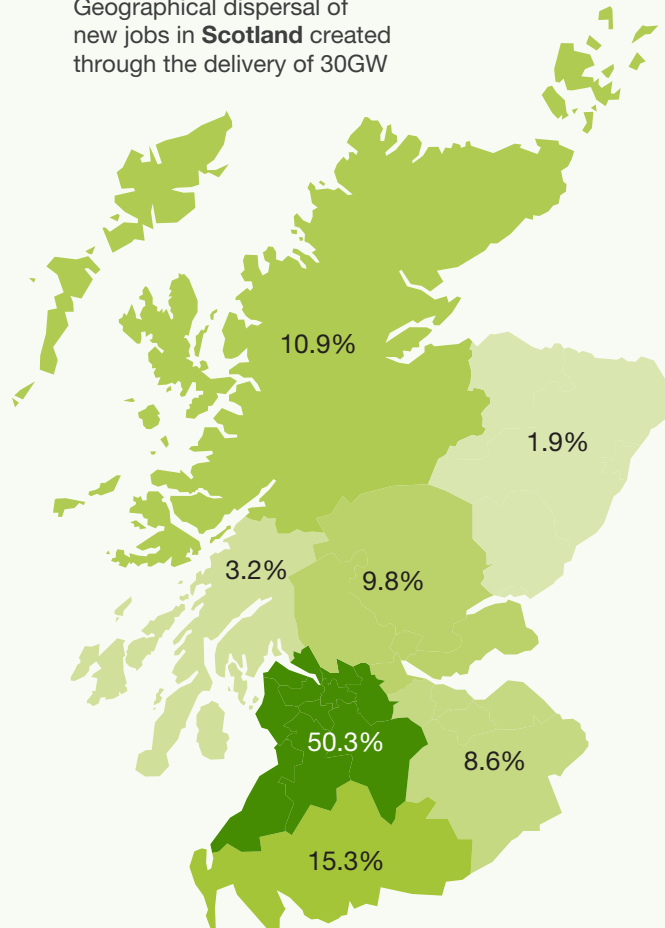
The onshore wind sector has proved a major success story for Scotland, which has established itself as a world leader in onshore wind production. Onshore wind is Scotland's biggest single renewable energy source, accounting for around 71% of installed generation capacity, and is popular in both rural and urban Scotland.²³ Onshore wind already the largest clean energy employed in Scotland, supporting 8,800 jobs and contributing £2.2bn each year.⁴

The potential benefit of further onshore wind development is enormous. Scotland is the location for most of the onshore wind that would be built in the 30GW by 2030 scenario (around 80%). As a result, Scotland is expected to see an additional £27.8 billion in GVA and 17,000 jobs.

The Scottish supply chain will provide 43% of the content of new onshore wind farms across the UK, building on Scotland's high proportion of developers, civil contractors and wind farm support service providers having headquarters or other facilities in central and south west Scotland in particular.

The Scottish Government's Onshore Wind Policy Statement will be a crucial if we are to enable Scotland to reap these benefits in the transition to net zero.

Geographical dispersal of new jobs in **Scotland** created through the delivery of 30GW



Case study: Vestas upskilling the Scottish workforce for roles in onshore wind

Vestas has built up a Service Base in Inverness to support its UK onshore wind portfolio, employing over 22 technicians and staff today, and continuing to grow. Since 2017, Vestas has had an ongoing partnership with University of Highlands and Islands to train apprentices to HNC level which continued during COVID-19. Vestas has extended the 3 year course to a 4 year course in order to focus on growing the skill level of the apprentices specifically for the industry, so they are well prepared

at Apprentice Technician (AT) level by the end of the course. This ensures they are highly trained and have solid industry-transferable skills for them. 8 apprentices have been trained in partnership with UHI with further recruitment to follow in 2021. Vestas also runs a 3 year Offshore AT program at Fraserburgh College in the region.

Case study: local business engagement at Freasdail Wind Farm

At Freasdail Wind Farm, located on the Kintyre Peninsula, RES held a meet-the-buyer event which encouraged local contractors to come and register their interest

in the project ahead of the main construction works taking place. This event resulted in a range of local contractors, services, materials and accommodation providers all having a critical input into the successful construction of the project. At its peak, over 85 people were employed on-site in the construction of the wind farm and the associated grid connection. The total sum of local expenditure at Freasdail reached £6.35m once the wind farm was energised in early 2017, nearly double the estimated £3.3m anticipated during the project's development.

2. www.scottishrenewables.com/news/future-onshore-wind-power-comes-glasgow/
 3. www.scottishrenewables.com/news/first-poll-rural-scotland-two-thirds-back-wind/
 4. University of Strathclyde's Fraser of Allander Institute analysis, 2021

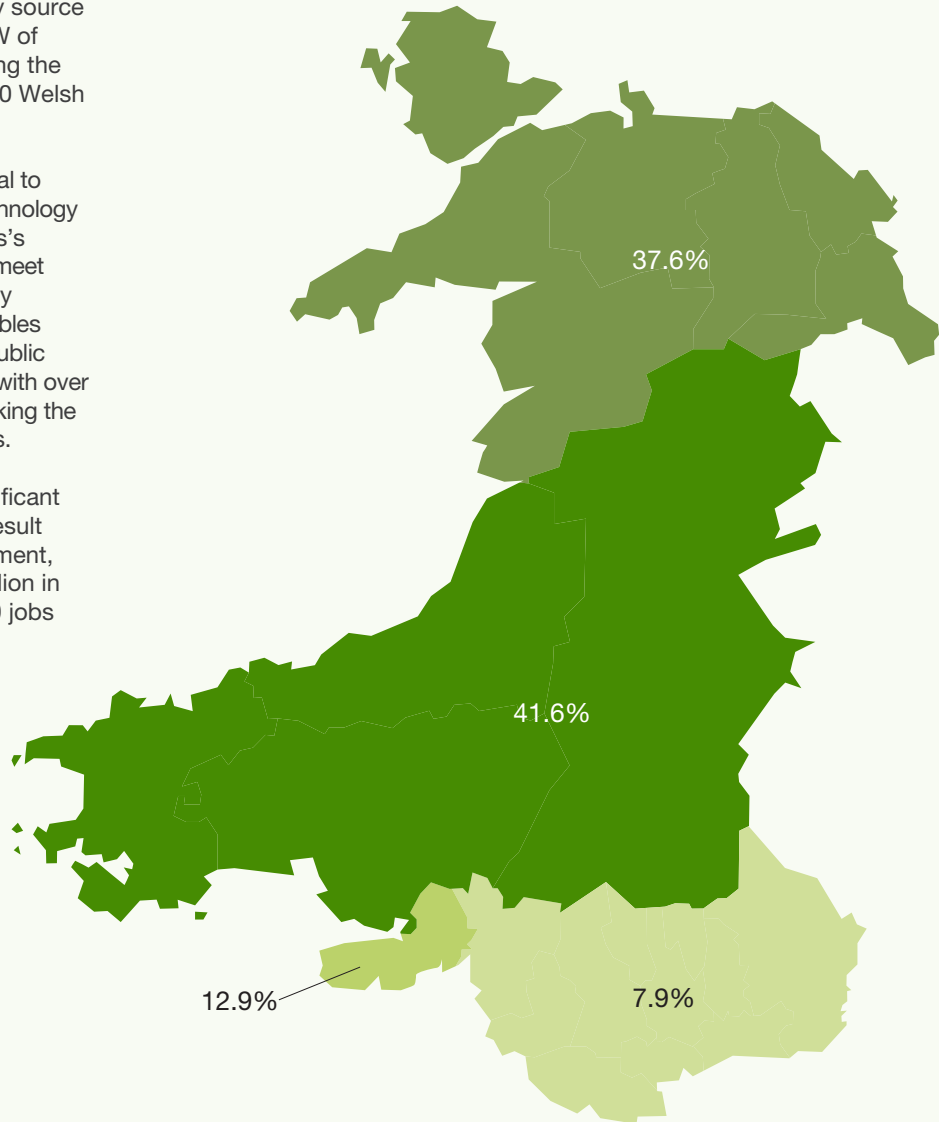
SPOTLIGHT ON WALES

Onshore wind is the single biggest renewable energy source in Wales, with over 1.2GW of installed capacity powering the equivalent of over 800,000 Welsh homes each year.

There is significant potential to grow onshore and this technology will play a key role in Wales’s energy transition, helping meet the target of 70% electricity consumption from renewables by 2030. There is strong public backing for onshore wind with over 70% of Welsh people backing the new development in Wales.

Wales stands to see significant economic benefits as a result of onshore wind development, with an expected £4.4 billion in additional GVA and 3,000 jobs by 2030.

Geographical dispersal of new jobs in **Wales** created through the delivery of 30GW



Case study: onshore wind developers partnering with communities in Wales

In 2020 wind farms operated by RWE in the UK invested over £4.3 million into local communities, through their community benefit funds. Wind farms operated by RWE invested over £640,000 into 212 community projects, including supporting the response to COVID 19:



Clocaenog Forest Wind Farm Fund - £24,000 was awarded to Clwydian Range Food and Drink Group over 1.5 years to fund a co-ordinator to assist businesses to recover from covid19 crisis.

Brechfa Forest Onshore Wind Farm has supported Skanda Vale Hospice with £260,000 over 5 years towards purchasing a bunk house which will allow them to greatly increase their services while reducing their dependence on grants. Skanda Vale operates the only predominantly volunteer run hospice in the UK.

SPOTLIGHT ON NORTHERN IRELAND

Almost 50% of Northern Ireland’s electricity was generated by renewables in 2020 and the industry has set out how 80% could be achieved by 2030. Key to this will be an expansion of onshore wind, growing capacity in Northern Ireland to 2.5GW from 1.4GW today.

Investing in new onshore wind at this scale would boost the Northern Ireland economy by £2bn and is in line with the System Operator for Northern Ireland’s modelling on accelerating decarbonisation. The upcoming Energy Strategy will be crucial in setting Northern Ireland on a path to net zero and putting in place new policies to secure investment in onshore wind.



Case study: Northern Irish projects supporting the local economy

The development of Castlecraig Wind Farm delivered significant local investment in Co. Tyrone and the wider NI economy. Developers RES and NTR secured inward investment of £16 million across Northern Ireland and £6 million in the local economy, with the majority of RES’s construction team and contractors sourced from



the local area. The project will provide Fermanagh Omagh District Council with business

rates of approximately £10.6 million over the project lifetime.

The actions required to deliver 30GW of onshore wind by 2030 for net zero

The onshore wind industry wants to partner with each Government in the UK. Each nation of the UK stands to benefit and only with collective action from each can we achieve the overarching goal of 30GW of development by 2030 required for net zero, with the potential of further development with successful reform.

Scotland

Target: 20.4GW (Today: 8.4GW)
 Scottish Government needs to set out a target of 12GW of new development by 2030 and support this aim with an enabling planning policy framework including National Planning Framework 4.

Wales

Target: 3.5GW (Today: 1.3GW)
 Welsh Government needs to set a target of 2.2GW of new development by 2030, and establish and deliver a new strategy for grid development in Wales to support this as a minimum.

Northern Ireland

Target: 2.5GW (Today: 1.4GW)
 The Northern Ireland Executive needs to set a target of 1.1GW of new development by 2030, and take forward two reforms:

- To set an enabling planning framework, utilising the current planning review
- To reform Northern Ireland's utility regulator to prioritise net zero in grid infrastructure development.

UK Government (UK-wide and England)

There are several policies UK Government needs to take forward to support development across the UK:

- Set a target of 30GW of installed onshore wind capacity by 2030, supported by regular annual CfD auctions.
- Ofgem reform, to enable anticipatory grid investment and a supportive regulatory environment, including an investment-supportive system of grid charging.
- Aviation radar mitigation, by ensuring new radar procurement acknowledges onshore wind farms.

England-specific

Target: 3.6GW Today: (3.1GW)
 UK Government should explore reform to English planning, brought forward through the Planning White Paper.

Policy priority common to all: the facilitation of 'repowering' and life extension

Not all of the development required to achieve net zero has to be on new sites. Each Government should establish an enabling policy framework to ensure the onshore wind farms expected to come to the end of their life are either replaced with modern, more powerful, and most cost-efficient turbines, or existing turbines are maintained/renovated in order to continue to generate beyond their originally anticipated end date.

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"While onshore wind and solar are now eligible for CfDs, there is no clear medium- to long-term ambition. CfDs are a proven policy for delivering new capacity, but clarity is needed on the auction schedule and pathway of volumes to be procured to 2030..."

"Set out a schedule for regular auctions to procure low-carbon generation, with a clear pathway of volumes to be procured and robust contingency for uncertainties in demand and delivery. Address potential barriers to deploying and using low-carbon generation at scale (e.g. the planning and consenting regime for renewables and networks, exposure to climate risks) and, with Ofgem, develop a framework under which sufficient supply resilience can be ensured."

Recommendations from the **Climate Change Committee's** 2021 Progress Report to Parliament

Introduction

The UK Government's embrace of onshore wind is born from obligation and opportunity.

The science on climate has never been clearer, and the necessary transformation of the economy to one which emits 'Net Zero' carbon emissions will require an 100% decarbonisation of the electricity system by 2035, as demand for electricity rises 50% from today, and consistent development beyond that. We will need a diverse mix of low carbon technologies to achieve this, while maintaining affordability and security of supply. Onshore wind has a key role to play in delivering this transformation to Net Zero.

However, as the Prime Minister has suggested, and as Alok Sharma, as COP President, has reinforced to the world, the embrace of onshore wind is one born of self-interest. As the lowest-cost form of renewable generation, developing onshore wind is set to lower energy bills for consumers in the long term. Onshore wind farms have brought jobs, ecological and societal benefits to the communities they're sited in. As a result, they're increasingly popular, with 33% of the public stating that they like them more than they did five years ago.

Renewable energy is by far the most popular aspect of the Government's 10 Point Plan for a Green Industrial Revolution. Five times as many people want the Government to prioritise renewable energy investment over any other green sector and onshore wind, consistently popular in the BEIS Attitude Tracker, should be prioritised within that.



"Good morning from Whitelee wind farm, the epicentre of UK onshore wind, where the turbines behind me are twice the height of the epic Glasgow cathedral are powering practically every home in the city... It's a snapshot, friends, of the future that is within our grasp if we act now and act together to protect our precious planet..."

"Whitelee alone supports 600 jobs, 6,000 at peak construction, and this wind farm is the centre of the low carbon economy. A tangible demonstration of our green industrial revolution. And a haven for plants and animals. This is the future young people around the world are demanding."

Rt Hon Alok Sharma MP

COP President

"Six months to COP" speech, 2021

Our Offer

This Prospectus is an offer from the onshore wind industry to Governments. To work with us to maximise the economic and societal benefits of onshore wind...

...which starts with agreeing a joint UK-wide industry-Government target of 30GW of onshore wind by 2030 to send a message of confidence to the world ahead of COP26 and send a message of assurance to investors in our supply chain. Against this backdrop, we'll work with Governments to develop a proactive strategy to maximise jobs and investment in the supply chain – intertwined with the already successful strategy for increasing growth in the offshore wind supply chain committed to in the UK Government's 10 Point Plan.

Working together to improve the policy environment around onshore wind, we can ensure we get the development we need and we don't miss the opportunity to upgrade ('repower') the wind farms we have already. We can also make communities near windfarms benefit along with the wider economy and bill payers, and that we maximise jobs in the sector.

The benefits are crystal clear, as we outline in each Chapter of the Prospectus. Onshore wind is:

- **A tool to 'level-up' the economy with 27,000 high value jobs across development, supply chain and operations activity. Development activity would see jobs peaking at 36,000 in the 2020s – particularly in Scotland, Wales, Northern Ireland and the North of England.**
- **Already playing a role in the 'Green Economic Recovery' and will continue to by adding £45 billion of GVA to the UK.**
- **Critical to 'Net Zero', at lowest cost, with 30GW of onshore wind lowering energy bills for consumers by £25 a year, paying back £16.3bn to consumers and supporting the growth of low cost, green hydrogen production in the UK.**
- **An opportunity to reposition the UK's place in the world as a green superpower at COP26 and beyond, by cutting by 6 million tonnes of CO2 every year using onshore wind – equivalent to planting a forest the size of Northern Ireland or taking 1 million cars off the road.**

We've also focused on two key priorities for the sector – building our supply chain and ensuring a mutually beneficial partnership with local communities.

Just as we are being clear about the benefits of delivering 30GW by 2030, this Prospectus will clearly outline the policy reforms and industry initiatives required to achieve it. Several of these measures, particularly in planning policy and grid infrastructure development, require action across UK, Scotland, Wales, Northern Ireland and local Governments. As such, it's essential this is a programme embraced by all levels of Government to the benefit of all and this is outlined in detail at the end of this Prospectus.

Chapter 1: Onshore wind is key to 'Levelling-up' the UK economy and a 'Green Economic Recovery'

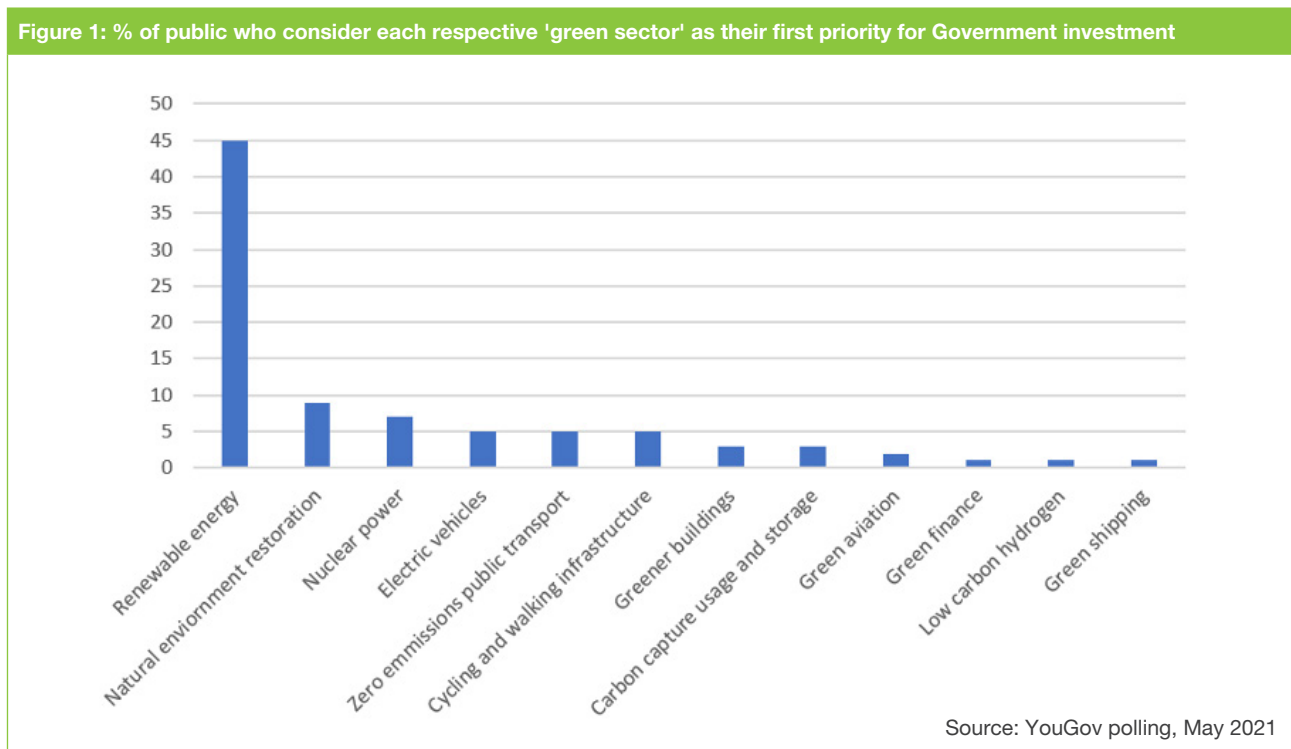
Popular support for the role of renewables in a 'Green Economic Recovery'

The industry has been able to keep investing, keep building, and maintain a steady growth in jobs over the last two years. Offshore and onshore wind energy companies invested £4 billion and created over 2,000 jobs even

during the peak of the first lockdown between March and July 2020.¹

Now, looking to the future, recent polling showed that the public have a clear preference for investment in renewable energy over every other element of the 10 Point Plan for a Green Economic Recovery. 70% of people support developing new

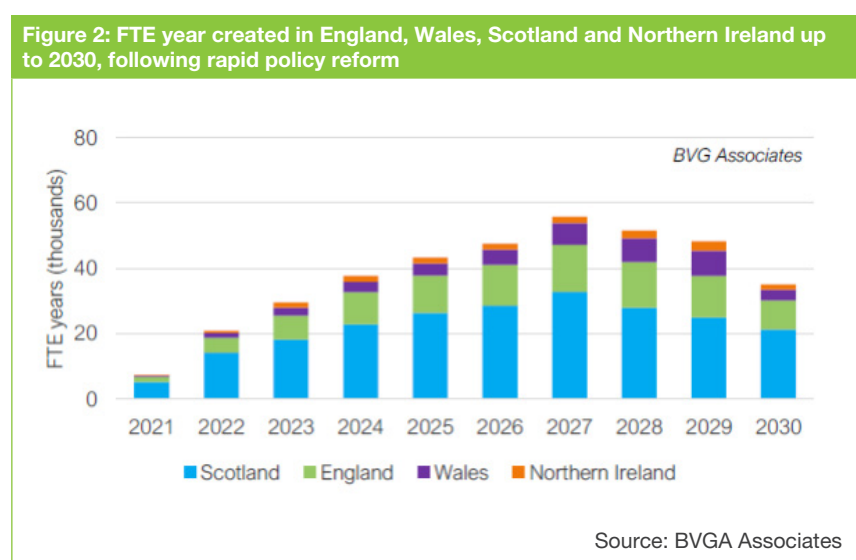
onshore wind and support has grown, with 33% saying their opinion of onshore wind has improved in the last five years. Given this, onshore wind should be at the heart of the green economic recovery, backed by overwhelming public support.



Onshore wind could support 27,000 new jobs and £45bn of GVA

BVGA modelling of the economic benefits of developing the onshore wind required to achieve 30GW of onshore wind development by 2030 shows the vast economic opportunity the sector offers.

With rapid policy reform, making sure we grasp the opportunity of projects already in the pipeline, we can ensure that those jobs grow rapidly at the start of the decade, supporting our post-COVID recovery.



1. RenewableUK analysis

The key to ‘levelling-up’ the economy

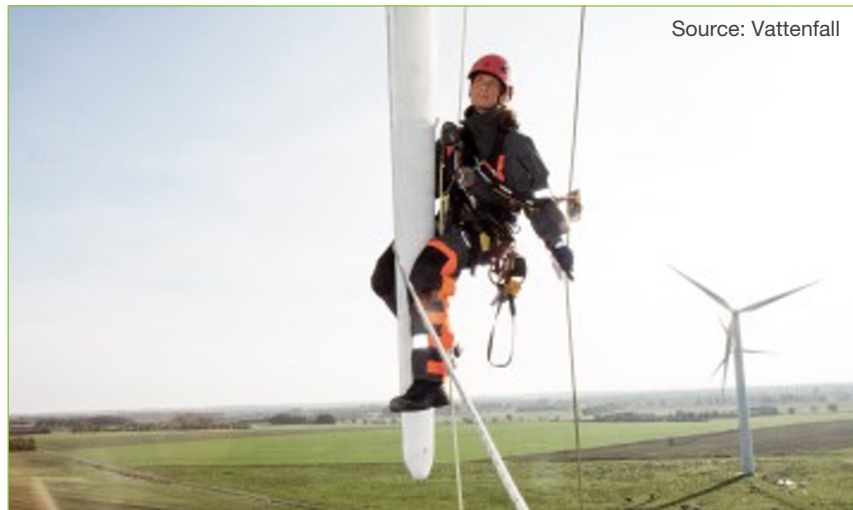
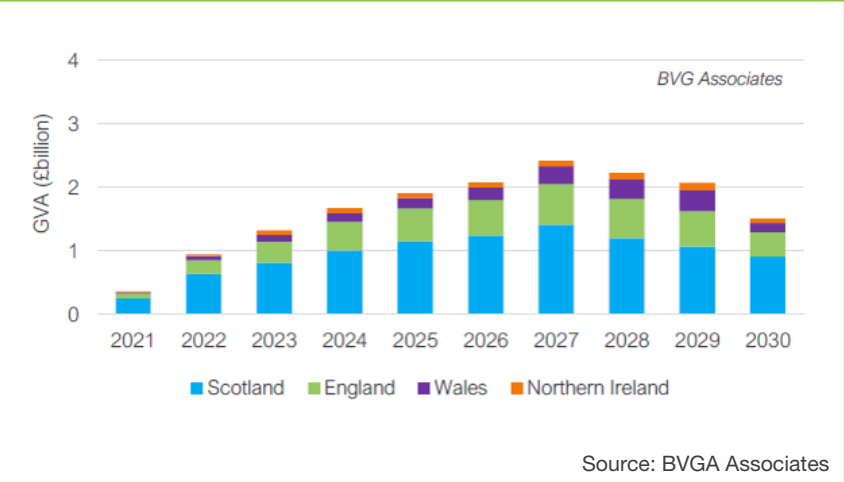
We strongly support aspirations to ‘level up’ the economy of the UK outside of London and the South East. Given the vast majority of onshore wind development will take place in Scotland, Wales, Northern England and Northern Ireland, and the propensity for developers to contract local companies, the industry is set to be a critical driver of the high-wage high-value jobs which will make this ambition a reality.

Each nation of the UK will benefit from new onshore wind, commensurate to the level of development in each and the relative prevalence of supply chain companies grown from previous development:

- **Scotland** is expected to see 17,000 jobs and £27.8bn GVA
- **Wales** is expected to see 3,000 jobs and £4.4bn GVA
- **Northern Ireland** is expected to see 1,000 jobs and £2bn GVA
- **England** is expected to see 6,000 jobs and £10.8bn GVA

In addition to its commercial activities, the onshore wind industry also makes significant investments in local communities through several other channels, including substantial community benefit schemes (outlined in more detail in Chapter 4), rent to local landowners and business rates.

Figure 3: GVA created in England, Wales, Scotland and Northern Ireland up to 2030, following rapid policy reform

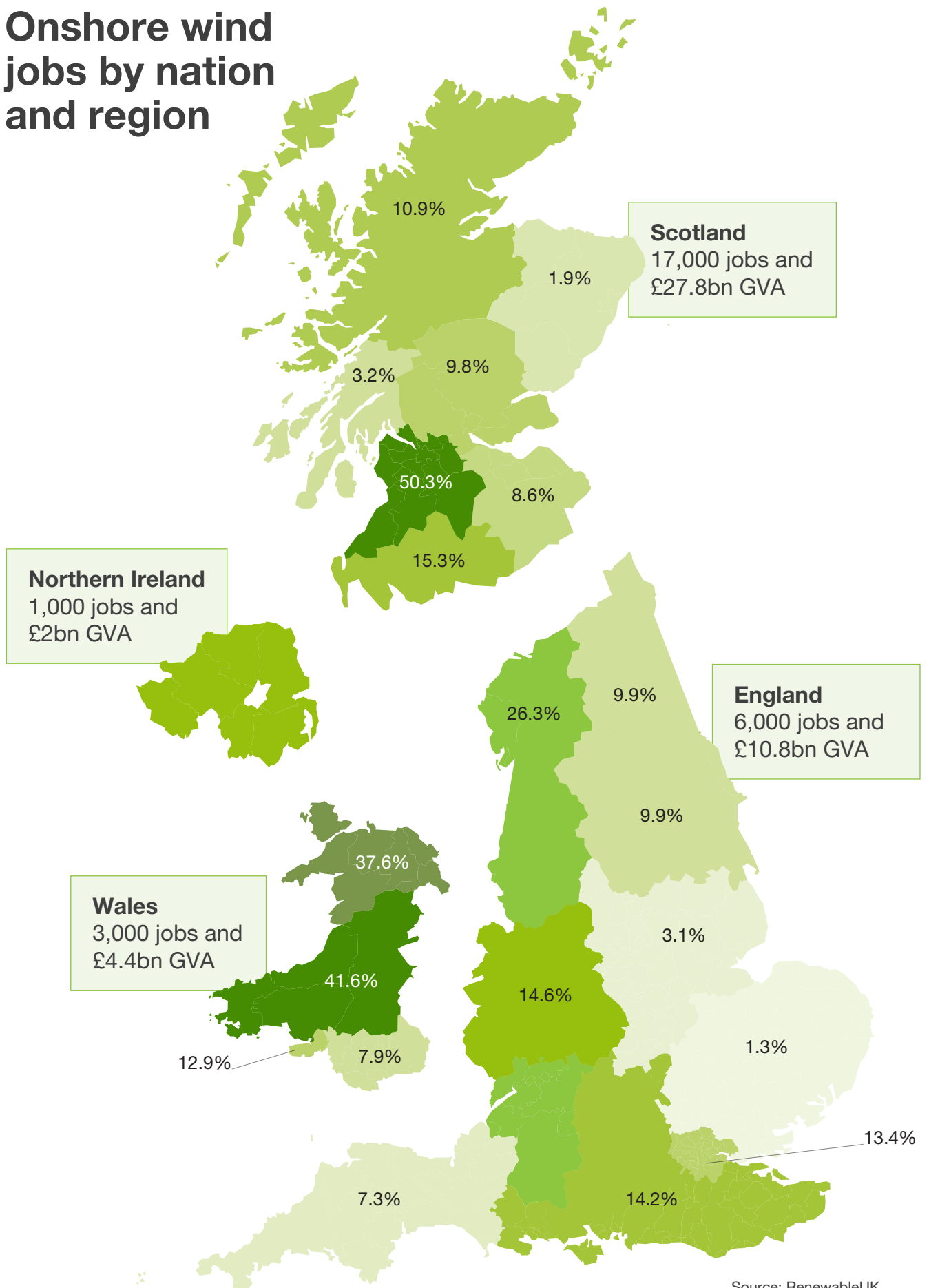


Overview

Policy enhancement to ensure onshore wind supports ‘levelling up’ the UK economy and a ‘green economic recovery.’

- A UK-wide 30GW target set by UK Government, with associated targets of 20.4GW by 2030 set by Scottish Government, 3.5GW by 2030 set by Welsh Government and 2.5GW set by the Northern Ireland Assembly, coupled with a UK Government commitment to annual CfD auctions for the technology – maximising investor confidence in the sector.
- Addressing each of the policy enhancements outlined in Chapter 6 of this report.

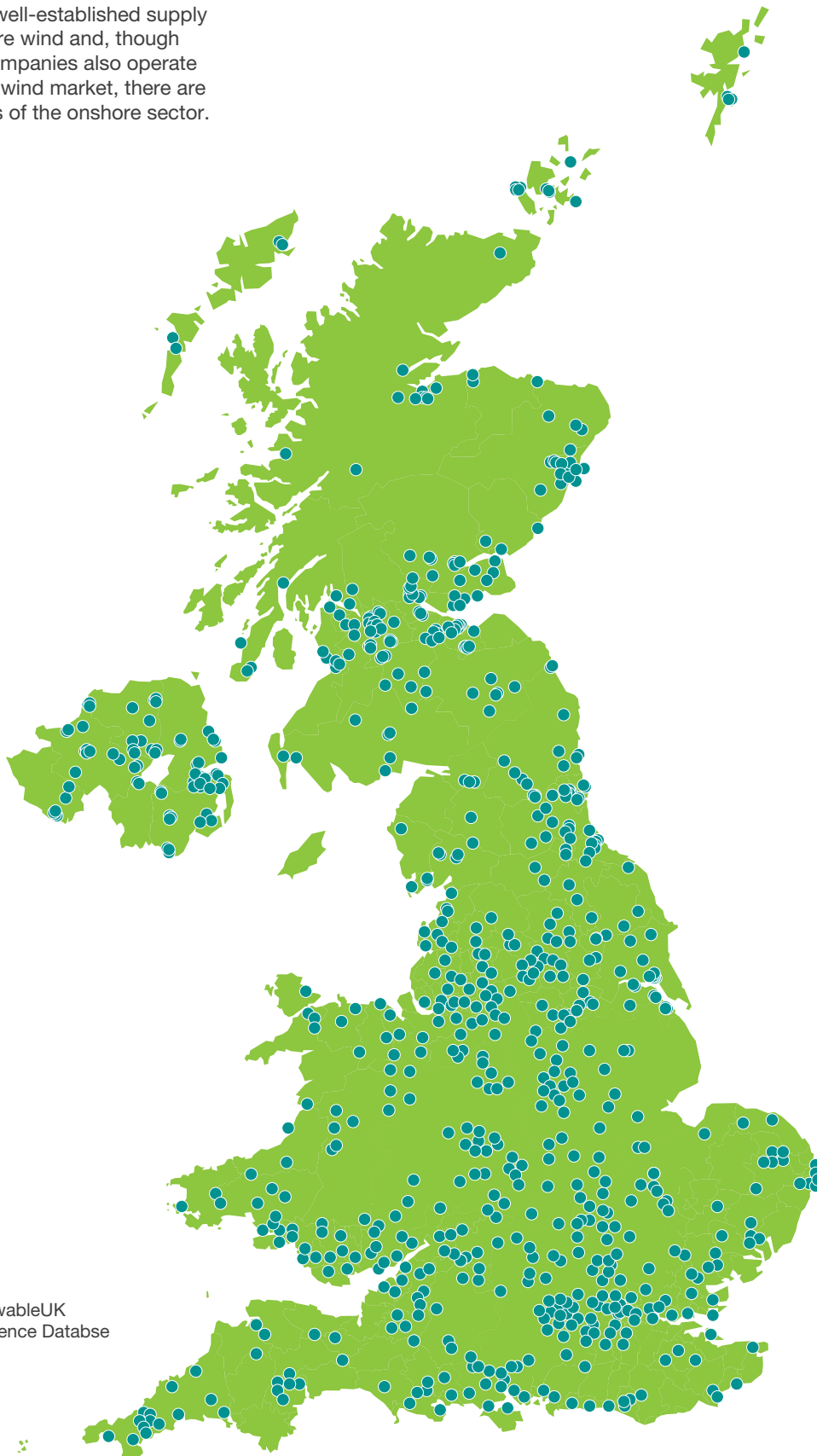
Onshore wind jobs by nation and region



Chapter 2:

Working with industry to build our supply chain

The UK has a well-established supply chain in onshore wind and, though many of the companies also operate in the offshore wind market, there are unique aspects of the onshore sector.



Source: RenewableUK
Project Intelligence Database

Onshore wind developments typically have high levels of UK supply chain content, particularly in civil and electrical works, operations, maintenance and servicing.

Building the new onshore wind farms needed to meet 30GW by 2030 would lock in long-term jobs and value across the UK. In addition to jobs created in construction and installation activity for new projects, 30 by 30 would create 27,000 full-time, long-term jobs throughout the operational life of new onshore wind farms. In terms of economic benefit, this operational phase of the wind farms will generate £27 billion GVA – the most of any supply chain category.

"As we journey towards a low carbon economy, FSB wants to see the UK lead the world in renewable technologies like onshore wind, nurturing the UK skills base and ensuring that our small firms are empowered to supply their products, services and expertise to these industries."

The Federation of Small Businesses

Case study: Jones Bros

Jones Bros is an award winning civil engineering company. Having established techniques for constructing forestry access tracks in mid-Wales during the 1970s, Jones Bros was in an ideal position to start providing balance of plant services for wind farm developers and turbine manufacturers. They have won a wide range of £multi-million contracts in recent decades, with their largest wind farm contract to date involving 76 turbines (228MW).

Case study: RenewableParts Ltd

Renewable Parts is a supply chain and refurbishment specialist in the wind energy industry. Focusing on circular economy best practices, its specialist refurbishment centre in Lochgilphead (Scotland) is a central pillar of the company's vision to create a more sustainable industry. Applying the latest techniques to restore unserviceable parts to their original "as new" condition, Renewable Parts is now helping customers to reduce their carbon footprint and become greener businesses. This pioneering work has resulted in multiple solutions across technologies including Vestas, Siemens-Gamesa, Senvion, Nordex, and GE technologies.

Figure 5: Total FTE years created during the CAPEX phase of projects required to achieve 30GW of development by 2030

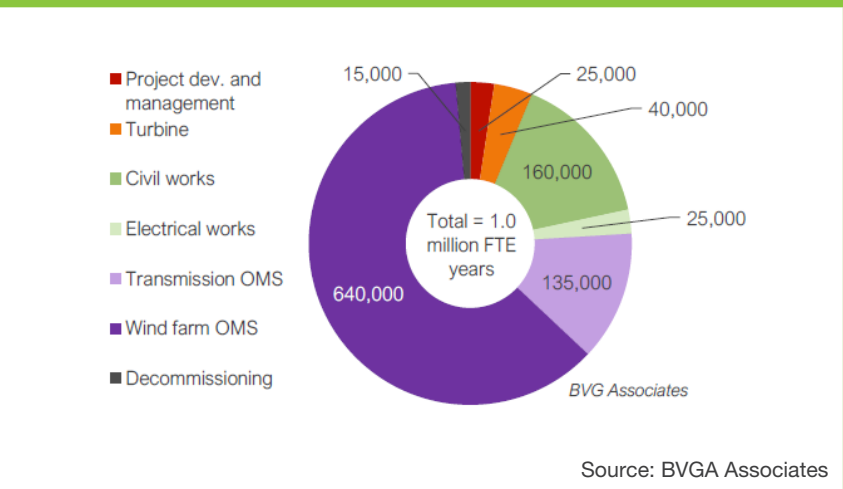
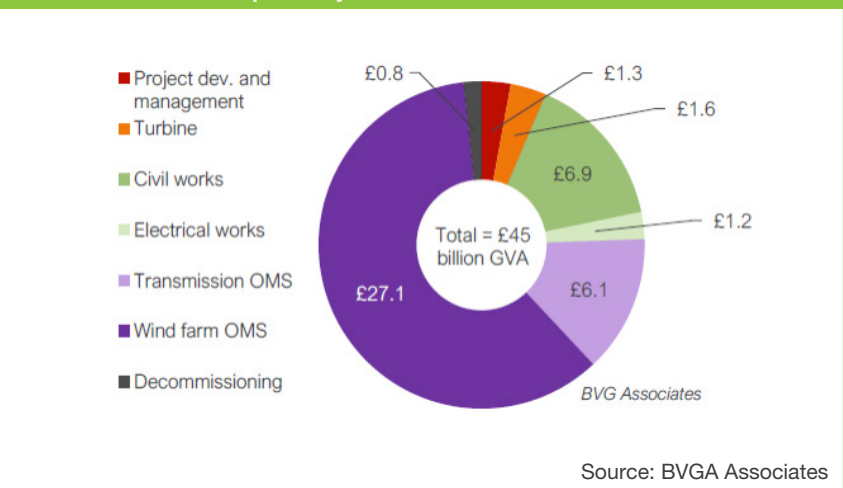


Figure 6: Total GVA created during the CAPEX phase of projects required to achieve 30GW of development by 2030



Our offer to Governments; a joint strategy to boost supply chain growth

The onshore wind industry is keen to support the growth of its supply chain. Later this year the industry will be conducting a review of its supply chain, to better understand the opportunities for growth and competitive advantage in the various parts of it. By reviewing the various segments of the supply chain – such as operations and maintenance and all aspects of manufacturing – as well as capacity needs in the market and opportunities for cross-sectoral transfer, we aim to produce a list of ‘priority market segments’ for Government-industry to target for growth.

As we have seen in offshore wind, a clear long-term target for development (40GW by 2030) boosts investor confidence, and the announcement of new manufacturing such as a new GE blade facility in Teesside has shown that, when this is coupled with a partnership approach with Government, we can maximise investment. To illustrate this potential, the economic analysis accompanying this report has modelled a scenario in which joint working would lead to new investment in a towers facility, of which there is demand in the onshore and offshore wind sectors.

Furthermore, we are keen to establish how the complimentary development of the offshore wind supply chain could be utilised, to the benefit of each sector – for example in supporting the pace of innovation and trials of new technology.

A supply chain growth strategy would be supported by a national shift of policy in favour of modern turbines, as investors would be confident that new plant and services to service UK contracts could also service a wider European and global market which predominantly utilises newer more cost-efficient onshore wind technologies.



Source: Survation polling, July 2021

Case study: Onshore Wind Supply Chain Innovation at Vestas’ Isle of Wight facility

Vestas has undertaken world leading turbine R&D at its Isle of Wight Technology Centre since 2002 and today employs around 150 industry-leading engineers alongside over 700 FTEs in blade manufacturing. Vestas has designed, tested and manufactured 9 blade types at the Isle of Wight since 2002, from the early onshore blades to

the 85m V174-9.5MW offshore blade today. Bearing testing, design verification and supplier validation is also supported at the centre. Collaboration with local institutes and universities including the National Composites Centre, OREC and Southampton University is key to the continued success. Vestas has grown its activity on Isle of Wight over the years, making it Vestas’ global centre for blade design, testing and verification.

Overview

Our offer to Government

As the previous chapter outlined, setting clear targets for onshore wind development across the UK, coupled with supportive policy enhancements, will significantly

increase investor confidence. However, industry want to work with each Government of the UK to build on this favourable environment for investment and ensure that the UK maximises the growth of its supply chain in onshore wind.



Image: Fallago Rig Wind Farm

Chapter 3:

Onshore wind: critical to achieving net zero at least cost

Onshore wind is critical to achieving the UK's 2050 'net zero' emissions target, and the Sixth Carbon Budget – the latter requiring 100% decarbonised electricity by 2035 as demand for electricity grows by 50% from today.

The Government has recognised the need for further onshore wind development; re-establishing Pot 1 Contracts for Difference Allocation Rounds for onshore wind and confirming in the Energy White Paper that "onshore wind and solar... we will need sustained growth in the capacity of these sectors in the next decade to ensure that we are on a pathway that allows us to meet net zero emissions in all demand scenarios".

To sustain growth in onshore wind capacity, and provide confidence to the supply chain, will require certainty that Pot 1 technologies will have access to Contracts for Difference Auctions beyond Allocation Round 4, in all countries of the UK.

Onshore wind: clean and cheap

As the lowest-cost form of new electricity generation, onshore wind isn't just necessary but incredibly desirable. The cost of electricity from new onshore wind projects is currently lower than the wholesale electricity price and is forecast to get cheaper, resulting in greater benefits to consumers. Achieving 30GW of onshore wind by 2030 would result in payback to the consumer of c.£16.3 billion – cutting household energy bills by £25 a year – when brought forward through CfD auctions.

Through its Contract for Difference Auctions, the UK has an internationally recognised system of clean energy procurement which has secured billions of pounds of private investment, maximised competition to reduce the cost of electricity for consumers, whilst de-risking successful projects for investors, further lowering costs. Analysis by ARUP showed that revenue stabilisation via a CfD can increase the appetite of investors and the availability of finance as it reduces wholesale price risk. The increased certainty

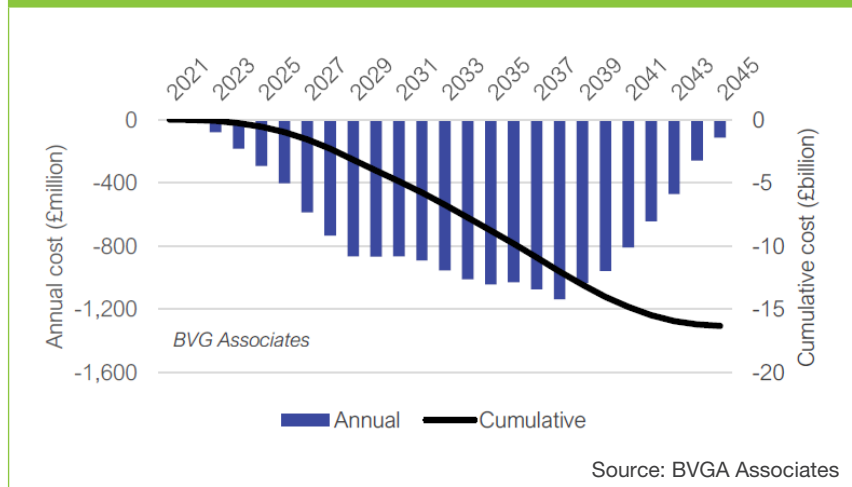
"Significant new renewable generation capacity is needed to accommodate rapid uptake of electric vehicles and hybrid heat pumps. Over the period to 2035, up to 35 GW onshore wind, 45 GW offshore wind and 54 GW solar PV could be needed."

Imperial College London & Vivid Economics
 'Accelerated electrification and the GB electricity system'
 report prepared for the Climate Change Committee

"onshore wind is the lowest cost large-scale low-carbon generation technology. If we ignore it, then more expensive alternatives will have to take its place, driving up consumer bills. Both the National Infrastructure Commission and the Committee on Climate Change have said the UK should support more onshore wind to keep the cost of tackling climate change down – and we agree."

Richard Hall, Chief Energy Economist, Citizens Advice

Figure 7: Net payback to consumers of development up to 30GW of onshore wind by 2030



improves project viability and also allows investment to come forward at a lower cost of capital, lowering the levelised cost of energy for an onshore wind project by between £6/MWh and £12/MWh relative to position where no stabilisation is provided.⁵ As part of a shared 2030 strategy we would encourage Government to commit to regular auctions for onshore wind, annually.

Contributing to UK competitiveness and productivity
 In the long term, the low-cost power produced by onshore wind will help

support UK productivity. British industry pays on average a third more for electricity than its counterparts across Europe.⁶ The average electricity price for large UK consumers (business users) is around a fifth higher than that paid by their European equivalents.⁷ This disparity in electricity prices puts UK industry at a competitive disadvantage. At a time when both productivity and maximizing UK exports post-Brexit are of critical importance for our economy, exploring all options for reducing this significant internal cost should be a priority.

5. www.arup.com/perspectives/publications/research/section/onshore-wind-financing
 6. UCL (2018) report - <https://www.ft.com/content/2ffd8d62-0828-11e8-9650-9c0ad2d7c5b5>
 7. Association of Decentralised Energy & RenewableUK, 'Industrial flexibility and competitiveness in a low carbon world', https://www.theade.co.uk/assets/docs/resources/Industrial%20flexibility%20and%20competitiveness%20rep_ort_v10%20web.pdf

“British manufacturers face some of Europe’s highest power prices. Bringing back support for onshore wind would help reduce overall energy prices and thereby improve manufacturers’ competitiveness.”

Ben Fletcher, Chief Operating Officer, Make UK

Some companies are already taking advantage of the low cost of onshore wind by agreeing corporate power purchase agreements with developers – effectively, building their own wind sites. Though the steady increase in, and awareness of, this market in recent years is welcome, in these instances the benefits of onshore wind are limited to those companies with the bandwidth and financing to explore it. Building onshore wind for the wider market would ensure all UK businesses benefit from lower energy costs.

There are also wider benefits to industry in having low-cost variable generation on the grid. Businesses who are able to be flexible in their energy use can take advantage of price fluctuations in the energy market and receive payments for their dynamic interactions with the grid. On the continent, where demand response is more prevalent, large consumers can reduce their annual energy bill by up to 10% through participating in demand response programmes.⁸⁹

Supporting the development of the wider net zero energy system But the benefits of onshore wind to a net zero energy system aren’t limited to provision of low-cost electricity. Onshore wind companies are revolutionising the electricity system, supporting new flexibility services, grid resilience, security and stability.

Onshore wind has a wide geographical spread across the UK and can act as ‘an aggregated power system’ providing flexibility to local energy networks and the national transmission system in managing

Case Study: ScottishPower Renewables - powering Tesco by onshore wind

The 30MW Halsary onshore wind farm with Tesco, located in Caithness, is one part of the retailer’s pledge to use 100

per cent renewable energy by 2030. The project is powered by 15 Vestas turbines, capable of generating enough renewable energy to power the equivalent of over 27,000 homes.

Case study: Innovation at Dersalloch & Whitelee onshore windfarms (ScottishPower Renewables)

In November 2020, ScottishPower Renewables and Siemens Gamesa Renewable Energy (SGRE) undertook a number of on-site trials at Dersalloch onshore windfarm to demonstrate converter capabilities which will enable services to tackle system scarcities - critical in a decarbonised energy system.

The project showed that a wind farm can perform the so-called ‘restoration service’ (formerly called Black Start) which is a procedure to restore power in the event of a major (full or partial) disruption of the transmission system. Black Start restoration is typically done by conventional synchronous power plants but it’s becoming evident that the future will need new technologies to step-up and provide these capabilities. Using Dersalloch 69MW operational windfarm located in Ayrshire, Scotland, both inertia (fast injection of active power within 100ms) and restoration capabilities were successfully proven in real life

scenarios through the utilisation of the grid forming algorithm. The project is believed to be a world-first utility of scale trial that aims to work as a stepping stone for unlocking zero-carbon service capabilities for systems with a high penetration of renewable energy.

Whitelee BESS could be considered also one of the first utility of scale co-located Battery Storage System being retrofitted in an operational windfarm. The Battery will be able to access the network by taking advantage of the existing windfarm infrastructure, helping SPR to optimise the grid connection in favour of system security and reliability. Whitelee BESS will then be able to provide critical system services, from a strategic position in the network in the Scottish Central Belt. Fast Frequency Response, Balancing, Constraints alleviation and Voltage Control will be some of these key services, that will position this BESS project as an exemplar for the future renewables energy reserve the system needs to tackle emerging challenges and scarcities.

supply and demand. Onshore wind farms can actively support system restoration on the network and even more so when they are twinning with battery storage to deliver grid support services which will support a fully decarbonised power system.

8. Industrial Flexibility and competitiveness in a low carbon world RenewableUK & the Association of Decentralised Energy, 2018
9. “La bataille de l’effacement fait rage”, L’Usine de l’Energie, April 2014

Onshore wind is a predictable power source and output forecasting has been significantly improved over the last decade to the point where National Grid can predict output 24 hours in advance with 94% accuracy.¹⁰ Furthermore, in the UK, wind energy is, on average, more available during the winter season, when electricity demand is higher, which will only grow in significance as heating becomes increasingly electrified.

Enabling the production of low-cost green hydrogen for further decarbonisation

The UK Government's support for green hydrogen in the Hydrogen Strategy is very welcome. As the strategy outlined, hydrogen will play an important role in the route to net zero. Alternatives to carbon-based fuels will be required across the energy system in electricity generation, buildings, industry, and heavy transportation. The possibility of producing hydrogen by a low or zero-carbon route and storing it at scale makes it a potentially valuable complement to electrification in reducing emissions from energy use to a very low level, cost-effectively, by 2050.

The potential economic benefits of onshore wind-produced hydrogen to the UK go beyond the provision of hydrogen at lowest cost. The sector will support the growth high-wage high-value jobs in hydrogen. As an illustrative example, BVGA modelling suggests that – should onshore wind support 1.7GW of the Government's targeted 5GW of low carbon hydrogen production by 2030 – this could support over 1,000 jobs in electrolyser manufacture, project development and wider component manufacture, and boost the value of this emerging industry by £1.4bn over this decade.

Using onshore wind to produce hydrogen has its own unique benefits, particularly in their wide geographical distribution and high load factors. Furthermore, the development of green hydrogen will support the management of the future energy system, providing long term storage and reducing the need for constraint.



Case study 1: Energia Group & Translink's hydrogen-powered buses enter service in Northern Ireland

The first hydrogen powered double decker buses entered service in Northern Ireland in December 2020 as part of the Metro service in Belfast. The three buses - built by Wrightbus in Ballymena - emit only water and will be 100% powered by wind energy.

Case study 2: 'Green Hydrogen for Glasgow'

'Green Hydrogen for Glasgow' has brought together skills from industry leaders ScottishPower, ITM Power and BOC and is the first project to be built as part of the 'Green Hydrogen for Scotland' partnership. Completed, the project at Whitelee onshore windfarm will be the UK's largest electrolyser, at 20MW, producing up to 8 tonnes of green hydrogen per day. This is roughly equivalent to fuelling over 550 buses to travel from Glasgow to Edinburgh and back again each day.

Policy Enhancement: Reforming Ofgem and investing in grid infrastructure to enable the development of 30GW of onshore wind

It is vital that BEIS follows up on the Government's commitment in the Energy White Paper to provide new strategic guidance to Ofgem through a Strategy and Policy Statement at the earliest opportunity. This should be a first step to changing its remit to take account of the new challenge of delivering net zero. This is required to ensure that key policy decisions, such as proactive investment in new grid infrastructure, can be made in the context of delivering the UK's net zero targets and minimising costs to future consumers, who will ultimately benefit from the roll out of lowest cost clean energy.

The existing charging arrangements for the use of the grid by transmission-connected electricity generators produce unpredictable and volatile variations in the annual charges for each year. These charges are already significantly higher for Scottish generators and the scale of the additional charges is expected to increase in future years, which will have a significant impact on investment decisions.

Ofgem is undertaking a series of reforms to electricity transmission and distribution network charging and access:

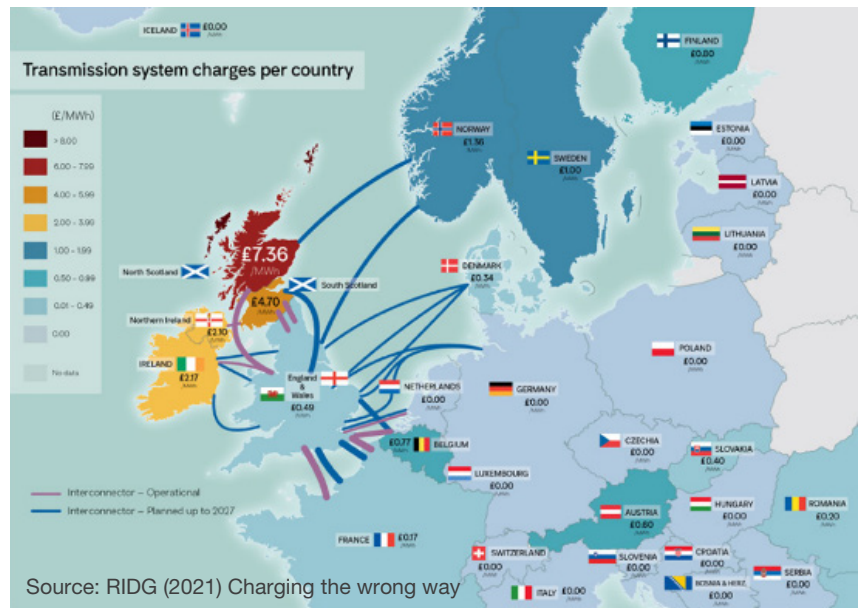
- The Targeted Charging Review - the proposals of which have been finalised.
- The Access and Forward-Looking Charges Review – which is still in progress.

10. <https://publications.parliament.uk/pa/cm201617/cmselect/cmenergy/267/26706.htm#footnote-169>

None of these reforms are currently addressing the ever-increasing impacts of transmission charging on some onshore wind projects (highlighted in the infographic below). However, we do welcome that Ofgem’s Access and Forward-Looking Charges “minded to” decision does include a proposal for a wider review of TNUoS charges to ensure that they are fit for purpose for delivering net-zero at least cost. Onshore wind projects need to be sited where the best wind resources are, which includes Scotland and other locations which are currently subject to higher transmission charging.

Reaching net zero emissions as fast as possible will require significant investment in our electricity infrastructure. We’re concerned that Ofgem is underestimating the scale and pace of investment needed, and this risks undermining the transition to net zero. Ofgem should be putting net zero at the centre of every decision it makes, not least because this will achieve decarbonisation at the lowest cost to consumers. We need a new approach to how we plan and invest in a smart, net zero grid.

It’s vital that Ofgem’s duties and responsibilities are firmly linked to achieving the UK’s legally-binding net zero target. We also recommend that a review of future onshore transmission is carried out, using the current review of future offshore transmission as a template. BEIS, Ofgem and National Grid should work together with stakeholders to determine what future onshore electricity infrastructure will be needed for a net zero emissions system and the policy and charging frameworks that will deliver this both efficiently and cost effectively.



Policy Enhancement: A grid-strategy for Wales

The proactive development of grid infrastructure is critical, not just for delivering 3.5GW of onshore wind in Wales by 2030, but ensuring the country capitalises on the potential for marine energy, fixed and floating offshore wind too.

Unfortunately, the current system for securing investment in grid infrastructure in Wales is stifling the development, as developers currently must put forward collective requests for substantial grid infrastructure, creating both a burden in finding collaboration and increasing the risk of developing a project proposal, as it relies on others.

RenewableUK welcomes Welsh Government’s announcement that it has secured the agreement of the energy networks operators in Wales and Ofgem to develop a ‘once in a century’ plan for energy networks in

Wales. This work needs to proceed swiftly and must engage other key industry actors, including onshore wind developers, to ensure the evidence base for strengthening energy networks properly reflect the potential economic benefits which could accrue to communities throughout Wales.

A programme of proactive, anticipatory, grid infrastructure development would facilitate the development of onshore wind in the parts of Wales with high wind resource. This will reduce the interdependency of projects, and ensure that renewable development and associated infrastructure are viewed as complimentary within planning policy.

Polling suggests that a majority of the Welsh public are “supportive of new power cables being built in your area to support the development of renewable energy”, at 63%, with only 10% opposed.

Overview

Policy enhancements to ensure onshore wind plays its role in delivering net zero at least cost:

- A UK-wide 30GW target set by UK Government, with associated targets of 20.4GW by 2030 set by Scottish Government, 3.5GW by 2030 set by Welsh Government and 2.5GW set by the Northern Ireland Assembly, coupled with

a UK Government commitment to annual CfD auctions for the technology – making clear the energy mix and the route to market for it.

- UK Government to provide new strategic guidance to Ofgem as set out in the Energy White Paper at the earliest opportunity, as a first step to changing its remit to take account of the new

challenge of delivering net zero and the need for proactive grid infrastructure development.

- Welsh Government should expedite its stated ambition to assess and plan for Wales’ future energy networks as swiftly as possible. This will be instrumental in facilitating the development of 2.2GW of onshore wind, and other renewable technologies.

Chapter 4:

Partnering with local communities

The UK Government rightly recognises the contribution onshore wind makes to communities around onshore wind farms - these benefits are 'over and above the wider economic energy security and environmental benefits that arise from these developments.'¹¹

Renewable energy infrastructure brings extensive benefits through community benefit funds; landowner payments supporting rural diversification; improvements to outdoor access and recreational facilities; habitat management plans to enhance local areas; local jobs, apprenticeships, skills training; business rates paid over the lifetime of the windfarm; inward investment in rural areas; and the provision of the cheapest form of electricity. Projects can also bring secondary benefits associated with their development such as improved infrastructure and support for specific industrial sectors, such as steel, and environmental improvement.

The positive partnership that industry has with communities is reflected in the support for onshore wind – which YouGov polling shows is just as strong amongst people who live within five miles of a wind farm as those who don't.¹²

Community benefit funds

Direct local benefit often takes the form of Community Benefit Funds and benefits-in-kind. Onshore wind companies have pioneered direct approaches that have supported social infrastructure and local community projects.

The industry is proud of the role it has played in supporting the UK through the difficulties caused by COVID-19, in large part by utilising community benefit funding. You can find a few examples of this in Annex 1.

Case study: Castlecraig Wind Farm's benefits to the local community (RES & NTR)

In 2018, Castlecraig Wind Farm (Co. Tyrone) realised the following economic benefits:

- Inward investment of £16 million across Northern Ireland and £6 million in the local area.
- The project will provide Fermanagh Omagh District Council with business rates of approximately £10.6 million over the project lifetime.
- The majority of RES's construction team and contractors were local;
 - Adman from Omagh undertook the civil construction works.
 - Stone was sourced from B.McCaffrey & Sons Ltd (in Ederney & Drumquin) and Colton Quarries (in Lack).
 - Concrete for the foundation bases was sourced from Tracey Concrete in Enniskillen.
 - Other local companies contracted included Mar-Train Heavy Haulage, Bartons Industrial Services and Omexom (the latter two from Belfast).
- Community Benefit funding of £3.12 million (£125,000 pa), including a Local Electricity Discount Scheme (LEDS) offering an annual discount on the electricity bills of those properties closest to the wind farm. The LEDS is open to all residential, business and community buildings (including schools, places of worship and village halls) within a set distance and the £200 discount is paid directly to the electricity supplier.

Case Study: SSE Renewables; Fort Augustus and Glenmoriston Community Company

SSE Renewables operates three community benefit funds associated with its onshore wind farms in the Great Glen area. This includes the Dunmaglass, Bhlaraidh and Stronelairg onshore wind farms. Over their lifetimes, they will award more than £63m. These funds are split between local communities near to the projects, and the Sustainable Development Fund which supports transformation and growth in the wider Highland region.

Following extensive consultation, the Fort Augustus and Glenmoriston Community Company identified a need for affordable homes for local people, and have now taken ownership of land and developed an ambitious proposal for eight flats and four houses. Once completed, the project will enable young people to remain in the local area whilst providing a stable environment for families to thrive.

Case study: Bad á Cheò Onshore Wind farm Education and Training fund (RWE)

Bad á Cheò Onshore Wind farm Education and Training fund is open to residents living closest to the wind farm and aims to build skills and increase job opportunities. It provides bursaries to local people to access training and education opportunities that better equip them with the range of skills required to enter into, or retain, employment in key sectors. 21 local people have received funding totalling over £34,000 towards courses as diverse as sports massage, deer stalking, welding inspection and accountancy.

11. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/363405/FINAL_-_Community_Benefits_Guidance.pdf

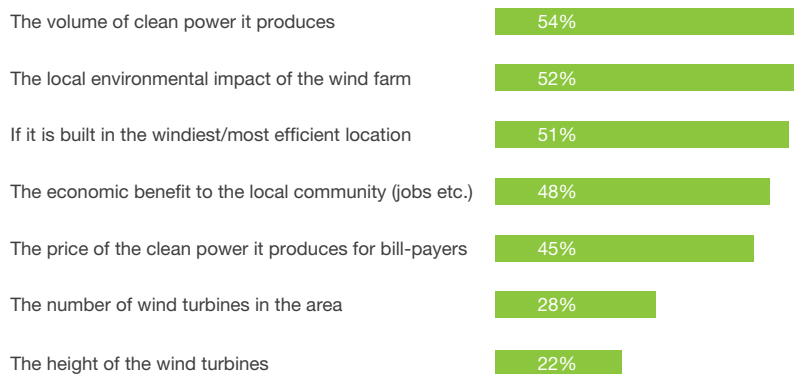
12. <https://www.renewableuk.com/news/565686/YouGov-poll-shows-public-want-renewables-to-be-at-the-top-of-Governments-plans-for-green-growth.htm>

Environmental Benefits

The interaction of wind farms with the natural environment around them is a key consideration for developers when deciding to take forward a wind farm. We know that, when you ask the public what considerations they would prioritise when deciding if a wind farm should be built, the efficiency of the location, how much wind it generates, and environmental considerations are paramount.

Each wind farm will conduct an extensive environmental impact assessment, shared with the relevant statutory bodies, prior to a planning application.

Figure 8: Q5 Rank 1+2+3. When considering if an onshore wind farm should be built, please rank each of the following considerations in order of their importance to you; with Rank 1 being the most important, Rank 2 next and so on



BASE: All respondents Unweighted Total: 2030 | Source: Survation Polling, July 2021

Case study of Environmental Benefits; ScottishPower Renewable's Mark Hill Windfarm

- ScottishPower Renewable's (SPR's) Mark Hill Windfarm is a 28-turbine project located in South Ayrshire, Scotland, which became operational in 2012.
- It was developed on a former forestry plantation and is being restored to native woodland and peatland habitats. The plantation was clear-felled during construction, following which 192ha were planted with native woodland species. These native woodland replanting areas are on the steeper slopes at the site and are interspersed with almost 800ha peatland which would have comprised blanket bog, flush, and heath habitats prior to afforestation.
- The areas of deep peat are being restored to blanket bog using techniques developed by SPR, resulting in an impressive natural mosaic of native woodland and peatland habitats along with opening up of the existing lochans on site. These wetlands are now home to resident otters and water voles, with hen harriers also regularly seen foraging on the site along with a significant increase in



other moorland species due to SPR's habitat restoration work.

- SPR's innovative and effective peatland restoration techniques have been recognised by the International Union for Conservation of Nature in their Peatlands and Forestry report.¹³

Case study of Environmental Benefits; Brechfa Forest West Wind Farm's support for Pine Martens

- In 2016, RWE Renewables' Brechfa Forest West Wind Farm

team erected 10 Pine Marten den boxes, with several associated cameras, deep in the heart of Brechfa Forest that is managed by Natural Resources Wales.

- Sightings of rare Pine Marten have been recorded in Carmarthenshire's Brechfa Forest for the first time in over 20 years, after the Pine Marten had been hunted almost to the point of extinction in the late 19th century.

13. https://www.iucn-uk-peatlandprogramme.org/sites/default/files/2020-01/Col%20Forestry%20and%20Peatlands_reduced%20size.pdf

Further case studies of environmental benefit: RES

- At Kelburn Wind Farm in North Ayrshire, the habitat enhancement plan included moorland management, drain blocking, forest felling, planting native broad-leaf tree species and an enhanced programme of licensed predator control. The regeneration of the heather moorland at Kelburn has seen the reintroduction of Black Grouse, and RES’ new access measures to the southern part of the Clyde Muirshiel Regional Park has made the area more accessible for walkers and cyclists to enjoy.
- The ecological monitoring scheme at Den Brook Wind Farm included provision of bat boxes to encourage roosting. The latest reporting shows that, two years on since being installed, the boxes on site are now achieving very good occupancy levels and may be helping to strengthen the population of certain bat species.

- During development of Jacks Lane Wind Farm RES worked with ornithology consultants to design a refuge area to attract the local pinkfooted geese away from the turbines to safe new habitat. The refuge ensures their favoured feeding crops are closer to the birds’ night nest, reducing their travel time and subsequent risks. Such has been the success of the new goose refuge that, since the completion of the wind farm, an average of 7,200 birds have been drawn to the new area, compared to 1,420 prior to the refuge being established.
- **Wryde Croft Wind Farm** is part of a working arable farm in Cambridgeshire, with 13 turbines capable of generating enough to power more than 15,000 UK homes. Before opening in 2016, the site had experienced a 97 per cent decline in meadows and species-rich lowland grassland over the last 50 years. Between 2014 and 2019, a consultant provided landscape and ecology advice as part of a strategic mitigation and

enhancement plan. RES took the recommendations and set out to reintroduce indigenous wildflower meadows on seven hectares of large soil bunds left from turbine foundation excavations, and on three hectares of grassland alongside new access tracks. The nectar-rich meadows – which include oxeye daisy, knapweeds, wild carrot, lady’s bedstraw and meadow buttercup – now enhance biodiversity, benefiting bees and other insects, and providing seeds for farmland birds. Of 51 bird species recorded before the wind farm was built, 23 have increased by more than 10 per cent – including declining species such as skylark, reed bunting and yellow wagtail.

Our commitment to environmental sustainability stretches beyond the areas around our wind farms, into our supply chain and approach to the full life cycle of our turbines. 85-90% of a wind turbine can be easily recycled. However, the industry has launched a series of initiatives to ensure that the blades – which have proved more difficult due to composites of resins and fibres used in their production – can also be recycled.

Listening, adapting, and maximising local support

Visual impact is thoroughly considered from the very start of every wind farm project. Across the different parts of the UK, Government guidelines set a minimum for how developers must engage with communities in the planning process. Most renewable energy developers go beyond these minimum guidelines, working with communities to ensure that the relevant people are informed

and able to be involved in the design/ determination process.

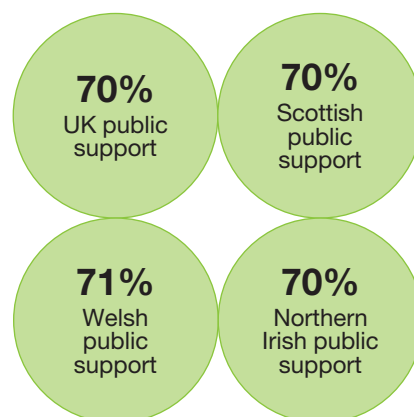
Onshore wind developers are increasingly engaging communities earlier in the development process to ensure local people feel they have been involved in the evolution of the project. Multi-stage consultations allow local residents and other stakeholders to see how a scheme has been revised to address concerns raised, and these are standard practice for onshore wind projects.

These measures, combined with vast economic opportunities for local communities and supply chains, may be the reason why onshore wind remains just as popular in constituencies where turbines have already been constructed.¹⁴

Policy Enhancement: A balanced and reasonable planning system

In every part of the UK, the majority of the public support the statement that:

“the local planning system should broadly encourage the building of renewable energy developments like onshore wind”.



Source: Survation polling, July 2021

14. <https://www.cen.uk.com/polling> and <https://www.renewableuk.com/news/565686/YouGov-poll-shows-public-want-renewables-to-be-at-the-top-of-Governments-plans-for-green-growth.htm>

Case studies into blade recycling technology

Turbine manufacturer Vestas Wind Systems (VWS based in Denmark) unveiled new technology in May 2021 which enables wind turbine blades to be fully recycled. The new technology will be a significant milestone in enabling a future where landfill is no longer required in blade decommissioning. Using the new technology the glass or carbon fibre is separated from the resin and then chemicals further separate the resin into base materials, that are "similar to virgin materials" that can then be used for construction of new blades. The project is a cooperation between Vestas; chemical producer Olin Corporation which produces resin for turbine blades; the Danish Technological Institute, an independent research and technology institute; and

Denmark's Aarhus University. The project aims to develop the technology for industrial scale production within three years and also sees potential for the technology to be used for airplane and car components.

Research on blade recycling is also being undertaken by the Offshore Renewable Energy Catapult and others. A report was published in March 2021 "Sustainable Decommissioning – Wind Turbine Blade Recycling" by the Energy Transition Alliance, a partnership between ORE Catapult and the Oil and Gas Technology Centre in Aberdeen, with input from experts at the National Composites Centre and the University of Leeds. ORE Catapult has targeted an at-scale demonstration of blade recycling in the UK within the next five

years through both the ETA Blade Recycling Project and a new joint industry project Circular Economy in the Wind Sector (CEWS).

In another initiative, blades could be recycled under plans being developed by Aker Offshore Wind, Aker Horizons and the University of Strathclyde. They have signed a memorandum of understanding which aims to drive the development of recovery processes for used glass-fibre products. Glass-reinforced polymer used in wind turbine blades has proved hard to break down and recycle. The organisations will scale-up and commercialise a process developed and tested at lab scale by the University of Strathclyde for thermal recovery and post-treatment of glass fibre to produce near-virgin quality glass fibres.

Planning policy is a devolved matter, therefore, each of the nations of the UK has its own planning framework to correspond with varying priorities. For example, focusing on net zero, Wales and Scotland have different net zero targets to England – as well as varying targets set by each Government.¹⁵ Nonetheless, it is vital that across the UK there are planning policies in place that support onshore wind development in line with the level of development required to achieve net zero.

Finally, planning policy should reflect the popularity of onshore wind amongst the UK public. Support has increased for onshore wind, with 33% more people supporting the development of onshore wind now compared to five years ago, and the BEIS Public Attitudes Tracker consistently shows a sizeable majority supporting onshore development.¹⁶ Polling shows the UK public is far more in favour of developing onshore wind farms given the majority people support it (82% support) as opposed to switching to a more punitive system, like that currently in place in England, where wind farms can be blocked by as little as one person objecting in the community (a policy only 9% of the public support).¹⁷

The need for urgent planning reform is most acute in Scotland and Northern Ireland. Although there is a substantial pipeline of onshore wind projects in the planning system in Scotland, without a timely and efficient consenting process, which also delivers commercially viable projects at scale using modern standard turbines, a significant proportion of this pipeline will not, under current conditions be constructed in time to ensure Scotland can meet its commitment to net zero. We welcome the Scottish Government's commitment to "Rebalancing the planning system so that climate change is a guiding principle for all plans and decisions". To ensure this commitment is delivered, the National Planning Framework 4 should ensure that in the determination of all proposals for renewable energy development special regard shall be had to the urgent need to combat the Climate Emergency and to achieve net zero by 2045 and earlier interim targets. This means that planning permission should only be refused when this need is clearly and demonstrably outweighed by environmental impacts which are of more than local importance.

The planning system in Northern Ireland has one of the longest lead times in the UK – twice as long as in England - and restrictive Local Development Plans, are limiting use of modern more powerful turbines. This is restricting otherwise competitive Irish projects, developing projects at a slower rate than that required for net zero, and increasing the cost of power for billpayers. The Northern Ireland Executive needs to utilise the current planning review to set a new framework to support renewable energy development.

Policy enhancement (within wider planning reform): Enabling the development of larger, modern, more cost-efficient turbines

As in offshore wind, the latest onshore wind turbines are larger than their predecessors, considerably more powerful and far more cost-effective.

Current planning and policy frameworks restrict the development of modern larger turbines despite their clear benefits. As we will see through the repowering of existing wind farms, you need fewer modern wind turbines to generate the equivalent power of earlier models.

15. Committee on Climate Change, Net Zero report: technical annex, March 2019

16. BEIS Public Attitudes Tracker: Wave 33, May 2020 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/884028/BEIS_PAT_W33_-_Key_findings_Final_.pdf

17. Survation polling, July 2021

Case study in community engagement: EDF Renewables

Many developers choose to engage with local communities through their Community Liaison Groups (CLG), which include local politicians, residents and business owners. EDF invite CLG members to visit sites during construction, allowing local residents to see how they construct and manage projects. Residents are given the opportunity to gain a better understanding of the turbines and, following an expression of interest, EDF thoroughly consider the visual impact of their projects. They use a variety of mediums to help local residents visualise the future site:

- Photomontages, which show photos of wind turbines from specific viewpoints (agreed with LPA)
- 3d Computer Models, which allow a scheme to be viewed from any point in the study area
- Augmented Reality Systems, which allow a user to see a proposed turbine through the camera of a tablet or mobile device.

Second case study in community engagement: RES

RES believes that open, effective and ongoing community engagement is essential in delivering renewable energy capacity to meet the UK's energy needs. At all their projects they

seek to meet and exceed national, local and industry guidance, utilising techniques such as:

- Face-to-face meetings with community groups, local political representatives and individual residents, particularly nearest neighbours, and businesses.
- Exhibitions displaying information and making RES staff available to answer questions and receive feedback on the wind farm's design, held in accessible locations at times that provide all sections of the community with the opportunity to attend.
- Newsletters and letters to residents providing information on proposals and contact details for queries, often delivered through 'door knocking' sessions.
- Websites created for each proposal, providing information on the proposal, consultation and eventual planning application, construction timetables, delivery routes, etc and providing contact details.
- Publication of information through local print and broadcast media - including via press releases and paid advertising.
- Establishment of 'Community Liaison Groups' (CLGs), comprising local residents and

representatives, to act as a forum for discussions about proposals and as a point of contact for information within the communities themselves. RES staff attend CLG meetings and cover administration costs, including venue hire, provision of secretariat and logistical support.

- Provision of a named RES community contact and project manager with postal, telephone and email details. RES has a dedicated community relations team, which provide full support to its planning, development, construction and operations team throughout the lifetime of a project.
- Measures to ensure that information is accessible to all – including the provision of digital or paper copies, braille, audio, large text and translations where necessary.
- During COVID-19 they have continued with engagement programmes on development projects, turning to technology to host virtual exhibitions. They have found these have been a positive experience that have enhanced the accessibility of their engagement. They see this as positive way of working and an approach that needs to be considered for engagement with developments going forward.

As modern turbines are more efficient than earlier models, they generate power at lower cost, further driving down consumer bills. In addition, manufacturers are steadily phasing out older models in favour of more modern turbine designs. Increasingly, this means that a "like for like" replacement of older wind turbines with new is simply not possible. As a result, the choice is becoming one of either repowering with a new, larger turbine or being forced to abandon the

existing wind farm, thereby losing a valuable low carbon energy resource. Creating a policy environment which embraces the potential of a more cost-efficient wind farm – for example, by addressing the barriers to consenting projects - will better benefit consumer bills in the long run. Polling suggests that the UK public is very positive about the prospect of more modern turbines – 68% of the public are supportive of "the building of modern onshore wind farms,

which are taller and produce energy at a lower cost".¹⁸ The UK public also ranked 'the height of the wind turbines' as much less of a priority for considering where to build a wind farm, behind it's benefit to bill payers, efficiency of its location, the jobs it produces and the harmonisation of the wind farm with the natural environment around it.¹⁹

15. Committee on Climate Change, Net Zero report: technical annex, March 2019

16. BEIS Public Attitudes Tracker: Wave 33, May 2020 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/884028/BEIS_PAT_W33_-_Key_findings_Final_.pdf

17. Survation polling, July 2021

18. Survation polling, July 2021

19. Ibid

Case study: Whitelee – Britain’s most popular wind farm (ScottishPower Renewables)

Since opening in 2009, the Whitelee Visitor Centre (WVC) has proven to be a huge success, welcoming over 818,000 visitors so far. The WVC is managed by Glasgow Science Centre and offers a free hands-on interactive exhibition, café, shower facilities, bike shed, car parking and electric vehicle charging points. Visitors can also book a, electric bus tour to explore the windfarm, learn more about the history and ecology of the site and get close to the wind turbines.

The WVC offers an extensive education programme, with curriculum-based sessions from nursery level right through to further education available for schools to book throughout the term and various free craft sessions scheduled for families



during the school holidays. In a typical year around 5,000 pupils and 750 teachers would visit the centre to attend education workshops. An estimated 200,000 people a year visit Whitelee for recreational activities such as walking, running or cycling. Even

during the COVID lockdowns in 2020/21 when the WVC was closed, the numbers of local visitors to site increased demonstrating that many people will choose to spend time on a windfarm for recreation.

Policy enhancement (within wider planning reform): Building on the onshore wind development we have today by ‘repowering’ wind farms

The UK’s current onshore operational capacity stands at 13.7GW, powering the equivalent of nearly 8 million homes each year.²⁰ However, by 2040, over 8GW of our existing onshore wind capacity – enough to power more than 5 million homes – will be past their expected lifespan.²¹ With supportive planning policy across England, Scotland, Wales and Northern Ireland we can ensure that these wind farms are ‘repowered’, making the most of the wind farms the UK already has and the opportunity for low-cost power.

This prospect of ‘replacing old wind farms with new’ is far more popular amongst the UK public (with 73% supportive) than the prospect of ‘not replacing’ them (which only 16% support). Critically, 69% of people who identify as living within 5 miles of a wind farm support repowering. People want to make the most of

sites demonstrably appropriate for wind farms. We’re keen to utilise these areas too and, where appropriate and opportune, some of the spaces around them.

We would encourage policy makers to grasp the opportunity to upgrade and replace old turbines with the latest technology. Through repowering, we have the potential to increase the amount of power we get from these onshore wind sites – and do it with fewer turbines than we have now. To date, 19 wind farms projects have been repowered and increasing power capacity by 160%, using just two-thirds the number of turbines.²² We have the potential to do more, with less.

In contrast, without enabling policies in planning (for example to expand the time developers have planning permission to operate a wind farm), coupled with regular annual Contract for Difference Auctions, we are predicted to lose around 5.5GW of our capacity by 2040, worsening the energy gap and pushing our

carbon targets even further out of reach. Given this, we should have a presumption in favour of repowering and life extension of existing wind farms, with supporting policy guidance, woven into upcoming planning reforms, in a consistent manner across all nations.

Policy enhancement: mitigating aviation radar to increase the pipeline of potential projects

A considerable volume of viable onshore wind sites across the UK are impacted by restrictive requirements for radar mitigation, despite the readiness of wind farm compliant air surveillance radar which would harmonise wind development and aviation radar. In 2019 alone 3GW of potential onshore wind projects were met with civil airport unresolved objections/undischarged planning conditions.

Further, even where mitigation of existing surveillance infrastructure has been identified, developers find themselves facing demands for

20. <https://www.renewableuk.com/general/custom.asp?page=UKWEDhome>

21. RenewableUK April 2019 Onshore Wind: The UK’s next generation

22. RenewableUK April 2019 Onshore Wind: The UK’s next generation

Case Study: Carland Cross Repowered & Hybrid site (Scottish Power Renewables)²³

ScottishPower Renewables (SPR) operated Carland Cross 6MW onshore wind farm for 21 years, since it was developed and built by RES in Cornwall in 1992. It was repowered in 2013, replacing the fifteen original turbines with ten Gamesa turbines, five times more powerful than their original counterparts with a capacity of 2MW each. Installing the new turbines allowed SPR to increase the site capacity from 6MW to 20MW. From producing clean energy for 3,300 homes, it now powers 12,000.

Complementing the existing windfarm, construction of a 10,000 panel solar farm at Carland Cross has begun, with the first of the panels installed by Prime Minister Boris Johnson in June 2021. 1MW of battery storage will also be constructed at the site.



Case Study: Caton Moor Wind Farm (Thrive Renewables)

Thrive Renewables invested in Caton Moor in 2006 and immediately undertook a "repowering" exercise, replacing the existing 10 turbines with just 8 more modern and efficient machines. With two fewer turbines and only a small increase in the size of each, output from the site was increased seven-fold to

47 million units of electricity per annum.

At the same time Thrive were able to make a financial contribution to the erection of a small wind turbine at the local Quernmore Primary School. They often welcome schools and other groups onto the site to learn about renewables and wind energy.

contribution to mitigations deployed which far exceed the cost of the actual mitigation deployed.

To address this, the Department for Transport should revisit the aviation and policy strategy, so that the Civil Aviation Authority is guided to set a new regulatory and policy framework in support of the UK's onshore and offshore wind development targets, by acknowledging that wind turbines are now part of the baseline built

environment for which aviation stakeholders are responsible when acquiring future radar systems and by ensuring that any mitigation costs are levied on a transparent, reasonable cost recovery basis. Furthermore, we encourage the Civil Aviation Authority's review of the regulatory framework around aviation lighting as it will help to speed up planning applications where night time aviation lighting is causing planning delays and objections from locals/consultees.

Addressing these aviation radar issues is a commercial opportunity for the UK, as well as an enabling policy measure. If the UK remains at the forefront of developing innovative aviation systems and services for the offshore wind sector, we can export these to the growing global offshore wind market. This includes aerial drone technology²⁴ (including autonomous 'Beyond Visual Line of Sight' operations) and innovative CNS systems.²⁵

Overview

Policy enhancements to enable development and build on local partnerships

- Planning policies should be put in place that support onshore wind development in line with the level of development required to achieve net zero, including:
 - Flexibility to develop more modern and cost-efficient turbines

- A presumption in favour of repowering and life extension of existing wind farms
- The UK Department for Transport should revisit the aviation and policy strategy, so that the Civil Aviation Authority is guided to set a new regulatory and policy framework in support of the UK's onshore wind development targets.

23. RenewableUK April 2019 Onshore Wind: The UK's next generation

24. Examples of innovative UK companies using drones in cross-cutting sectors including offshore wind are Cyberhawk and TexoDrones (including BVLOS in UK);

Siemens-Gamesa and Orsted are examples of international companies scoping the integrated use of drones to support UK offshore wind projects.

25. Aveillant as described above – as well as the PBN, ATM management and electronic conspicuity systems outlined in Aviation 2050.

Chapter 5: Part of the UK's global climate leadership and place in the world beyond COP26

The UK taking a confident approach to onshore wind development would send a very significant positive message to the world ahead of COP26. Even with the rising success of offshore wind globally, which is set to increase as the costs of floating wind continue to fall, the majority of wind development in the world has been and will continue to be in onshore wind.

The potential for the UK to secure further global commitment to the development of low-cost onshore wind is vast. For example, according to a report by World Bank-IFC dated

September 2020, Africa has enough onshore wind potential alone to meet the continent's electricity demand 250 times over.²⁶ While the continent is endowed with 59,000GW of wind power potential, only 5.5GW is so far installed. As COP26 President and 'the Saudi Arabia of wind', the commitments we make to onshore wind do influence the ambitions of the rest of the world.

The International Energy Agency's recent 'Net Zero by 2050' roadmap for the global energy sector outlined a need for 8,264GW of wind development by 2050.²⁷ But it's

important to note that the annual capacity additions of onshore wind are expected to continue to outstrip offshore wind through to 2050.

If Government seizes the opportunity to work with industry to grow the onshore wind supply chain, we can ensure that the UK maximises the export opportunity of the global market expansion it simultaneously leads through this commitment to 30GW of development by 2030.

Figure 9: Key deployment milestones for renewables

Sector	2020	2030	2050
Electricity sector			
Renewables share in generation	29%	61%	88%
Annual capacity additions (GW): Total solar PV	134	630	630
Total wind	114	390	350
– of which: Offshore wind	5	80	70
Dispatchable renewables	31	120	90
End-uses sectors			
Renewable share in TFC	5%	12%	19%
Households with rooftop solar PV (million)	25	100	240
Share of solar thermal and geothermal in buildings	2%	5%	12%
Share of solar thermal and geothermal in industry final consumption	0%	1%	2%

Note: TFC = total final consumption.

Source: IEA 'Net Zero by 2050' report, 2021

Note: figures refer to GW of global wind installation

26. Analysis by Everose commissioned by the World Bank Group - <https://gwec.net/exploring-africas-untapped-wind-potential/#:~:text=A%20new%20study%20for%20IFC,electricity%20demands%20250%20times%20over>

27. <https://www.iea.org/data-and-statistics/data-product/net-zero-by-2050-scenario>

“The UK, as one of the leading developed nations, has an opportunity to lead by example by demonstrating ambition and commitment to accelerate decarbonisation in order to meet net zero by 2050 target. There’s no better way to achieve this than setting targets for onshore wind power deployment. This is important for South Africa, as it provides a great point of reference for our own advocacy efforts to demonstrate that our push for accelerated wind deployment is part of a global scale initiative led by developed nations.”

Ntombifuthi Ntuli, CEO, South African Wind Energy Association

“Holding the COP26 Presidency has put the UK’s actions centre stage in all conversations about energy decarbonisation. The Government should follow the CCC’s advice and set a 2030 target for onshore wind. This would send a clear message of confidence in the technology to the wide range of countries who, due to their geographies, cannot follow our lead in offshore wind, and whose path to decarbonisation rests on onshore wind.”

Rebecca Williams, Director of COP26, Global Wind Energy Council

“Brazil is privileged to have many renewable resources for energy production, so much so that wind energy is already the second source of our electricity matrix and hydro is the first. To reach the goal of net zero, however, we need more speed in the adoption of sources such as wind, not only in Brazil, but in Latin America as a whole. In this scenario where we all need to fight for the planet together, the examples of some countries are very important when they, for example, set their own target for wind energy. And I believe that’s the case for the UK, especially in this year that the country has the crucial role of being President of COP. It’s a moment to lead by example and setting a target is a good decision to show other countries the way to go.”

Elbia Gannoum, CEO, ABEEólica (Associação Brasileira de Energia Eólica)

“The UK’s ambition and leadership in offshore wind are creating thousands of new jobs and transforming once neglected communities. Especially now ahead of COP26 it makes perfect sense for the UK to start expanding onshore wind again. Onshore wind is the cheapest form of electricity in the British Isles. It’ll reduce consumer energy bills and brings jobs and income to rural communities”

Giles Dickson, CEO, WindEurope

Overview

Our offer to Government

The onshore wind industry is as determined to make COP26 a success as the COP26 President. We would ensure that - through industry campaign groups like Global Wind Energy Coalition for COP26 and our own engagement with Governments across the world – we will amplify the commitments made by UK Governments to onshore wind to leverage other nations to increase their ambitions.

Chapter 6: Table of policy enhancements required from each Government to achieve 30GW of development by 2030

Additional info

Policy enhancement	What is the policy challenge? (What are the impacts, why does it need action?)	Recommendations to solve the challenge	Lead	Supporting role	Target date
2030 onshore wind targets	Despite continued onshore wind development, supported by new Contract for Difference auctions, there is no clarity for developers or public bodies as to the volumes of wind development planned in each region to support net zero – reducing investor confidence and hindering strategic planning and policy development.	<p>Each Government should publicly establish 2030 targets for onshore wind development ahead of COP26:</p> <ul style="list-style-type: none"> · UK Government should commit to an overarching target of 30GW suggested by the Climate Change Committee, with additional commitments to annual CfD auctions to deliver this volume · Scottish Government should commit to a target of 20.4GW in the upcoming onshore wind policy statement. · The Northern Ireland Executive should commit to the 2.5GW target recommended by SONI. · Welsh Government should commit to a target of 3.5GW. 	BEIS, Scottish Gov, Welsh Gov, NI Executive		2021
Scottish Planning Reform	<p>Across the UK, we are currently consenting less than half of the annual onshore wind capacity needed to achieve net zero – RenewableUK Project Intelligence suggests we would fall 12.55GW short by 2030.</p> <p>We need a timely and efficient consenting process, which also delivers commercially viable projects at scale using modern standard turbines.</p>	<p>Scottish Government need to rapidly and substantially reform how the planning system operates.</p> <p>We would recommend they bring forward measures within National Planning Framework 4, We welcome the Scottish Government’s commitment to “Rebalancing the planning system so that climate change is a guiding principle for all plans and decisions”. To ensure this commitment is delivered, the National Planning Framework 4 should ensure that in the determination of all proposals for renewable energy development special regard shall be had to the urgent need to combat the Climate Emergency and to achieve net zero by 2045 and earlier interim targets. This means that planning permission should only be refused when this need is clearly and demonstrably outweighed by environmental impacts which are of more than local importance.</p>	Scottish Government		2021

Additional info

Policy enhancement	What is the policy challenge? (What are the impacts, why does it need action?)	Recommendations to solve the challenge	Lead	Supporting role	Target date
A strategy for grid development in Wales	The current system for securing investment in grid infrastructure in Wales is stifling the development of the onshore wind required to achieve net zero in Wales and the UK. Pessimistic analysis suggests around 0.7GW of the 2.2GW new development needed by 2030 will be developed as a result. It will also harm Wales' prospects to capitalise on the potential of marine energy, including FLOW. Developers have to develop collective requests for substantial grid infrastructure, creating both a burden in finding collaboration and increasing the risk of developing a project proposal, as it relies on others.	RenewableUK welcomes Welsh Government's announcement that it has secured the agreement of the energy networks operators in Wales and Ofgem to develop a 'once in a century' plan for energy networks in Wales. This work needs to proceed swiftly and must engage other key industry actors, including onshore wind developers, to ensure the evidence base for strengthening energy networks properly reflect the potential economic benefits which could accrue to communities throughout Wales. A programme of proactive, anticipatory, grid infrastructure development would facilitate the development of onshore wind in the parts of Wales with high wind resource. This will reduce the interdependency of projects, and ensure that renewable development and associated infrastructure are viewed as complimentary within planning policy.	Welsh Government	National Grid; Welsh DNOs; Ofgem	2021/22
Ofgem reform	Without a focus on net zero within its remit, Ofgem continues to focus on a narrow view of consumer benefit, to the detriment of net zero delivery and future consumers. As a result, they've proposed network charging reforms which dampen investment in renewable energy by increasing the cost of generation by £5-10 per KW each year. Restricted as they are, Ofgem aren't able to take forward the anticipatory grid investment required to facilitate the development of renewables needed for net zero.	The Energy White Paper committed to "set out our vision for energy as a guide to Ofgem, by consulting in 2021 on a Strategy and Policy Statement for the regulator". This needs to include a strong focus on delivering net zero, and should be brought forward as soon as possible, followed by an adaption in Ofgem's remit to include the delivery of net zero.	BEIS; Ofgem	National Grid ESO; Transmission Companies	2021
Northern Irish Planning Reform	The planning system in Northern Ireland currently has one of the longest lead times in the UK – twice as long as in England - and restrictive Local Development Plans are limiting the use of modern more powerful turbines. This is restricting otherwise competitive Irish projects, slowing the pace of development away from the speed required for net zero, and increasing the cost of power for billpayers.	The Northern Ireland Executive needs to utilise the current planning review to set a new framework to support renewable energy development at pace, including enabling flexibility for communities to adopt larger more modern turbines.	Northern Ireland Executive		2022

Additional info

Policy enhancement	What is the policy challenge? (What are the impacts, why does it need action?)	Recommendations to solve the challenge	Lead	Supporting role	Target date
Reform of Northern Ireland's Utility Regulator	Northern Ireland's utility regulator is often very slow to release funding for enabling infrastructure to facilitate the development of onshore wind. There is a need to revisit their remit to ensure that net zero has greater consideration.	The Northern Ireland Executive should revise the remit of the Utility Regulator to clarify its duty to facilitate the delivery of net zero, at the earliest opportunity. This will ensure that the regulator prioritises the delivery of net zero within the policy environment it governs and grid infrastructure it develops.	Northern Ireland Executive; Utility Regulator	SONI	2022
Repowering and life extension facilitation	To secure enough low-cost power capacity to meet our carbon targets, new onshore wind turbines will be needed to replace older turbines at relevant wind power sites, known as 'repowering', as well as life extensions to existing operational windfarms.	Building on the planning recommendations above, a presumption in favour of repowering and life extension of existing wind farms should be woven into upcoming planning reforms. in a consistent manner across all nations. This should be accompanied by supporting policy guidance setting out how the presumption should operate in practice.	DHCLG; Scottish Government, Welsh Government	BEIS	2022
Aviation radar mitigation	A considerable volume of viable onshore wind sites across the UK are impacted by restrictive requirements for radar mitigation, despite the readiness of wind farm compliant air surveillance radar which would harmonise wind development and aviation radar. In 2019 alone 3GW of potential onshore wind projects were met with civil airport unresolved objections/ undischarged planning conditions.	The Department for Transport should revisit the aviation and policy strategy, so that the Civil Aviation Authority are guided to set a new regulatory and policy framework which ensures wind turbines are seen as a standard part of the UK landscape, and should be considered upfront in the procurement and management of all new aviation radar.	BEIS, DfT, MOD; Scottish Gov	CAA	Early 2020s
English Planning Reform	The planning system in England significantly restricts the development of onshore wind. New development requires unanimous local public support – which mean schemes supported by the vast majority of a community and agreed by regulatory bodies to be acceptable in terms of impact can be restricted by individuals or small unrepresentative groups who oppose them.	Although this is not a priority policy enhancement in the delivery of a 30GW target in the short term, given the low volumes of new onshore wind required in England, the UK Government should build on the statements made in the Planning White Paper, and ensure upcoming planning reforms act as an opportunity to establish a new framework for developing onshore wind, which does not block popular onshore wind development, and enables substantial 'repowering' of existing wind farms (as outlined above).	DHCLG	BEIS	2022

Annex 1: Case studies of industry supporting local communities through COVID-19

Communities have utilised the community benefit funds that we provide from our operational wind farms to address COVID-19 requirements within their community. This has included:

ScottishPower Renewables

North Carrick Community Benefit Company (Dersalloch Windfarm)

- As part of the support that local volunteers provided to vulnerable and isolating residents during lockdown, £41,000 was contributed towards the production of community brochures that were delivered through all doors within the eligible communities providing vouchers to purchase essential items at the local shop, post office and petrol station

Carrick Futures (Arecleoch and Mark Hill Windfarms)

- A £30,000 emergency fund was set up to support activities by local community organisations providing help to vulnerable people in difficulty because of the COVID-19 pandemic.
- Grants of between £500 – £3,000 were awarded to various initiatives within the eligible communities. This included £3,000 towards Ayrshire Cancer Support to contribute towards the increase in patient transport costs as well as an increase in demand for wellbeing and helpline services for those self-isolating. £2000 was awarded to RNLI Girvan to purchase disposable PPE and Children's Hospices Around Scotland (CHAS) received £900 to provide virtual classes and online support for families in Carrick.

SSE Renewables

- SSE Renewables operates 25 funds across Great Britain and Northern Ireland which benefit communities and charitable organisations in the areas close to its onshore renewable energy assets, mainly their onshore wind farms.
- In response to the COVID-19 crisis, these funds have distributed over £2m to support local communities such as through providing medical supplies and food delivery services.

RES

- RES, on behalf of The Renewables Infrastructure Group (TRIG), oversaw the distribution of a £500,000 Covid Fund to support the communities around 30 operational assets across the UK&I. To date the fund has supported over 60 organisations.

Hill of Towie Wind Farm, Moray

- Moray Wellbeing Hub CIC, based in Elgin, Scotland, were given a grant of £6,000 to roll-out a wellbeing programme across Keith and the surrounding area. The closure of schools, lack of contact with friends and suspension of sporting activities, due to the pandemic, has had a particularly damaging effect on children. This scheme aims to alleviate the psychological and physical problems through a range of initiatives including a parent empowerment group, recruitment and support of young champions/peer activists, CBT courses, family well-being walks and family wild swimming.

Vattenfall

Pen Y Cymoedd Wind Farm

- Pen Y Cymoedd Wind Farm continues to generate enough energy to power 15% of Welsh homes.
- The wind farm's emergency Covid funding aimed to protect cash flow and support new or diversified pandemic-related projects. During 2020, the Fund supported 40 businesses and community groups with Covid survival funding of £378,966, and a further 28 groups with funding of £193,898 for pandemic support related projects.

EDF

Fallago Rig Wind Farm

- The Fallago Rig wind farm, in the Lammermuir Hills in the Scottish Borders, consists of 48 turbines and has a capacity of 144 MW.
- The wind farm has an Environment Fund launched a special £100,000 covid recovery programme to help Borders residents recover from the impact of the pandemic and lockdown. Grants of between £500 and £5000 are available as a priority was given to small organisations with local impact such as the £30,000 which has gone to a charity called The Bridge to help improve local paths which have fallen into disrepair during the coronavirus crisis.

RWE

In 2020 wind farms operated by RWE in the UK invested over £4.3 million into local communities, through their community benefit funds. Wind farms operated by RWE invested over £640,000 into 212 community projects supporting the response to, and recovery, from COVID 19. For example,

- **Clocaenog Forest Wind Farm** Fund - £24,000 has been awarded to Clwydian Range Food and Drink Group over 1.5 years to fund a co-ordinator to assist businesses to recover from covid19 crisis
- **Brechfa Forest Onshore Wind Farm** has supported Skanda Vale Hospice with £260,000 over 5 years towards purchasing a bunk house which will allow them to greatly increase their services while reducing their dependence on grants. Skanda Vale operates the only predominantly volunteer run hospice in the UK.

Thrive Renewables

Over the course of 2020, Thrive Renewables gave over £39,000 to local organisations supporting the communities who host their renewable projects.

Kathleen from West Lothian Foodbank, near to **Drumduff wind farm**, said:

“Your offer almost made me cry as I've been in the warehouse most of the afternoon organising Christmas dinner packs & then a big rush on food packs before the end of the day. Thank you so much, this is amazing. As you can imagine this is our busiest time of year & that comes with extra costs, more fuel in the vans, more electricity & gas. So this makes a massive difference that we can use the money for the core costs.”

Community Wind Power (CWP)

CWP's COVID-19 crisis fund made £255,000 available to local communities in or near their seven operational wind farms. By working with their teams at BeGreen Dunbar and BeGreen Dalry, along with various community councils and the Dalry Parish Boundary Trust, Community Windpower were able to

ensure the funds were made available to organisations and charities who needed it most, for example:

Groundswell, Scotland

Groundswell Scotland is a mental health non-profit organisation run by Sally Harris in East Lothian. The charity provides Surf Therapy, in group and one-to-one sessions, with women who have suffered from domestic abuse and other mental health related problems. CWL through its COVID-19 crisis fund provided a much needed £2,500 in funding so Sally Harris could purchase PPE and COVID proof the organisation, making sure it could run through the pandemic. At a time where domestic abuse rose due to the lockdown restrictions, CWL did not hesitate to support such a brilliant organisation and promote a positive mental wellbeing in a challenging time for everybody.

Marie Curie North Ayrshire and East Lothian

Marie Curie were provided with £2,500 to help meet the increased demand for the service, which increased during the pandemic, at a time when fundraising halted. The funding helped provide critical PPE to the staff on the frontline and help provide another 100 hours of local nursing care.

Statkraft

Each year Statkraft projects deliver over £500,000 towards local community projects. When covid restrictions came into force, Statkraft contacted all administrators of its community funds to ensure they had flexibility to support valuable local initiatives set up in response to these trying times. This resulted in one Fund allocating a pot of short-term emergency funding that could provide immediate assistance to those in need, and a £17,000 grant towards salaries of the Moray Firth Credit Union to support members financially affected during lockdown.

Annex 2:

The capacity profile modelled for BVGA’s economic analysis

In the BVGA’s modelled scenario, rapid planning policy reform results in a greater proportion of projects constructed from the development pipeline and shorter timeframes for project development.

12.5GW of projects are installed from the existing pipeline between 2021-2030 at an average of 1.3GW per year. It should be noted that BVGA also modelled scenarios in which a greater proportion of the 30GW profile that were installed were not currently in the development pipeline, highlighting the opportunity to increase onshore wind development beyond 30GW by 2030 with additional projects in the latter half of the decade.

Figure 10

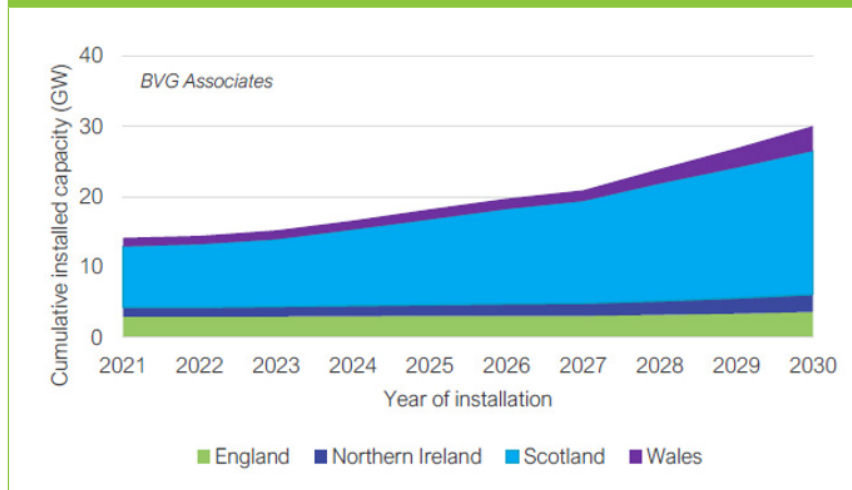
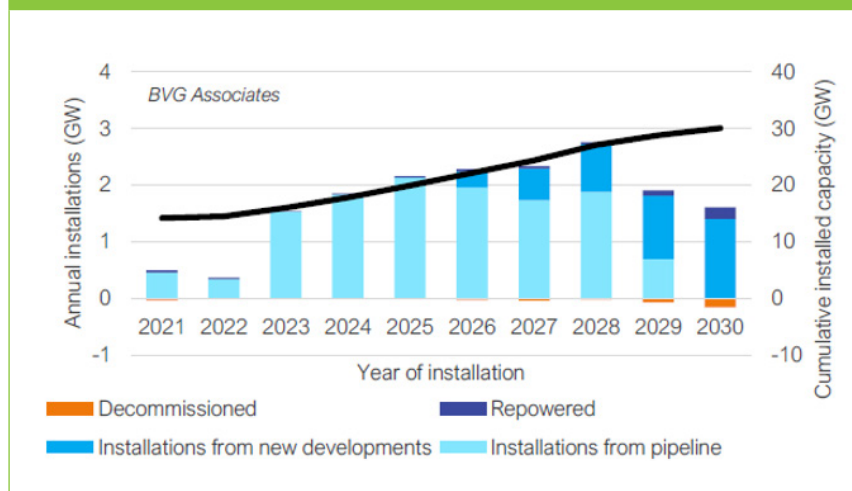


Figure 11





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**Our vision is for renewable energy to play
a leading role in powering the UK.**

RenewableUK is the country's leading renewable energy trade association, specialising in renewable energy systems, onshore wind, offshore wind, and wave & tidal energy. Formed in 1978, we have a large established corporate membership, ranging from small independent companies to large international corporations and manufacturers.

Our aim is to ensure increasing amounts of renewable electricity are generated sustainably by projects deployed across the UK, and to support our members win business in renewable markets in the UK and around the world. Our priority is to make sure that RenewableUK members are at the heart of delivering this opportunity. To do this we provide them with the highest possible quality services and information, supporting them in any way we can to do more business more effectively.