Department for Energy Security & Net Zero

ONSHORE WIND TASKFORCE STRATEGY

July 2025

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Ministerial Foreword

Britain continues to pay a heavy price for our exposure to the rollercoaster of international fossil fuel markets. Our mission to make Britain a clean energy superpower is about building the clean energy we need to take back control from the petrostates and dictators, so we can bring down bills for good.

As one of the cheapest and fastest to build sources of power we have, onshore wind will play a critical role in boosting our energy independence with clean power by 2030. The reality is that every turbine we build helps protect families, businesses and the public finances from future fossil fuel shocks.

That's why in our first 72 hours in office we lifted the onshore wind ban in England – in place for nine years under the previous government. And it's why last July we established the Onshore Wind Taskforce to bring government, industry and trade unions together to explore how we can radically accelerate deployment of this critical technology.

The Onshore Wind Taskforce Strategy is the outcome of that work. It sets out more than 40 steps government and industry will take to help deliver up to 29GW of onshore wind by 2030. That includes driving ambitious reforms to planning, grid connections, and routes to market, while building the supply chains and skilled workforce we need.

As part of this, we will consult on how permitted development rights can support the rollout of small-scale onshore wind and repowering. Great British Energy, our publicly owned energy company, will invest in and develop renewables projects. And we will work with the Ministry of Defence to take a mission-driven approach to addressing issues relating to wind turbines and defence infrastructure, which have slowed down deployment in the past.

Our mission is about generating the jobs and growth Britain needs, not just the power – with a muscular industrial policy that creates skilled, well-paid jobs for engineers, mechanics, welders and electricians across the country. The onshore wind industry already supports around 18,000 jobs and generates £191m of exports a year. This strategy sets out the huge potential to go further and more than double this workforce by the end of the decade, as we ensure the future is made and built in Britain.

I want to thank all the members of the Taskforce for their ambition for the future of onshore wind in Britain. This is just the start of seizing the opportunity it presents, and we are now establishing the Onshore Wind Council to take forward the action set out in this report – as we build an energy system that can deliver the lower bills, energy security, good jobs and climate action the British people need and deserve.

Foreword by the Rt Hon Ed Miliband MP
Secretary of State for Energy Security and Net Zero

Onshore Wind Taskforce Foreword

The Onshore Wind Taskforce has been a great opportunity for key stakeholders across government, business, industry and trade unions to work collaboratively to develop a mission-critical strategy to help make Britain a clean energy superpower.

Onshore wind's contribution is essential, as a homegrown, affordable and low carbon energy source, and Great Britain currently has 14.8GW of installed capacity. However, onshore wind lost its momentum 10 years ago when the de facto ban onshore wind in England was enacted to deter its deployment. As a result, Great Britain has not been able to capitalise on 30GW of an extensive pipeline of projects.

As mentioned in the recently published Clean Power 2030 Action Plan, now is the time to join forces and harvest the benefits by delivering the required 27GW to 29GW of onshore wind by 2030. This has been the compelling reason driving the Onshore Wind Taskforce: to define a strategy to unlock the barriers to deployment and capture the major socio-economic benefits of onshore wind, whilst ensuring sustainability for local environment and the broader electricity system.

The Onshore Wind Strategy is the result of a collaborative approach with representation from over 300 organisations, allowing us to establish priorities and commitments across 42 actions covering key matters such as: planning, communities, aviation and defence, supply chain and skills, networks and route to market. I want to thank all the organisations for their diverse and valuable inputs, and particularly I would like to thank the support and fortitude of my co-chairs, Rt Hon Ed Miliband MP and Michael Shanks MP.

Together we are forging a path forward for onshore wind in Great Britain, and we will follow through on our commitments for a successful implementation of the Onshore Wind Strategy with the dedication of a new Onshore Wind Council to oversee its implementation.

Foreword by Matthieu Hue
Onshore Wind Taskforce Co-Chair, and Chief Executive Officer at EDF Renewables UK and Ireland

Head of Clean Power 2030 Foreword

In the UK, we have pioneered policies to attract renewable investment, grow our renewable industries and deploy clean energy technologies at a scale that was once thought impossible. But despite some of the best conditions for onshore wind in the world, developing wind projects in the UK still takes too long. We need a new approach to release Britain's onshore wind potential.

Clean Power 2030 is our ambitious mission to grow rapidly Britain's clean electricity infrastructure, reducing Britain's dependency on imported oil and gas, securing key clean industries and readying the country for the expected growth in electrical demand over the next 20 years.

Our Clean Power Action Plan targets a near-doubling of onshore wind capacity, up to 29GW by 2030. That will require rapid development of new onshore wind across Britain and repowering of existing sites to bring British consumers some of the cheapest homegrown power that can be produced. We are already working with NESO to slash the queue of projects waiting to connect to the grid to accelerate the best onshore wind developments.

This new onshore wind strategy includes further steps to streamline planning and consenting of onshore wind, shorten the route to market for developers and address long-running barriers to wind development from aviation and defence. The gap to our 2030 onshore wind goals remains an underdeveloped pipeline of projects in England, following the lifting of planning restrictions last year. We are focused on rebuilding that pipeline, project by project, with new steps to build community support and foster strong relationships between onshore wind developers and their local communities.

Rapid deployment of onshore wind is our first line of defence against future gas price spikes – every megawatt added displaces imported gas in the power system. With the steps in this new strategy, we will cement the growth of an important homegrown industry. The momentum behind clean power continues to grow.

Foreword by Chris Stark
Head of Clean Power 2030 Department of Energy Security and Net Zero

Executive Summary

Context

Onshore wind will play an essential role in Clean Power by 2030, leading to a more secure and affordable energy system, and creating new economic opportunities and jobs across the UK.

Under this Government we removed the defacto ban on onshore wind in England, and are delivering radical action to unlock 27-29GW of onshore wind by 2030 across GB. That's around 10-12GW more than would have been deployed under historic growth rates, with England contributing around 2GW by 2030.

Onshore wind is among the cheapest sources of new electricity generation to build and operate at scale. Scaling up home-grown renewables, like we're doing for onshore wind, reduces the UK's exposure to volatile global fossil fuel prices, which protects consumer energy bills against future price shocks.

This document is the Government's strategy to deliver radical action to quickly unlock onshore wind and deliver on the benefits. It has a multi-territorial scope, focusing on the deployment of onshore wind in England but also recognising the importance of addressing the barriers to onshore wind development across the UK.

Commitments

The **Onshore Wind Taskforce** established in July 2024 has developed actions to boost onshore wind deployment and deliver benefits for local communities, British businesses and the consumer. Drawing on the Taskforce's work, this Strategy includes 42 actions, primarily Government commitments, to resolve the key blockers to onshore wind in the UK. The key actions include:

1. **Scoping, planning and consenting** – ambitious new reforms to **improve planning system** attrition rates and ensure **streamlined consenting**, including but not limited to:
    a. Updating planning policy and guidance for onshore wind to ensure that planning decisions are based on up-to-date technical information and evidence.
    b. Improving data and delivering an enhanced training package, to ensure that site surveying and assessments are more efficient.
    c. A consultation on permitted development rights to support small-scale deployment and repowering.

2. **Networks and systems** – commitments reiterating **important actions already underway**, such as:
    a. Radical connections reform, to ensure the grid can support low-carbon generation such as onshore wind, and network build is accelerated.
    b. Delivering the Strategic Spatial Energy Plan, to support a more actively planned approach to energy infrastructure.
3. **Communities and public perception –** new commitments to further **enhance the relationship** between onshore wind developers and local community stakeholders, including:
    a. Embedding best practice principles of engagement into planning guidance.
    b. Publishing updated Community Benefits Guidance for Onshore Wind in England.
    c. Delivering regional communications campaigns that provide accurate information on economic investment and development impacts, led by industry.
4. **Aviation and defence –** range of new commitments to **tackle onshore wind interference issues with civil and military radar**, including but not limited to:
    a. Time-bound commitments to consult and enforce a revised solution to managing the Eskdalemuir Seismic Array.
    b. An annual survey to quantify the impact of aviation and defence objections on the onshore wind sector.
    c. Enhancing the role of the Civil Aviation Authority to act as a mediator in local mitigation processes.
    d. A programme of trials to test potential solutions to onshore wind turbine interference with Ministry of Defence (MoD) air traffic control radars (including RAF Lossiemouth).
5. **Finance and routes to market – considers project routes** to market (e.g. the Contracts for Difference Scheme), and delivery challenges projects face related to financing, including commitments to:
    a. Establish a joint Government/industry subgroup as part of a new Onshore Wind Council, to identify and monitor specific challenges facing projects.
    b. Consider reforms to the Contracts for Difference Scheme.
6. **Supply chains, skills and the workforce –** new commitments to **improve the evidence base** to underpin future supply chain and skills policy interventions, including:
    a. Undertaking supply chain research to better understand constraints and opportunities across the onshore wind sector.
    b. Completing workforce monitoring for the sector, led by the onshore wind industry.

Delivery

The successful implementation of the Onshore Wind Strategy is dependent on robust management and monitoring of progress, and a continuous evaluation of the effectiveness of the actions taken. The Government is committed to delivering the level of onshore wind needed by 2030 and is therefore **establishing a new Onshore Wind Council** to oversee the implementation of this strategy and to develop the further actions likely needed to get us to the Clean Power 2030 capacity range.

We will take a **data-driven approach** to monitoring the delivery of the Onshore Wind Strategy. The Onshore Wind Council and supporting group will track the onshore wind pipeline out to 2030 and beyond, key performance indicators related to many of the actions committed to by the Government in this document, and wider economic and financial factors influencing the onshore wind industry.

In totality, this presents a robust plan to ensure the Government and industry continue to work together to fulfil the commitments made within this strategy and unblock the barriers to onshore wind deployment across the UK.

INTRODUCTION

INTRODUCTION

The Government is committed to delivering a clean, affordable and secure energy system by 2030. Onshore wind is a mature, efficient, and cheap electricity generation technology, and will play a crucial role in delivering our decarbonisation and economic goals. This strategy sets out the urgent actions the Government will take to unlock onshore wind deployment, deliver the capacity needed by 2030 and lay the groundwork for a future electrified economy.

Despite onshore wind being such an important contributor to today's energy mix, the removal of financial support for onshore wind in 2015 and introduction of the English onshore wind **de facto planning ban severely limited deployment**. In July 2024, this Government immediately removed the de facto ban, demonstrating our commitment to onshore wind.

In December 2024 the Government published the **Clean Power Action Plan**, setting out a pathway to achieving the 2030 mission.[1] All routes to achieving this mission are reliant on mass deployment of renewable electricity technologies, including onshore wind. The Clean Power Plan stated that to decarbonise the power sector by 2030, **27 to 29GW of onshore wind** will be needed within GB.[2] That is a significant increase above current installed capacity, which stands at 14.8GW in GB (over 16GW in the UK).[3]

We know the Government needs to take radical action and quickly deliver solutions to accelerate onshore wind deployment in England, reverse the significant impact of the de facto ban and de-risk the existing pipeline in Scotland and Wales.

We will work to unlock 27 to 29GW of onshore wind by 2030 across GB – around 10 to 12GW more than would have been deployed under historic growth rates, with England contributing around 2GW by 2030.

Onshore wind is among the **cheapest sources of new electricity generation** to build and operate at scale. Scaling up home-grown renewables, like we're doing for onshore wind, reduces the UK's exposure to volatile global fossil fuel prices, **which protects consumer energy bills** against future price shocks.

Clean energy industries including onshore wind also present a **significant economic opportunity**, both by 2030 and beyond. UK content in overall expenditure of some projects can be relatively high (50%-70%[4]) with high shares of jobs and investment in development, operation and maintenance, civil engineering and electrical works. Latest estimates suggest that the onshore wind sector directly supports 6,600 full-time equivalent (FTE) jobs, and indirectly supports 13,100 FTE[5], in addition to generating £191m per year in exports[6]. Meeting our onshore wind 2030 targets by delivering on the

1 Clean Power 2030 Action Plan – GOV.UK

2 To deliver a system with at least 95% of GB's generation being produced from clean sources.

3 Energy Trends: UK renewables – GOV.UK

4 Data collected from the Onshore Wind Taskforce, 2024

5 Low carbon and renewable energy economy indirect estimates – Office for National Statistics

6 Low carbon and renewable energy economy, UK – Office for National Statistics

actions within the Government's Onshore Wind Strategy could deliver up to 45,000 direct and indirect jobs in Great Britain and result in £70m per year of extra investment in local community benefits.

This document is our strategy for delivering for onshore wind, setting out a range of ambitious commitments from the Government and industry to unlock the key barriers to deployment and deliver the benefits.

Onshore wind policy overview

The first commercial, grid connected wind farm in the UK was built in Cornwall in 1991. Almost three decades later, we now have over 16GW of onshore wind in the UK, enough to power the equivalent of around 10 million homes (see figure one).[7,8]

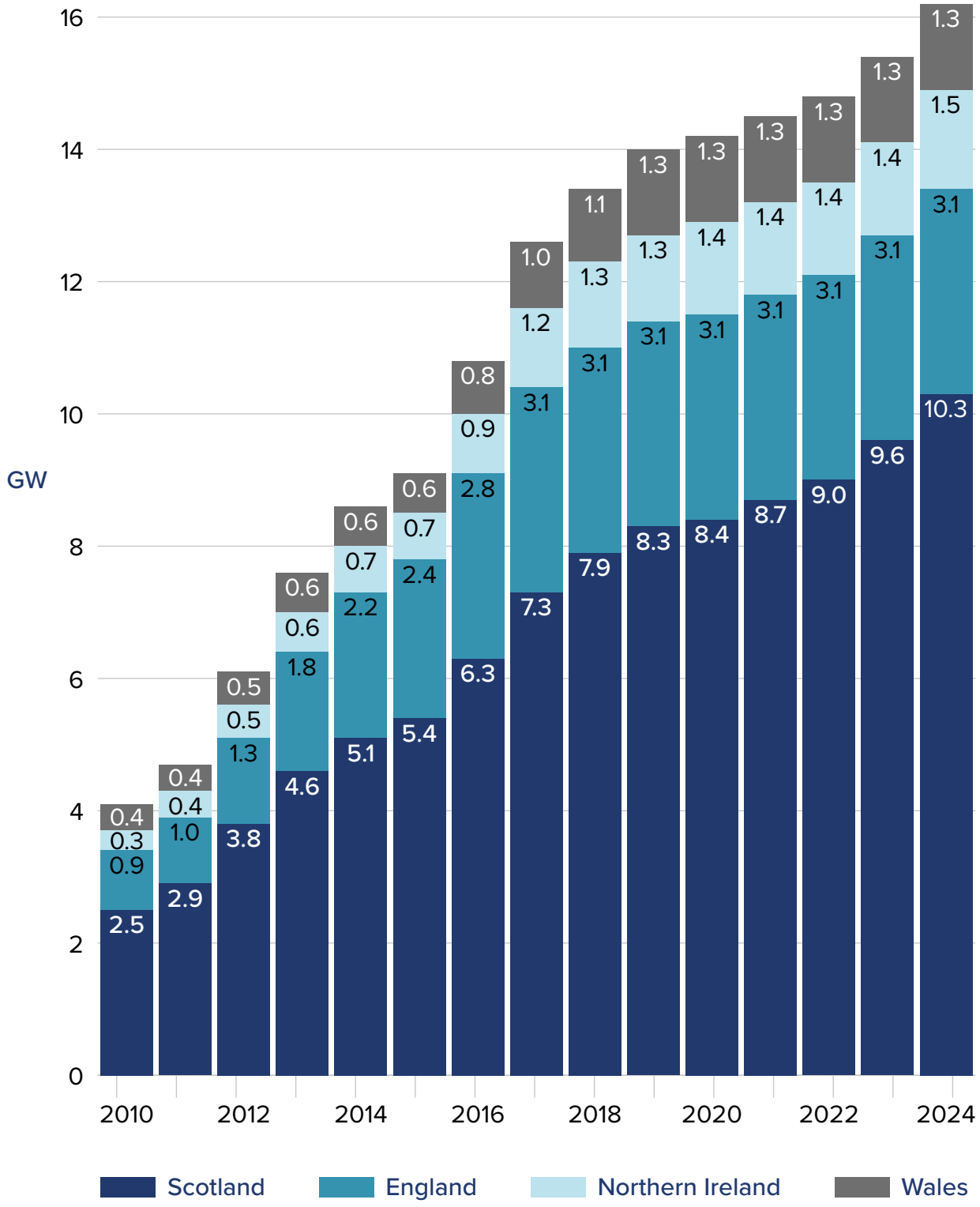
Onshore wind turbine technology has advanced significantly in this period. Turbines are now taller and can accommodate larger blades, meaning that higher wind speeds can be captured and more power generated. Advances in gearbox technology mean that wind turbines can generate electricity at closer to full power, and for longer. Coupled with the increased learning rate – the rate at which capital costs decrease as more plants are built, resulting from greater technical and construction experience – this means that **onshore wind is now one of the cheapest forms of electricity generation in the UK today**. Latest estimates indicate that the levelised cost of an onshore wind farm commissioning in 2030 will be £36/MWh – more than 4 times cheaper than a gas-fired power plant.[9]

7 Energy Trends: UK renewables – GOV.UK

8 10 million homes powered is calculated using household consumption estimate from the published Subnational Electricity and Gas Consumption Report and actual onshore wind load factors for 2024 from published Dukes data.
https://www.gov.uk/government/statistics/subnational-electricity-and-gas-consumption-summary-report-2023
https://assets.publishing.service.gov.uk/media/6810b23efd5a4ef590e041e9/ET_6.1.xlsx

9 Electricity generation costs 2023 – GOV.UK (in £2021 prices)

Figure one – Onshore wind cumulative installed capacity, historical



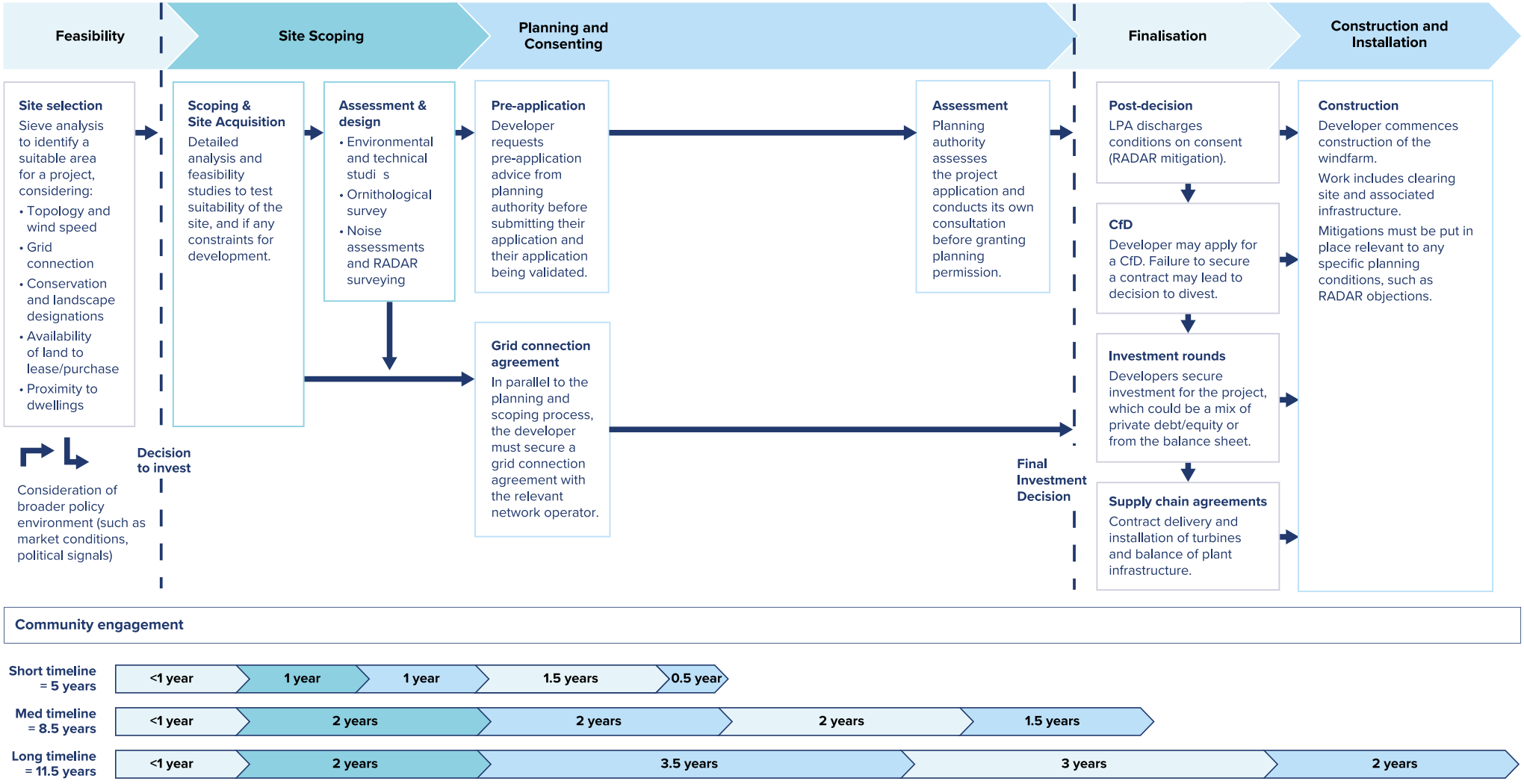
Despite onshore wind being an important contributor to today's energy mix, the removal of financial support for onshore wind in 2015 and the parallel introduction of the English onshore wind de facto planning ban severely limited deployment. **In July 2024, the Government removed the de facto ban on onshore wind in England**, revising planning policy to place onshore wind on the same footing as other energy development in the National Planning Policy Framework (NPPF). Alongside this, the Government has also made legislation to reinclude large onshore proposals into the Nationally Significant Infrastructure Project (NSIP) regime, to support quick determination. These significant changes mean there is now a growing pipeline of projects in England.

Under the extant policy environment, it typically takes between 4 and 9 years for an onshore wind project to go from inception through to operation, and attrition rates can be high. The National Energy System Operator's (NESO) analysis of grid connection data suggests that as many as 70% of projects that are in scoping do not go on to become operational.[10] This Strategy sets out a range of commitments from the Government to help address these issues and support onshore wind deployment across GB.

10 Connections Action Plan: Speeding up connections to the electricity network across Great Britain, page 17

Onshore Wind Taskforce Strategy

Figure two – Onshore wind development lifecycle[1]



1 Based on data provided by industry

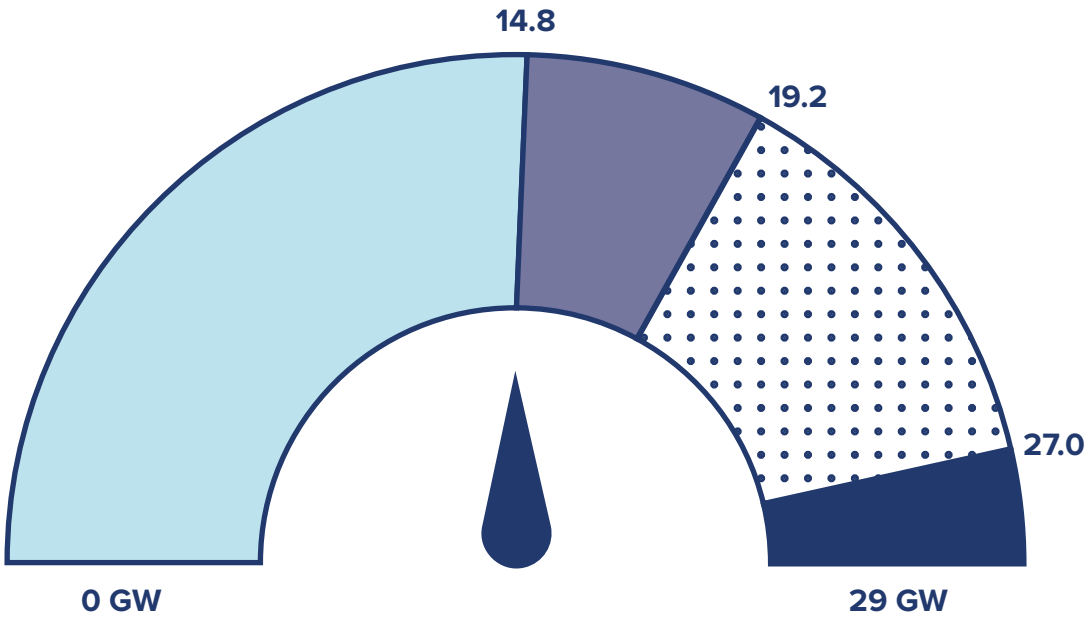
How much onshore wind do we need?

The Clean Power 2030 Action Plan stated that to decarbonise the power sector by 2030, **27 to 29GW of onshore wind** will be needed within GB.[12] That is a significant increase above current installed capacity, which stands at 14.8GW in GB (over 16GW in the UK).[13]

Figure three – Onshore wind capacity needed for 2030 Clean Power mission

Onshore wind

Current installed capacity compared to the Department for Energy Security and Net Zero (DESNZ) 'Clean Power Capacity Range' in 2030 (GW)



Current installed capacity (Q4 2024)

Committed or under construction

Gap to the DESNZ 'Clean Power Capacity Range'

DESNZ 'Clean Power Capacity Range' 2030

12 To deliver a system with at least 95% of GB's generation being produced from clean sources

13 Energy Trends: UK renewables – GOV.UK

Figure four – Onshore wind key figures[14]

		Today	2030
	**Jobs supported** (Direct and indirect, GB)	c.18,000	Up to **45,000**
	**Capacity, GW** (GB)	c.14.8	Up to **29**

Providing medium to long term estimates of future deployment (such as those in figure four and five) is dependent on a wide range of factors, is inherently challenging and highly uncertain. Onshore wind projects will only deploy if they are economically viable and wider requirements are met, including but not limited to: grid connections and skills availability, smooth planning processes and no significant supply chain disruptions.

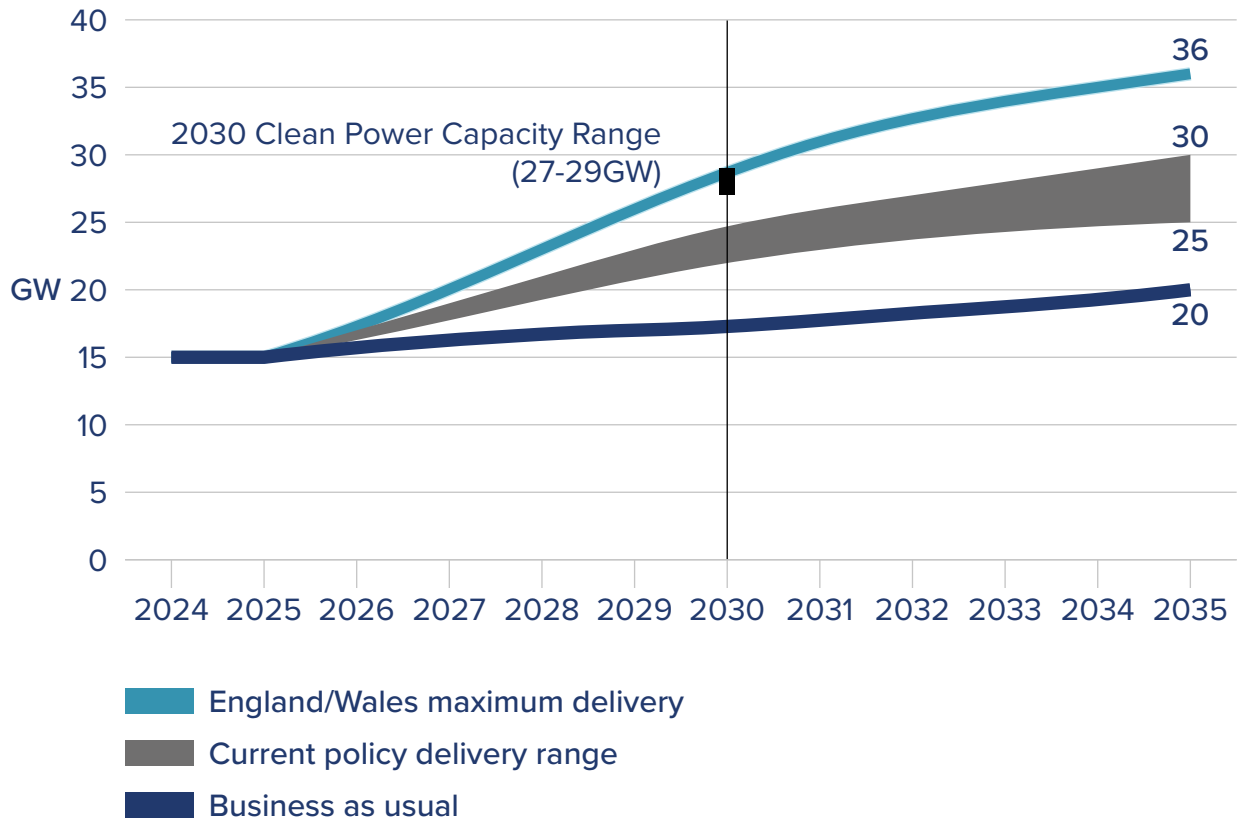
To support the Government's Onshore Wind Strategy, we have developed a range of **illustrative scenarios for deployment to highlight the potential of the technology** relative to the range for onshore wind set out in the Clean Power Action plan[15].

The analysis presented here is intended to illustrate plausible pathways for onshore wind deployment based on the best available current data and evidence: planning data (Renewable Energy Planning Database, REPD), historic trends and assumptions agreed with the Onshore Wind Taskforce. Further detail on the assumptions is presented in Annex 1.

14 Detail on methodology and sources is available in Annex 1.

15 Note the Clean Power Action Plan range differs from the analysis within this section of the ONW Strategy. The Clean Power Plan analysis specifically tells you how much onshore wind would be needed to achieve decarbonisation by 2030.

Figure five – Illustrative deployment scenarios emphasise the challenge in meeting the 2030 Clean Power Range in GB, which will require significant deployment in Scotland, England and Wales.



Business As Usual: *No significant changes in policy, economic and infrastructure conditions.* In broad terms, onshore wind is assumed to deploy at rates reflecting recent historic growth (around 3% since 2021). The historic growth rate is unlikely to reflect the full impact of the lifting of the de facto ban in England. Under this scenario onshore wind reaches in the region of 17GW by 2030 and 20GW by 2035.

Current Policy Delivery range: *Assumes favourable economic and infrastructure conditions under current policy.* These scenarios assume seamless implementation of the connections reform announced as part of the Clean Power 2030 Action Plan and the policy actions agreed by the Onshore Wind Taskforce as set out in this Strategy. Specifically, the higher end of the range is supported by a range of actions on planning and aviation/defence proposed by the Onshore Wind Taskforce. These actions enable a smoother planning process and quicker resolutions of radar issues resulting in lower attrition rates for projects in the pipeline. In this scenario, around 25GW is installed by 2030 and 30GW by 2035.

England/Wales Maximum Delivery: *Deployment maximised through significant further progress in England and Wales.* In addition to the capacity in the Current Policy Delivery scenarios, the most optimistic scenario shows the potential of increasing onshore wind deployment through policies aimed at strengthening deployment in England and Wales, e.g. Great British Energy (GBE) activity which could help contribute to meeting

this ambition. Under this scenario, onshore wind deployment could reach levels consistent with the 2030 Clean Power Range, and in excess of 35GW by 2035. **DESNZ will work with the Onshore Wind Council to determine the further actions needed to reach this scenario**, beyond those committed to within this Strategy (see "Implementation" section for further details).

To supplement this work, EDF Renewables and RenewableUK also worked with Baringa to complete analysis, focusing on the key barriers to onshore wind projects reaching final investment decision, and the impact those barriers have on deployment potential by 2030. The conclusions were broadly similar to the DESNZ analysis above.

Some of the results from this analysis are referenced throughout this report, to support the policy actions being taken.

On cost impacts, in their advice on delivering Clean Power 2030, NESO set out their analysis of potential impacts of delivering Clean Power on electricity costs in 2030. This Onshore Wind Strategy forms part of Government's plan to deliver Clean Power by 2030, and the GW level of onshore wind described within this strategy is consistent with the Clean Power Action Plan. As stated in the Clean Power Action Plan, this transition is the only way to protect businesses and families for good from increased energy bills resulting from volatile global gas markets.

Onshore Wind Taskforce overview

The Department for Energy Security and Net Zero established the Onshore Wind Industry Taskforce in July 2024, bringing together Government, industry, regulatory and other relevant bodies to develop actions to boost onshore wind deployment and deliver benefits for local communities, British businesses and the consumer. The Taskforce was established with three key objectives:

1. **Unlock the barriers to deployment that onshore wind developers face** by identifying where there are financial, regulatory or policy challenges that are preventing the construction and operation of onshore wind projects in a timely and cost-effective manner;
2. **Ensure sustainability** by considering the potential impacts that onshore wind projects can have on the local environment and broader electricity system; and
3. **Capture the benefits** by identifying opportunities to facilitate continued cost reductions and ensure investment in UK supply chains, jobs, skills and innovation as the sector grows.

How was the Taskforce structured?

Between July 2024 and April 2025, the Executive Committee for the Taskforce met four times, to discuss and agree policy issues and actions. The Executive Committee was supported by six specialist Working Groups, with over 300 different organisations contributing. Government would like to thank all of those who participated. The Taskforce considered expert advice from across the wind industry and associated partner sectors, including those involved in the broader planning and electricity system, and wider civil society.

Evidence was gathered through workshops with the specialist working groups, targeted roundtables, and a series of data collection and evidence gathering exercises.

As a result, the Taskforce identified and agreed 42 actions that Government and industry must take to deliver on its three core objectives. This strategy sets out the conclusions of the Taskforce and actions across six key themes:

1. Scoping, planning and consenting
2. Networks and systems
3. Communities and public perception
4. Aviation and defence
5. Finances and route to market
6. Supply chains, skills and the workforce

Territorial scope

The Taskforce and Onshore Wind Strategy have a multi-territorial scope. Whilst the primary focus is on the deployment of onshore wind in England, the Strategy also recognises the importance of addressing the barriers to onshore wind development across the UK. Devolved matters have been respected, while some subject matters which are not devolved under a devolution settlement have been considered by the Taskforce. Therefore, some of the actions in this report will have implications for the pipeline of onshore wind projects in the Devolved Administrations. As such, officials from Wales, Scotland, and Northern Ireland have been involved in the Taskforce process.

POLICY THEMES AND ACTIONS

THEME 1 – SITE SELECTION, PREPARATION AND CONSENTING

Theme overview

Before an onshore wind project can be built, the developer must select a suitable site and agree land leasing, undertake site preparation and surveying, and secure consent from the relevant consenting authority. This process can take in excess of 5 years, and many projects fail to progress to construction due to the barriers faced.

Analysis of the Renewable Energy Planning Database (REPD) suggests that, of UK projects that do submit an application, as many as 30% do not go on to receive consent. In the period 2010-2015, the last time the deployment of onshore wind in England was not under restriction, the proportion of onshore wind projects entering the planning process and receiving a decision within a 2-year time frame declined substantially. We need to **improve attrition rates and ensure streamlined consenting.** Addressing this is a **critical priority for the Government to ensure we achieve our 2030 Mission** and wider decarbonisation objectives.

Equally, it is important that there are processes in place to ensure that projects are proposed in the most appropriate areas, and that the potential adverse impacts of the project are avoided, or assessed and mitigated.

The Government has already made substantial progress here, taking decisive steps towards making planning work better for clean power and onshore wind. Since July 2024, we have removed the de facto ban and made legislation to re-integrate onshore wind into the

Nationally Significant Infrastructure Projects regime in England. We have also published the Clean Power Action Plan, with a number of key commitments relevant to planning and consenting. The Government is committed to building on these actions and maintaining momentum, ensuring that:

- Proposals for onshore wind projects of all sizes can be developed to optimal timelines and at best value for money;
- Planning applications for onshore wind are considered and determined in a timely manner under the appropriate planning regime commensurate with a project's scale, impact and complexity, in accordance with up-to-date knowledge and expertise; and
- Proposals for onshore wind are suitable and sustainable, and any impacts of developments are suitably balanced against the benefits they bring.

Site selection and preparation

There are many interdependent factors that influence what constitutes a 'suitable' site for onshore wind. There is also limited consensus as to how these variables should be applied or prioritised. For onshore wind developers, the primary determining factors are in relation to wind speed and load factors, grid access, and land costs. These drive financial viability and support the generation of electricity at lower cost to the consumer. For other system stakeholders, such as local authorities or Statutory Nature Conservation Bodies for instance, factors such as proximity to conurbations and dwellings, impacts on heritage sites or designated landscapes, or risks to wildlife and the natural environment are of greater significance.

Generally, developers take a responsible approach to site selection and will consider all of these factors at an early stage to ensure sustainable development and increase the likelihood of consent. Nevertheless, these constraints ultimately determine the amount of land that is available for proposed onshore wind development, and the lack of alignment between these potentially competing criteria can lead to additional surveying requirements and slow down the process of consenting. Scoping activities such as securing land agreements or site surveying can therefore be time consuming, costly and onerous.

Equally, we must be cognisant that onshore wind turbines are large, moving pieces of infrastructure. So whilst it is clear we must act urgently to improve the speed with which they move through the planning system, we also need to ensure that onshore wind projects continue to deliver positive outcomes for nature and communities. Our approach is about integrating onshore wind and environmental needs, to rebuild our natural infrastructure at the same time as building the new energy infrastructure we require.

ACTION 1: THE GOVERNMENT WILL MODERNISE THE EXISTING SYSTEM OF ENVIRONMENTAL ASSESSMENTS THROUGH THE INTRODUCTION OF ENVIRONMENTAL OUTCOMES REPORTS AND A NATURE RESTORATION FUND

Action owner: *MHCLG and DEFRA leads, with support from other Departments*
Delivery timeline: *Ongoing*

The current systems of environmental assessment have become increasingly complicated, inaccessible and are failing to deliver the environmental outcomes we need.

To address this, the **Government will replace the current system of environmental assessment – comprising of Strategic Environmental Assessments and Environmental Impacts Assessments – with Environmental Outcomes Reports (EORs)**. This new system will provide greater certainty to developers by ensuring that assessments are proportionate, which will reduce costs and delays. Government will publish a roadmap to bring forward EORs, in consultation with devolved government. This roadmap will set out clear transitional arrangements, to negate any disruption as we move from one system to the other.

The **Government will also establish a Nature Restoration Fund** to pool contributions from developers to fund larger strategic interventions environmental improvements for protected sites and species. This approach will reduce the need for individual site-level assessments where an Environmental Delivery Plan is in place that addresses relevant environmental obligations at a strategic scale. These measures form part of the Planning and Infrastructure Bill, which is currently before Parliament.

The Government will involve industry representatives in discussions about how these reforms are implemented.

ACTION 2: THE GOVERNMENT WILL SCOPE A DATA TOOL TO SUPPORT WITH THE IDENTIFICATION OF SUITABLE SITES FOR ONSHORE WIND, AND FACILITATE BETTER TRANSPARENCY AND ENGAGEMENT WHEN ASSESSING THESE SITES

Action owner: *DESNZ lead, with MHCLG and DEFRA support*
Delivery timeline: *December 2025*

Onshore wind developers have a mature approach to the use of data when identifying potential sites. However, planning authorities and statutory consultees do not have the same data capabilities. This can lead to additional site surveying requirements – increasing the time and costs of development. To address this, **the Government will scope a prototype data tool to support Local Planning Authorities, NGOs and statutory consultees when they monitor the pipeline of onshore wind projects**, and likely areas of development based on wind speeds, and enable them to plan accordingly. The tool would combine data from industry sources with data relevant to planning authorities, statutory consultees and NGOs, as well as any relevant data collected through site surveying or operation.

ACTION 3: THE GOVERNMENT WILL CONSIDER THE ROLE THAT GREAT BRITISH ENERGY CAN PLAY IN SUPPORTING DEVELOPMENT OPPORTUNITIES

Action owner: *GBE* **Delivery timeline:** *Ongoing*

Great British Energy, once operational, will be a government owned energy developer which will have the capital, expertise and risk appetite to undertake medium and large-scale onshore wind projects. GBE will have the ability to originate new projects and may seek partnership opportunities to help accelerate the delivery of onshore wind (subject to agreeing relationships and terms with landowners and partners). Undertaking these projects in regions where there is an under-deployment of wind will provide investment certainty to the sector and should crowd-in private capital and generate returns for the British public. **Great British Energy, once established, will continue engagement and look to establish formal relationships across the United Kingdom.**

Planning framework

Onshore wind turbine technology has evolved. Since 2010, the rated capacity of contemporary turbines has approximately doubled – with greater tip heights, larger blades and swept areas. The average rated capacity of a turbine being approved for deployment in the UK in 2020 was approximately 4MW, whereas in 2010 it was approximately 2MW, and some of the very latest projects are proposing turbines capable of achieving over 7MW.[16]

In England, the technical thresholds under which projects are considered permitted development (classified under the Town and Country Planning Act 1990) or categorised as Nationally Significant Infrastructure Projects (and therefore consented via a Development Consent Order under the Planning Act 2008), have not yet been updated to reflect the evolving technology. This risks certain projects being treated disproportionately in the planning consenting system. For example, a single, small-scale turbine may currently be required to enter the planning system when it may be more appropriately considered as permitted development. Equally, a much larger, utility-scale project may be determined by a local planning authority, who may not have the resources, skills or expertise to make a timely decision. This could lead to suitable projects not building at all, or inappropriate projects being too easily built.

Furthermore, changes to gearbox technology means that onshore wind turbines can now operate at closer to full capacity, and for much longer. Where it was originally thought that onshore wind turbines might only be able to generate electricity for 20 years, evidence shows that contemporary turbines can generate electricity to lifetimes as long as 35 years. However, some projects today are still being granted consent to operate for a limited period of 20 or 25 years. This means these projects may need to be decommissioned or apply for planning extensions earlier than is necessary – with potentially sub-optimal outcomes, including cost and resource implications for both the developer and the consenting authority.

16 Based on analysis of the Renewable Energy Planning Database: Renewable Energy Planning Database: quarterly extract – GOV.UK

ACTION 4: THE GOVERNMENT WILL RE-INTRODUCE ONSHORE WIND INTO THE NATIONALLY SIGNIFICANT INFRASTRUCTURE PROJECTS REGIME WITH AN UPDATED THRESHOLD OF 100MW

Action owner: *DESNZ* **Delivery timeline:** *December 2025*

In 2016, the previous government changed the law to remove onshore wind from the Nationally Significant Infrastructure Projects (NSIP) regime. This effectively made it impossible for large-scale onshore wind projects to move through the planning system in England and constituted part of the de facto ban on onshore wind. **The Government has brought forward legislation that re-introduces onshore wind into the NSIP regime,** laying the statutory instrument to enact this change in March 2025. This was made in June 2025, and **will come into force on 31 December 2025.**

To account for evolutions in the size and shape of onshore wind technology since 2008, Government is setting the threshold over which onshore wind projects are determined as 'nationally significant' at 100MW. This will provide an appropriate route for large-scale projects seeking planning consent, where local impacts can be carefully balanced against the national benefits and meeting the UK's wider decarbonisation goals. This will also ensure that, given the advances in turbine technology, mid-sized projects will not exceed the threshold and can access local planning processes, which will be more proportionate to their scale, impact and complexity.

However, the Government recognises that in some circumstances the individual nature of a project or site may mean using a different planning regime may be more appropriate depending on the impact or complexity. Where projects will have a capacity below the nationally significant threshold of 100MW, developers have the option of using the process set out in Section 35 of the Planning Act to request that the Secretary of State considers their project for determination under the NSIP regime. Additionally, the Government intends to introduce a new power through the Planning and Infrastructure Bill to allow the Secretary of State to disapply requirements for a 'nationally significant' project to seek consent under the NSIP regime. This is in effect a 'reverse Section 35', in which projects that would otherwise be deemed as nationally significant, could instead seek planning consent via local planning authorities under the Town and Country Planning Act 1990. Both measures ensure flexibility in the planning system, allowing developers to request that projects are consented through the most appropriate route that is best suited to individual projects and sites.

ACTION 5: THE GOVERNMENT WILL LAUNCH A CONSULTATION ON PERMITTED DEVELOPMENT RIGHTS FOR ONSHORE WIND

Action owner: *DESNZ lead with MHCLG support* **Delivery timeline:** *End 2025*

Currently, permitted development rights for stand-alone or building mounted onshore wind turbines only apply to those installed on or in the premises of detached houses. Permitted development rights do not apply to turbines on commercial premises and there are other restrictions. There are also height restrictions of 11.1m for standalone turbines and 15m (including building, hub and blade) for building mounted turbines, as well as other restrictions based on swept area and distance from blade to ground. These rules were introduced in 2011 and have not been updated since. However, evolutions in onshore wind turbine technology and increased demand for small-scale onshore wind turbines may allow for an update to these rules.

The Government will launch a consultation to seek views on whether the existing permitted development right is fit for purpose and explore other forms of small-scale onshore wind deployment, including in relation to community-owned onshore wind, to support the decarbonisation of agriculture or other forms of heavy industry, or to consider onshore wind repowering and replacement.

ACTION 6: THE GOVERNMENT WILL SIGNAL THE AVAILABILITY OF LONGER TERM OPERATIONAL CONSENT TIMELINES FOR ONSHORE WIND AND FLEXIBILITY IN THE COMMENCEMENT OF DEVELOPMENT PERIOD, FOR PROJECTS DEVELOPING UNDER THE TOWN AND COUNTRY PLANNING ACT 1990

Action owner: *DESNZ lead with MHCLG support* **Delivery timeline:** *Autumn 2025*

It is usual for operational consents issued by local planning authorities to be time-limited, and this can serve useful purposes (for example, enabling quantification of the impacts of development), However, time-limited consents may lead to increased costs later down the line if a developer needs to seek approval to extend the lifetime of the development, or is compelled to repower sooner than is economically viable. **The Government will therefore update Planning Practice Guidance to signal that greater flexibility in operational consent durations may be available where appropriate.**

Currently, planning consents that are issued for onshore wind under the Town and Country Planning Act 1990 typically require construction to start within three years of the grant of consent. Failure to do so means that the consent expires, and the developer will need to re-submit their application. Whilst this is an important safeguard against speculative planning applications, there are a number of challenges facing developers today that are affecting their capacity to meet this requirement – including in relation to grid connection delays, discharging planning conditions on radar, or securing a route to market**.** The Government is introducing reforms to tackle these challenges, however there is likely to be an interim period until these begin to take effect. **The Government will therefore update Planning Practice Guidance to signal that flexibility in relation to the commencement of development period may be available where appropriate.**

Consenting decisions and resourcing

After the de facto ban on onshore wind development in England took effect in 2015, deployment of onshore wind ground to a standstill and the pipeline of projects shrank by over 90%. Around 25 projects received consent to build at a total cumulative capacity of less than 50MW. These projects were predominantly single turbine schemes and mainly additions or extensions to existing projects. Only five turbines were subsequently built and operationalised[17].

Contemporary onshore wind sites look very different to the last substantive onshore wind site approved in England – the nine turbine, 31MW Beck Burn wind farm that received planning consent in April 2015, just a few months before the ban was introduced. Turbines are taller, they accommodate larger blades and are therefore more powerful. The size and shape of projects has also changed to accommodate new technology and to ensure economic viability. A 30MW wind farm today might conceivably be comprised of just five large turbines. Given the lack of deployment in England for the last decade, it is necessary to consider changes to ensure that the planning system is equipped to effectively process applications for onshore wind. For instance, policy and technical guidance may not be accurate or properly aligned. Decision makers or key stakeholders may not have the skills or resource to effectively assess a planning application for an onshore wind development in a timely manner.

ACTION 7: THE GOVERNMENT WILL UPDATE PLANNING POLICY AND GUIDANCE THAT IS USED THROUGHOUT THE PLANNING SYSTEM

Action owner: *DESNZ lead with DCMS, DEFRA and MHCLG support*
Delivery timeline: *Spring 2026*

Failing to update relevant policy and guidance could mean that decisions on onshore wind planning applications are made using outdated technical or policy information. The National Policy Statements for Energy Infrastructure (NPS) and the Renewable and Low Carbon Energy Planning Practice Guidance ('the PPG') are routinely used by developers and planners when making decisions about onshore wind projects. However, the last time an onshore wind National Policy Statement was published was in 2011, whilst the PPG has not been substantively updated since 2015. Following the inclusion of onshore wind into the NSIP regime (see action 4, above), the **Government will consult on, lay and designate an updated NPS, including new onshore wind policy, by the end of 2025**, as part of a wider suite of NPS updates. **The Government will also publish an updated PPG in Autumn 2025**.

The updated NPS and PPG will need to signpost to a range of other guidance documents relevant to onshore wind. Whilst some existing guidance documents

17 Based on analysis of the Renewable Energy Planning Database: Renewable Energy Planning Database: quarterly extract – GOV.UK

remain relevant and applicable in their current form, others will require modernising to align with up-to-date evidence and policy. **The Government will therefore engage with the relevant policy owners to support the necessary updates** including, where feasible and appropriate, alignment with contemporary approaches that are in place in the Devolved Administrations. This includes, but is not limited to:

- Reviewing best practice guidance on landscape and visual impact assessments, including considering alignment with guidance currently in place in Scotland.
- Working with Historic England to update their guidance on commercial onshore wind energy development and the historic environment (last updated 2021).
- Working with Natural England and the Royal Society for Protection of Birds to review existing guidance on bird collision risk (dating back to 2015) and consider the potential to adopt or align with contemporary approaches in Scotland.
- Updating Guidance for the Assessment and Rating of Noise from Wind Turbines (ETSU-R-97).

The Government will also work with professional organisations such as the Royal Town Planning Institute and the Institute of Sustainability and Environmental Professionals to provide updated guidance to their members, that can be used by planners and environmental consultants when considering onshore wind applications.

ACTION 8: THE GOVERNMENT WILL PROVIDE TRAINING AND RESOURCE SUPPORT TO LOCAL PLANNING AUTHORITIES AND STATUTORY CONSULTEES IN ASSESSING APPLICATIONS

Action owner: *DESNZ lead with MHCLG and DEFRA support*
Delivery timeline: *Spring 2026*

In the absence of any substantive onshore wind planning applications submitted in England for over a decade, there is a resource and intelligence gap across the system that jeopardises the efficient determination of new proposals. To address this, the **Government will equip organisations across the planning system with the tools they need, including the Planning Inspectorate, statutory consultees and local planning authorities.**

Firstly, and in the immediate term, we will enable organisations to better flex and prioritise their headcount so that they can examine mission-critical onshore wind projects faster. We will also review headcount in key organisations to determine whether they are suitable for handling an increased number of projects in the coming years, including the Planning Inspectorate and departmental consenting teams.

Secondly, we will expand cost-recovery mechanisms across relevant regimes to ensure that all organisations key to consenting have sustainable resourcing models which can match the demand of onshore wind projects in the system into the future.

And thirdly, we will complement these changes through the delivery of an enhanced onshore wind training package. We will work with the Planning Advisory Service, Royal Town Planning Institute, Local Government Association and Planning Inspectorate to design a training package on onshore wind that can be universally administered, including on-site opportunities. This will ensure that the planning profession is well prepared for the first tranche of new onshore wind planning applications in England. This training opportunity will also be offered to relevant statutory consultees such as Natural England and the Environment Agency, as well as other professional bodies such as Institute of Sustainability and Environmental Professionals.

ACTION 9: THE GOVERNMENT WILL DELIVER PLANNING POLICY GUIDANCE TO SUPPORT THE REPOWERING AND LIFETIME EXTENSION OF EXISTING SITES

Action owner: *DESNZ lead with MHCLG support* **Delivery timeline:** *Autumn 2025*

Sustaining our current fleet of onshore wind is important: failure to do so would mean significant loss of existing cheap electricity generation. It would also mean having to build new infrastructure elsewhere as a replacement, which would in turn increase pressure on the environment and local communities. Repowering of onshore wind sites also provides us with a real opportunity to maximise the benefits from our existing fleet of onshore wind projects by enabling them to replace older turbines with newer, more efficient models, thereby increasing capacity without increasing land use.

The National Planning Policy Framework makes clear the benefits of re-using existing onshore wind and other renewable sites. To complement this, the **Government will include detailed information to developers and planning authorities in updated Planning Practice Guidance (see action 7, above) on how this policy should be interpreted** for onshore wind.

THEME 2 – NETWORKS AND SYSTEM PLANNING

Theme overview

Alongside project scoping and consenting, an onshore wind developer must apply to connect to the electricity network. However, areas that are attractive to onshore wind developers – those with the highest wind speeds and availability of land space – tend to be remote from existing network infrastructure and away from demand centres. This can have implications for network connection costs and timelines, exacerbated when there is increased demand for connections across the system. Data collected via the Onshore Wind Industry Taskforce suggests that it is not uncommon for onshore wind projects to receive grid connection offers that are beyond 2030 or, in some instances, beyond 2035. This can also pose challenges to network companies when maintaining transmission and distribution networks. In turn, project viability can be affected when use of system charges (used to recuperate costs of network build and maintenance) become more expensive.

The Government is committed to taking urgent action to ensure that the grid we need is in place to support low-carbon generation such as onshore wind. We will accelerate network build and ensure that:

- Connection dates are fair, reflective of need and predictable, with timely delivery; and
- Network charges are fair, reflective and predictable, and do not inadvertently inhibit the deployment of onshore wind projects in locations where they are deemed suitable according to other factors (in particular land availability and wind resource), while taking account of system impacts.

We also acknowledge the concern industry have raised on grid issues in Wales and are exploring these issues with NESO and the Welsh Government. The Onshore Wind Council (see later implementation section for more details) will relay updates that arise from this engagement to Council members.

Connections reform

Competition for grid access is increasing significantly. Projects in some constrained areas of the network are being given connection dates in excess of a decade into the future, deterring investment and delaying deployment. As of March 2025, there were 771GW worth of projects holding connection contracts across the transmission and distribution network, including 598GW at transmission and 173GW on the distribution network[18]. Long connection timescales continue to delay investment in generation and storage projects, and timely electrification of the wider economy.

Connection customers also experience cost increases and connection delays post-acceptance of a connection offer. These can lack notice, transparency and clear justification from network companies. Analysis completed by EDF Renewables, RenewableUK and Baringa suggested that it is not uncommon for the impact on developers to reach approximately £1 million per month of grid connection delay, when considering loss of revenue and increased costs[19].

The Government recognises that significant reform is needed to ensure connection to the grid is not a blocker to our clean power goals or wider economic growth.

ACTION 10: THE GOVERNMENT WILL WORK WITH OFGEM, NESO AND NETWORK COMPANIES TO CONTINUE TO PROGRESS RADICAL CONNECTIONS REFORM

Action owner: *DESNZ, Ofgem and NESO* **Delivery timeline:** *Revised connection offers for pre-2030 connections expected from September to January 2026, with remaining post-2030 connection offers issued by May 2026.*

Many of the projects in the grid connections queue are speculative or do not have the necessary funding or planning permission to progress, causing unacceptable connection delays for viable projects behind them. Action is needed to rationalise the queue and accelerate viable projects that meet our strategic needs.

The Government is therefore committed to a fundamental and urgent reform of the connections process, as set out in the Clean Power Action Plan. The Plan included connections capacity allocations for onshore wind for 2030 and 2035, with regional breakdowns for England and Wales, and Scotland, to help align the connection queue with 2030 Clean Power. Ofgem approved National Energy System Operator (NESO)

18 https://www.energynetworks.org/industry/connecting-to-the-networks/connections-data

19 Independent analysis completed by EDF Renewables, RenewableUK and Baringa to support the Onshore Wind Taskforce. Not a Department for Energy Security and Net Zero statistic.

proposals on 15 April 2025[20] to prioritise viable projects in the connections queue that meet our strategic needs. NESO will request evidence from developers on the status of transmission projects from July (DNOs requested evidence for distribution projects from May). Following network impact analysis, revised connections offers are expected to be issued from Autumn 2025 through to mid-2026.[21]

The Government is aware that some members of the Onshore Wind Taskforce have expressed concerns that the onshore wind capacity allocations for Scotland in the Clean Power Action Plan[22] are too low compared to the pipeline of projects, particularly for 2031-35. Under the reformed connection process, NESO will be able to address shortfalls in supply or attrition by allocating spare capacity to neighbouring regions and/or across transmission and distribution. However, any additional allocation for onshore wind in Scotland would need to consider the impact on constraint costs, which are recovered from consumer bills. The Strategic Spatial Energy Plan, expected to be published in late 2026, will allow for further optimisation of the network including potentially increasing the 2035 capacity ranges, if needed.

ACTION 11: OFGEM WILL CONSIDER SHARPER OBLIGATIONS AND INCENTIVES ON NETWORK COMPANIES TO HOLD THEM TO ACCOUNT FOR CHANGES IN CONNECTION COSTS AND TIMESCALES

Action owner: *Ofgem* **Delivery timeline:** *Summer 2025*

Data collected from the Onshore Wind Taskforce suggested that many onshore wind developers had been affected by variable costs and connection dates, with knock on effects for project deliverability. Evidence was provided of connection dates being delayed by as much as 5 years, and costs increasing by up to 150% of the original estimated price in connection liabilities.

To help address this, Ofgem is undertaking a review of the connections incentives and obligations ("the end to end review") for NESO and network companies with a view to improving customer service and reducing connection times. Ofgem has published a consultation (closed 13th February) and expects to publish its next steps in summer 2025.

20 https://www.ofgem.gov.uk/decision/decision-connections-reform-package-tm04

21 https://www.neso.energy/industry-information/connections-reform

22 https://assets.publishing.service.gov.uk/media/6776751e6a79200ddfa21b83/clean-power-2030-action-plan-connections-reform-annex.pdf

Network charging

Transmission Network Use of System (TNUoS) charges recover the costs incurred by the Transmission Owners (TOs) in providing, maintaining, and developing the electricity transmission system. These charges are levied on both generation and demand, with NESO being responsible for recovering the revenue.

This cost recovery is partly locational in nature, with tariffs for generators varying across 27 generation zones. This provides a locational signal to generators. Due to factors such as high wind resource and the historic de facto ban on onshore wind in England, 90% of the current onshore wind pipeline is located in Scotland[23]. Generators in Scotland pay higher charges than counterparts in England and Wales, reflecting the higher level of transmission investment they drive as they are located further from centres of demand. This results in some of the most productive onshore wind assets facing the highest charges, although it should be noted that these assets can be significantly constrained at times due to insufficient capacity on the transmission network to transmit their output to centres of demand.

The growing network charging differential between southern and northern sites in Great Britain (and within Scotland itself) is leading to a higher levelised cost of electricity for future onshore wind projects in Scotland. In addition, the uncertainty caused by the volatility of future TNUoS projections is causing an increased cost of capital for onshore wind. Independent analysis completed by EDF Renewables, RenewableUK and Baringa estimated that a typical 100MW onshore wind project in Northern Scotland has seen TNUoS forecast increases by 27% since Contract for Difference Allocation Round four[24].

23 Based on the latest (January 2025) REPD publication: Renewable Energy Planning Database: quarterly extract – GOV.UK

24 Independent analysis completed by EDF Renewables, RenewableUK and Baringa to support the Onshore Wind Taskforce. Not a Department for Energy Security and Net Zero statistic.

ACTION 12: OFGEM AND GOVERNMENT WILL EXPLORE OPTIONS FOR PROVIDING CERTAINTY ON TNUOS CHARGES FOR GENERATORS

Action owner: *Ofgem and DESNZ*
Delivery timeline: *Ongoing*

The cap and floor (CMP444) is planned to be a temporary measure until succeeded by wider charging reforms (consistent with decisions on spatial planning, REMA, connection reform and seabed leasing) in the 2030s. It is intended to alleviate industry uncertainty and minimise costs for consumers.

On 20 May Ofgem announced that they will publish their "minded-to" decision on CMP444 late June/early July.

The Government is looking to conclude the policy development phase of the Review of Electricity Markets Arrangements (REMA) programme by mid-2025 and will ensure that these REMA timelines align with the timetable for the next CfD allocation round (AR7). Ofgem is considering the role and structure of network charging, and intends to update on the direction of travel following a Government decision on REMA.

Costs of reinforcement

In recent years, the significant increase in connection agreements has led to a commensurate increase in requirements for new or upgraded transmission assets, leading to an increase of attributable enabling transmission reinforcement works across Great Britain. The costs associated with transmission reinforcement works triggered by connections on the distribution networks are recovered from the relevant Distribution Network Operator (DNO), in accordance with the Connections Use of System Code (CUSC). It has been identified that the funding of these costs by DNOs is inconsistent, resulting in some distribution connection customers being required to contribute, while others are not.

ACTION 13: OFGEM AND NETWORK COMPANIES WILL CONTINUE TO REVIEW CHARGING ARRANGEMENTS FOR SUPERGRID TRANSFORMERS.

Action owner: *Ofgem* **Delivery timelines:** *Mid to late 2025*

Some Taskforce members raised concerns that cost recovery of supergrid transformers, in particular from distribution connection customers, is deterring investment. Options for recovery could include costs being fully socialised through transmission network or distribution use of system charges, or through an alternative solution, to help share the costs when distribution connections trigger wider works at transmission-distribution grid supply points.

Ofgem, ENA and wider industry are considering how best to progress this to resolution, noting the significant external dependency on REMA and other areas of charging reform. Ofgem will provide an update later in 2025.

Strategic energy planning

Promoting anticipatory network investment is essential to enabling the reduction of waiting times for onshore wind projects to connect to the grid. To achieve this, greater certainty as to the location and mix of technologies is needed. Therefore, our view is that a centralised strategic spatial and network planning approach is critical for delivering on our onshore wind ambitions, and broader Clean Power Mission.

ACTION 14: WE WILL DELIVER THE STRATEGIC SPATIAL ENERGY PLAN AND CENTRALISED STRATEGIC NETWORK PLAN

Action owner: *NESO, Ofgem, DESNZ* **Delivery timeline:** *SSEP end 2026, CSNP 2027.*

Onshore Wind Taskforce members highlighted that certainty in terms of the Government's deployment plans is key to a functioning supply chain and projects being deployed effectively.

The Strategic Spatial Energy Plan (SSEP) will support a more actively planned approach to energy infrastructure across England, Scotland and Wales, land and sea between 2030 to 2050. It will do this by assessing and identifying the optimal locations, quantities and types of energy infrastructure required for generation and storage, including onshore wind, to meet our future energy demand with the clean, affordable and secure supply that we need.

The Centralised Strategic Network Plan (CSNP) will build on the SSEP by making comprehensive transmission network recommendations extending out to 2050. The CSNP will provide certainty on the needs case and strategic parameters of transmission reinforcements to help the planning and consenting, regulatory, and supply chain processes.

THEME 3 – COMMUNITIES AND PUBLIC PERCEPTION

Theme overview

Whilst public support for onshore wind is high, this does not always translate into proactive support for onshore wind projects at the local level. Collective objections to onshore wind projects can slow the consenting and development process and even lead to project termination. This is reflected in Government polling – the Public Attitudes Tracker shows that, whilst 77% of people are supportive of onshore wind in theory, only 43% say that they would be happy for a project to be proposed in their local area. On the other hand, only 14% would be unhappy for a project to be proposed in their local area, with 32% of people neutral – who either do not mind or do not know enough about the technology.

This shows that there is room to further enhance the relationship between onshore wind developers and local community stakeholders. This can be achieved through exhibiting best practice engagement and participation principles, enabling local communities to benefit directly from sites that they host, and supporting a better flow of information. The Government is committed to ensuring that:

- **Communities are empowered:** Communities are active agents, empowered to participate in and develop their own local or community projects;
- **Engagement is meaningful:** Communities and developers work together through early engagement and thoroughly in all parts of the development process, and communities

have the skills, resources and support to take part in conversations effectively;
- **Information is transparent:** There is consistent and factual information available on the need for, and benefits and impacts of, onshore wind deployment; and
- **Benefits are bespoke:** Communities and developers work together to ensure that there are high-quality, tangible benefits that are tailored to the unique local goals and objectives, leaving a long-lasting legacy.

Engagement and community benefits

Onshore wind projects are predominantly built in open and exposed areas near rural towns and villages. It is normal for the hosting communities to hold some reservations about the deployment of this critical infrastructure in their local area. It is therefore critical for the onshore wind developer to engage early with the local community, ensure that they seek out views from all of those affected, and be transparent with their plans. Not only does good engagement allow for the community to learn more about the proposal, but this also allows for the developer to learn more about the community and take their views into account when siting and designing the project. Good, early engagement can negate delays incurred later in the project by creating better relationships with the community.

Another concern that some communities have when an onshore wind farm is proposed in their local area is that they may not benefit directly from hosting the site. Whilst onshore wind farms can deliver local benefits through supply chain investment and employment, for instance, these types of benefits are not always felt by everyone in the community.

To address this, a practice has been established whereby onshore wind developers voluntarily provide direct community benefits schemes to the local community. Community benefits are distinct financial packages that are separate from the other benefits that communities might derive from hosting an onshore wind site, such as local employment or supply chain opportunities. Community benefits are typically paid by the developer into a community fund or trust, which is then managed and administered by an independent organisation or committee made up of representatives from the local area. Other innovative practices are emerging in the delivery of community benefits, whereby developers pay community benefits in kind (such as investing directly in local infrastructure), offer the community a stake in the wind farm itself (shared ownership) or make direct payments to households (such as in the form of local bill discounts).

COMMUNITY BENEFITS CASE STUDY

Tallentire Wind Farm, England

Installed Capacity: 12 MW

Annual Budget: £60,000 (split between a £2,000 per MW community fund and a £3,000 per MW Local Electricity Discount Scheme (LEDS))

Inflation Index Linking: Each year in line with inflation (CPI)

Management Form: RES manages the local electricity discount scheme, Cumbria Community Foundation administers the community benefit fund (£24,000 p/a)

History: Developed by RES and now owned by The Renewables Infrastructure Group (TRIG); Operated by RES since 2013

RES was the first company to introduce a scheme that delivers direct benefits to households through their Local Electricity Discount Scheme (LEDS) in 2013. RES now manages LEDS at 30 participating operational wind and solar farms in the UK. In total 30,000 payments have been made to properties, delivering more than £6 million in direct benefit to households. LEDS payments are made directly to the electricity supplier of the household, to ensure that the money is used for its intended purpose. Participation in the scheme is voluntary and is not linked to any particular supplier or tariff, with special arrangements made for any qualifying properties using electricity pre-payment meters to provide energy credit vouchers or top-ups (as applicable).

Tallentire Wind Farm (12MW), The Renewables Infrastructure Group (TRIG), England:

Tallentire Wind Farm is a 12MW project in Cumbria, England. The project is owned by TRIG and operated by RES. The project delivers direct community benefits to the local community via LEDS for properties within 2km of the turbines. The annual discount is index-linked annually. In 2024, eligible properties benefitted from a discount of £145. The project also provides a community benefit fund of £24,000 per year, totalling a community benefit package worth around £60,000 per year. LEDS was launched for Tallentire in May 2013, and provided its first payments directly to households in 2014, once the wind farm was fully operational. Any surplus LEDS funds are used to increase the annual community fund contribution.

Photo: Tallentire Wind Farm by Callum Whiteford for RES

Community benefits not only act as an important way for the community hosting the wind farm to directly benefit from the cheap, clean electricity that is generated – but also represents a substantial opportunity arising from our decarbonisation ambitions. A typical 25MW wind farm paying the industry standard of £5,000 per MW of installed capacity, per year, could deliver £3.75m of funding to be re-distributed amongst the community on local initiatives of their choosing over a 30-year operating life. If we deliver 29GW of onshore wind by 2030 we could unlock around £70m of additional private investment into our rural towns and villages every year.

ACTION 15: THE GOVERNMENT WILL FORMALLY EMBED BEST PRACTICE PRINCIPLES OF ENGAGEMENT INTO PLANNING GUIDANCE IN ENGLAND TO ENSURE THAT PRE-APPLICATION CONSULTATION IS UNDERTAKEN TO THE HIGHEST STANDARDS

Action owner: *DESNZ with MHCLG support* **Delivery timeline:** *Autumn 2025*

In 2021, following extensive primary and secondary research, Government updated Good Practice Guidance for England regarding community engagement for onshore wind developments. The guidance identified core principles that all developers should follow when they are engaging with the local community.

To more formally draw the line between best practice and the requirements on developers to conduct mandatory pre-application consultation under the Town and Country Planning Act the Government will embed these principles of engagement into planning practice guidance in England. This will ensure developers are clear on the expectations, while retaining flexibility, when consulting with the local community on their plans they do so in a transparent manner, consult with a representative cross-section of the community, and engage often and always, using a range of techniques.

ACTION 16: THE GOVERNMENT WILL CONSIDER MANDATING FOR THE PROVISION OF COMMUNITY BENEFITS IN GREAT BRITAIN

Action owner: *DESNZ* **Delivery timeline:** *Consideration of mandating options in 2025. If taken forward, legislating to come into force late 2027 (at the earliest).*

We want to make sure that local communities benefit from hosting new clean energy infrastructure. The onshore wind industry already does this as a matter of course, voluntarily offering generous community benefits packages that allow for communities to invest in local initiatives of their choosing. Such is the maturity of this practice, that other industries look to the onshore wind industry as the pioneer. Whilst this practice is widespread and conducted to high standards in the onshore wind sector, it is inconsistent across other energy sectors and locations.

Government therefore wishes to consider introducing a mandatory obligation on developers of energy infrastructure projects in Great Britain to provide community benefits. Government published a working paper on this topic in May 2025.

ACTION 17: THE GOVERNMENT WILL PUBLISH AN UPDATE TO THE 2014 COMMUNITY BENEFITS PROTOCOL AND FORMALLY ADOPT IT AS GOVERNMENT GUIDANCE FOR ENGLAND

Action owner: *DESNZ* **Delivery timeline:** *Spring 2025*

In 2013, RenewableUK published an updated industry protocol that set an expectation for developers to pay community benefits to the value of £5,000 per MW of installed capacity, per year. Since the publication of the protocol, however, community benefits from onshore wind have evolved. Developers are now offering more innovative and community-friendly benefits packages such as local bill discounts or shared ownership. The proliferation of best practice means there are more case studies to draw from and a greater opportunity to standardise.

Government has therefore taken ownership of the Community Benefits Protocol for England and will publish an update in June 2025. The updated community benefits guidance details best practice models for benefits schemes such as community benefit funds, local electricity bill discounts and shared ownership; signpost to support available to communities when co-designing and administering funds; and includes a resource kit for communities with detailed case studies and example documentation.

Local ownership and participation

Enabling local communities and businesses to own or co-own wind turbines can deliver substantial socio-economic benefits. It can support the generation of income for re-distribution amongst the community, and support businesses to reduce their reliance on expensive and dirty fossil fuels – allowing for cost savings and the meeting of internal decarbonisation objectives. It also facilitates participation in and education about the net zero agenda, cultivating long-term goodwill and ensuring sustainability. In England, with the removal of the planning ban there is now a substantial opportunity to secure local socio-economic benefits of onshore wind deployment by:

1. Facilitating the development of smaller scale, 100% community owned onshore wind projects;
2. Enabling communities to uptake options for shared or part ownership of large, utility-scale onshore wind projects; and
3. Facilitating the deployment of onshore wind turbines to support businesses.

However locally owned onshore wind projects can be difficult to build. Even though most locally owned onshore wind projects are comprised of 1 or 2 turbines, the costs are substantial. Data collected via the Onshore Wind Industry Taskforce indicates that a small 5MW project can cost as much as £300,000 to design and submit a planning application, and over £5m to then purchase and install the infrastructure. Operational costs can run to hundreds of thousands of pounds per year.

To build onshore wind projects local stakeholders therefore need financial support; be it seed funding to get a project off the ground, access to low-cost finance to purchase and install equipment, or both. In some instances, it may be easier for local stakeholders to work in partnership with developers to take co-ownership stakes in larger, utility-scale sites. Either way, local stakeholders also need the technical and legal skills to be able to design and negotiate throughout the development process.

ACTION 18: THE GOVERNMENT WILL REVIEW THE 2015 COMMUNITY ELECTRICITY RIGHT

Action owner: *DESNZ* **Delivery timeline:** *Ongoing*

The Community Electricity Right was included in the Infrastructure Act 2015. These provisions give the Secretary of State a power to make regulations giving individuals resident in a community or groups connected with a community (or both) the right to buy a stake in a renewable electricity generation facility that is located either in the community (if it is a land-based facility), or adjacent to the community (if it is an offshore facility). This power has not yet been exercised. Government has a duty to carry out a review of the Community Electricity but has not yet done so.

Government **published a working paper in May 2025** seeking to gather evidence on the benefits and barriers of shared ownership, including considerations of the Community Electricity Right. Feedback to this call for evidence will support a formal review of the Community Electricity Right, with Government's policy position set out thereafter. The Government is committed to work with Wales and Scotland, building on the work which has already taken place.

ACTION 19: GBE WILL SUPPORT LOCALLY OWNED RENEWABLE ELECTRICITY PROJECTS THROUGH DELIVERY OF THE LOCAL POWER PLAN

Action owner: *GBE* **Delivery timeline:** *Ongoing*

Locally owned onshore wind has the potential to be an essential contributor to the energy mix, whilst simultaneously ensuring that communities benefit from clean power projects. However, we know that there are substantial barriers that can make it difficult for local communities to finance onshore wind projects. Communities need seed funding, longer-term low-cost finance, and a route to market. To address this, **Great British Energy will support delivery of community and locally owned renewable electricity projects across the UK.** Through the Local Power Plan, and by partnering with and providing funding and support to local government, Combined Authorities and Community Energy Groups, the GBE will support the roll out of onshore wind projects alongside other renewables such as Solar PV.

GBE will also provide commercial, technical and project-planning assistance, increasing the capability and capacity of local government and community groups to build a pipeline of successful projects in their local areas. GBE and DESNZ will work to ensure there is coherence with other existing public sector advisory functions, funding and finance organisations operating in the local energy space.

Communications and public messaging

Prior to the removal of the de facto ban on onshore wind, the Government has not issued any positive signals of intent on onshore wind in England for almost 15 years. In the absence of a clear strategy, the discussion around onshore wind has become more influenced by misconceptions of the negative impacts of the technology, with no clear narrative on the benefits as a counterbalance. This is inhibiting the quality of local conversations and decision-making. An over focus on some issues over others can slow down deployment and comes at a cost of time and money to the onshore wind developer, local authority, and community. We need to achieve a greater balance such that local conversations are more efficient and focus on what really matters to the community in the context of the relevant development.

ACTION 20: THE GOVERNMENT WILL PUBLISH A NET ZERO PUBLIC PARTICIPATION STRATEGY

Action owner: *DESNZ* **Delivery timeline:** *2025*

At the national scale, messaging is needed to set out why we need more onshore wind and what the benefits of more onshore wind are. **Government will publish a net zero public participation strategy in 2025**. The Strategy will set out the Government's approach to empowering individuals and communities to help tackle the climate crisis and access the benefits of the net zero transition – including on onshore wind – while ensuring their voices are heard in shaping net zero policies and initiatives. We are working closely with the devolved governments as we develop this strategy.

ACTION 21: DELIVERY OF TARGETED, STRATEGIC REGIONAL COMMUNICATIONS CAMPAIGNS

Action owner: *RenewableUK in partnership with wind industry* **Delivery timeline:** *2026*

At the regional scale there is the potential to zero-in with more specific messaging tailored to circumstance. Areas where there is scope for onshore wind development and a known pipeline of projects would benefit from accurate information about what the projects will bring in terms of economic investment and what some of the likely impacts are or are not. Whilst not referencing project specifics, communications need to be accurate at an aggregated scale to make the messaging truthful and accurate for that locality. Whilst Government can support with some of the framing (see action 20, above) it cannot achieve this alone. People also look to businesses, charities, scientists and local communities for advice and support. We have an opportunity to work in partnership with these organisations to provide information, and help people access the benefits of the net zero transition.

To support this, RenewableUK will work with colleagues in Scotland and Wales, and the wind industry to:

i. Co-ordinate communications campaigns to complement the existing consultation work that developers already do with communities at a project level; and

ii. Develop a series of regional press and community communication briefings alongside trusted regional NGOs, community energy organisations, and charities to support national government communications campaigning on net zero.

THEME 4 – AVIATION AND DEFENCE

Theme overview

Onshore wind turbines can interfere with the operation of civil aviation and defence infrastructure, such as by causing physical obstruction or by showing up as false positives on communications, navigation or surveillance equipment.

To manage the safeguarding implications of onshore wind turbines, operators of civil aviation or defence infrastructure (known as Air Navigation Service Providers, or 'ANSPs') are permitted to raise objections to onshore wind planning applications. In instances where objections are raised, the affected developer must work with the relevant operator to agree and deliver a solution. This process can be costly and time-consuming, and if a solution is not available or is too expensive, it can ultimately prevent projects from progressing to construction and operation, with planning permission expiring as a result.

DESNZ analysis of the Renewable Energy Planning Database (REPD)[25] shows a rise in the proportion of onshore wind projects with expired planning permission. Of the onshore wind projects that received consent to build in 2010, only 4% went on to have their planning permission expire. In 2020, that figure was around 40%. Whilst this increase has been driven by a number of variables (including grid connection delays) addressing the time and cost associated with resolving planning objections from aviation and defence stakeholders is a key priority for this

25 Data taken from the Renewable Energy Planning Database: Renewable Energy Planning Database: quarterly extract – GOV.UK

Government. The 2023 Survey of Onshore Wind Impacts on Aviation and Defence indicated that up to 10GW of the future onshore wind pipeline is either currently or anticipated to be affected by objections on the grounds of interference with aviation and defence infrastructure.

Equally, Government considers it important that policy and regulation continues to allow for the safeguarding of aerodrome and defence infrastructure and procedure to support national defence and security and avoid aerodrome closure, loss of life, or infringement of international law.

Government will therefore ensure that:

- There is consistent, good-quality data collected regularly on the level, type, and location of civil or defence-based planning objections to onshore wind projects, including costs of resolution;
- There is a clear and simple process that enables the review of solutions to the issue of turbine interference with defence-based RADAR systems.
- The process for identifying and addressing civil or defence-based planning objections is fair, open, and transparent, with all stakeholders clear on the reason for the required solution and the timelines and costs of delivery, including responsibility of paying for and resolving objections.

Transparency and data

The Onshore Wind Industry Taskforce identified some concerns with the process through which an Air Navigation Service Provider (ANSP) and an onshore wind farm developer negotiate a mitigation solution. Industry felt that:

- There is limited visibility over which projects are likely to be objected to, and on what grounds;
- It is not clear how the impacts of onshore wind projects on ANSP services are calculated;
- It is not clear why some mitigations are requested over others; and
- It is felt that the costs of mitigation solutions are disproportionate.

Equally, aviation and defence stakeholders believe that there is a lack of understanding amongst onshore wind developers as to the technical, process and regulatory requirements that determine safeguarding thresholds.

This was supported by data collected from the Onshore Wind Taskforce, in which over 60% of respondents identified a ‘lack of transparency in decision-making’ as a key contributing blocker to the resolution of aviation objections (civil).

This intelligence gap has begun to play out at the granular level, with more projects challenging aviation and defence ANSP decision-making, leading to resourcing challenges and consenting delays. At the national level, being able to quantify the extent of aviation and defence-based objections to onshore wind projects, as well as understand some of the cost and resourcing implications, is becoming critical for designing targeted policy interventions.

ACTION 22: THE GOVERNMENT WILL COMMISSION AN ANNUAL SURVEY OF ONSHORE WIND IMPACTS ON AVIATION AND DEFENCE INFRASTRUCTURE.

Action owner: *DESNZ* **Delivery date:** *Spring 2026*

Better data is needed on the volume of the onshore wind pipeline that is or will be subject to planning objections in relation to aviation and defence, and that qualifies the type, cost, or timelines associated with discharging subsequent planning conditions. To address this, we will commission an annual survey to collect data on aviation and defence objections to onshore wind planning applications, including costs of mitigation solutions

ACTION 23: THE GOVERNMENT WILL DEVELOP BEST PRACTICE GUIDANCE ON USE OF NON-DISCLOSURE AGREEMENTS (NDAS) WHEN RESOLVING AVIATION OBJECTIONS.

Action owner: *Civil Aviation Authority (CAA) with support from DfT and DESNZ*
Delivery date: *Autumn 2025*

The wide-spread use of Non-Disclosure Agreements (NDAs) in Radar Mitigation Scheme Agreements (RMSAs) limits understanding on: what ground a project has been objected to; why some mitigations are requested over others; and whether the subsequent payments developers are required to make to ANSPs are reflective of the true costs incurred. This can impact the ability of ANSPs and developers to identify and implement suitable mitigations in a timely and cost-effective manner, with risks that the deployment of onshore wind is delayed and cost inefficiencies are borne by the consumer. To address this, we will develop best practice guidance to set out clear expectations for both ANSPs and developers on when and how NDAs should be used when mitigating aviation objections through RMSAs.

Military air traffic control radar

When an onshore wind development is proposed in the vicinity of an MoD site and is deemed to pose risks to its air traffic control (ATC) operations (and possibly air defence radar), the affected onshore wind developer must work with the MoD via the 'three phase process' to identify and test a range of potential solutions, before implementing a selected enduring solution. To commence the three-phase process, the developer would first demonstrate that there is a working 'interim solution' that meets minimum safeguarding requirements at the affected site; that is a 'tolerable' mitigation for the MoD. MoD manage the process of finalising interim and enduring solutions via a series of contractual arrangements (Radar Mitigation Scheme Agreements, or RMSAs) with developers and 'approved suppliers' on a project-by-project basis, whereby the developer must commit to costs up front. A developer cannot secure Final

Investment Decision (FID) and progress to construction without an RMSA in place.

The efficacy of this process is therefore dependent on the technical capabilities of available technologies. However, there is not currently anything on the market that is known to satisfy the minimum safeguarding requirements. This is a 'catch-22' for onshore wind developers: to trial and then implement working solutions they must first demonstrate that there is a working solution. Under the current environment, therefore, planning objections in relation to wind turbine interference of MoD air traffic control RADAR are in the majority of cases an absolute barrier to development.

The 2023 Survey of Onshore Wind Impacts on Aviation and Defence indicated that around 2GW of the onshore wind pipeline had or was anticipated to be subject to planning objections from the MoD on the ground of wind turbine interference with air traffic control RADAR.

ACTION 24: THE GOVERNMENT WILL CO-ORDINATE A DEVELOPER-FUNDED PROGRAMME OF TRIALS TO TEST A RANGE OF POTENTIAL SOLUTIONS TO ONSHORE WIND TURBINE INTERFERENCE WITH MOD AIR TRAFFIC CONTROL RADARS

Action owner: *MoD with DESNZ support* **Delivery timeline:** *Ongoing*

The co-existence of onshore wind farms and military Air Traffic Control (ATC) Primary Surveillance Radars (PSR) poses a significant challenge due to the lack of mitigation solutions. To overcome this, we must establish a collaborative approach between the government and industry, working together to define the process and find a solution.

Government will therefore create an MOD-led Military Aerodrome ATC Joint Task Force, funded by the Wind Industry. This approach mirrors the approach taken as part of the NJORD programme. The primary objective of this task force will be to assess all onshore wind farms in the pipeline that may impact MOD ATC PSRs and conduct trials to determine the effectiveness of potential technical mitigation solutions. This is subject to funding being agreed.

ACTION 25: THE GOVERNMENT WILL INTRODUCE A DEVELOPER-FUNDED, FULL-TIME POST IN THE MOD WITH RESPONSIBILITY FOR LEADING ON STRATEGIC SOLUTIONS TO ONSHORE WIND TURBINE INTERFERENCE WITH AIR TRAFFIC CONTROL RADAR

Action owner: *MoD and the Aviation Investment Fund Company Limited*
Delivery timeline: *Autumn 2025*

To lead the delivery of MoD ATC trials (see action 24, above), the Government will provide extra-resource to the programme with support from the Aviation Investment Fund Company Limited. This is subject to funding being agreed.

Civil aviation radar

The nature of civil air traffic and airspace is different and so, unlike in the case of defence, there are technological solutions available for onshore wind developers to use when addressing planning objections from civil ANSPs. However, there are concerns about the costs of mitigations being requested. Data collected from the Onshore Wind Industry Taskforce indicated that costs of mitigation solutions being requested by civil ANSPs can reach as much as £32,000 per megawatt per annum. A 25MW wind farm might therefore pay an airport as much £800,000 per year in mitigation costs – exceeding 100% of total annual running costs – expenditure which ultimately leads to a higher cost of electricity for the consumer. Often there is no agreement between the onshore wind developer and the ANSP on the identified impacts of the proposed development or on the extent of costs. Many projects can therefore be delayed when decisions are challenged.

Furthermore, whilst civil aerodromes are required to review their infrastructure on a regular basis, there is no requirement that equipment should be updated, nor that they should be updated with wind farm tolerant solutions, which vary in cost. In the challenging economic environment, civil aerodromes may opt for less expensive solutions or delay updates altogether. There is therefore an opportunity for civil aerodromes to install wind farm tolerant technological solutions up-front.

ACTION 26: THE GOVERNMENT WILL EXPLORE CREATING A NEW POST IN THE CIVIL AVIATION AUTHORITY WITH RESPONSIBILITY FOR PROVIDING NEUTRAL AND OBJECTIVE ADVICE FOR STAKEHOLDERS AND FACILITATING DISCUSSIONS TO ASSIST RESOLUTION OF AVIATION SAFETY CONCERNS ASSOCIATED WITH PROPOSED DEVELOPMENTS

Action owner: *CAA, DESNZ and DfT* **Delivery timeline:** *Spring 2026*

The current process of identifying and implementing mitigation Radar Mitigation Scheme Agreements (RMSAs) is leading to a large number of challenges being raised by developers through public inquiries, causing delays in the deployment of onshore wind and cost inefficiencies. A third party is required to facilitate engagement between developers and ANSPs and assure that RMSAs are fair and that costs are proportionate. Additionally, greater resource is required to identify policy issues associated with onshore wind turbine interference. Therefore, we will explore the creation a new post in the CAA with responsibility for aiding local discussions on aviation objections and maintaining oversight of the policy issues, subject to funding being agreed.

ACTION 27: THE GOVERNMENT WILL REVIEW AND PUBLISH UPDATED CAP764 GUIDANCE AND CONSIDER WHETHER ADDITIONAL BEST PRACTICE GUIDANCE IS REQUIRED TO AID INTERPRETATION

Action owner: *CAA* **Delivery timeline:** *Autumn 2025*

CAP764 guidance provides advice to airports on the policy treatment of wind turbines and was last updated in 2016. The current policy landscape has changed significantly since then and CAP764 is not considered to be comprehensive enough to ensure consistency and transparency of approaches, which results in uncertainty for developers and aviation stakeholders. Therefore, we will review and publish updated CAP764 guidance to provide clearer guidelines on how airports manage interference from onshore wind developments. This will encourage greater transparency and engagement between ANSPs and developers and improve the process by which solutions to aviation objections are identified and implemented.

ACTION 28: THE GOVERNMENT WILL CONDUCT A REVIEW OF AIRSPACE REGULATIONS TO CONSIDER OPTIONS TO REQUIRE CIVIL AERODROMES TO PROCURE NEW PRIMARY SURVEILLANCE RADARS THAT HAVE WIND FARM MITIGATION CAPABILITIES

Action owner: *CAA and DfT* **Delivery timeline:** *Autumn 2025*

Currently, airspace regulations do not provide any requirement on aerodromes when procuring new equipment to consider the capabilities of primary surveillance radars to mitigate against wind farms. Advances in radar technology may allow for greater instruction to aerodromes so that wind farm tolerance is built into future procurement strategies. To consider this, the CAA and DfT (with engagement from the Military Aviation Authority) will conduct a review to determine whether it is possible to mandate wind farm tolerance as standard when new radars are procured. This review will consider what wind farm tolerability means in practice, including a review of available technologies and international best practice. The review will also consider whether amendments to legislation or means of compliance can deliver the requirements, or whether an alternative form of delivery is necessary. The CAA and the DfT will report back to the Onshore Wind Industry Council with a formal recommendation in Autumn 2025 (see “Implementation” section for more detail on the Onshore Wind Council)

ACTION 29: THE GOVERNMENT WILL EXPLORE THE CREATION OF A ‘MITIGATION FUND’ TO ISSUE FINANCIAL SUPPORT TO CIVIL AIRPORTS WHO REQUIRE RADAR UPGRADES

Action owner: *DESNZ* **Delivery timeline:** *Spring 2026*

Aviation objections are dealt with on a case-by-case basis with costs reaching up to £10 million per project, usually paid in full by developers. Often Non-Disclosure Agreements (NDAs) conceal how these costs are calculated. This approach encourages the implementation of solutions limited to mitigating the current objection, providing little incentive for substantial upgrades to hardware or software, that might deliver more permanent solutions. A standardised and transparent process to funding mitigation solutions is required to: I) set clear expectations for both airports and developers around the process, cost and timelines to mitigate aviation objections; II) ensure cost neutrality; and III) protect the billpayer from RADAR mitigations. A centrally managed funding process may encourage a more fair and transparent practice to upgrading civil RADAR systems.

Therefore, we will further explore a non-Government-funded RADAR Mitigation Fund as a possible innovative solution to both streamline the process and ensure costs are equitable. A final decision on who would fund the proposal, and whether a mitigation fund is established should be taken by the ONW Council.

Seismic interference (Eskdalemuir)

The Eskdalemuir Seismic Array (henceforth referred to as 'the Array') is a facility in southern Scotland monitoring seismological activity to address the UK's obligations under the Comprehensive Nuclear-Test-Ban Treaty (CTBT). Wind turbines produce seismic ground vibrations (SGV) which can interfere with the functionality of the Array. Since 2005 the Ministry of Defence (MoD) has managed a finite seismic noise capacity (referred to as the 'threshold') of SGV which is allowed before the detection capabilities of the Array are considered to be compromised.

To ensure the threshold is not breached, there is a 10km 'exclusion zone' around the Array where MoD will object to all wind farm applications, and a 50km circular 'consultation zone' where decision makers must consult with MoD, who then determine the availability of SGV budget. Whilst the majority of wind farm applications affected by the Array have been in Scotland, it is worth noting that approximately 15% of the consultation zone is in England, and given the removal of the de facto ban on onshore wind in England, this may affect future English projects.

In 2018 a proposed onshore wind project breached the threshold, and MoD has objected to all proposed wind farm developments within the 50km 'consultation zone' since. There is currently a known pipeline of 77 onshore wind projects at a total cumulative capacity of 3.4GW that are within the 50km consultation zone and are therefore unable to progress until this is resolved.[26] In addition, internal work undertaken for the Eskdalemuir Working Group estimates potential for a further 3GW of onshore wind that could be unlocked within the 50km consultation zone.

ACTION 30: WE WILL WORK WITH MOD AND SCOTTISH GOVERNMENT TO IMPLEMENT AN ENDURING SOLUTION TO BOTH UNLOCK ONSHORE WIND CAPACITY AROUND ESKDALEMUIR SEISMIC ARRAY AND UPHOLD NECESSARY SAFEGUARDING

Action owner: *DESNZ and the Scottish Government with support from MoD*
Delivery timeline: *End 2025*

DESNZ, MoD and Scottish Government are collaborating to update UK Guidance on Eskdalemuir.

Scottish Government and DESNZ will publicly consult by September before publishing updated guidance later in 2025 (pending consultation outcomes).

This consultation will seek views on the implementation of a Seismic Impact Limit (SIL), as well as an expansion of the current 10km 'exclusion zone', aiming to unblock onshore wind development within 50km of the Array whilst continuing to effectively safeguard the functioning of the Array.

26 Scottish Renewables, Scotland 2030 Pipeline Analysis, November 2024.

ACTION 31: WE WILL WORK WITH MOD AND SCOTTISH GOVERNMENT TO IDENTIFY AND IMPLEMENT AN APPROPRIATE ROUTE TO ENFORCE THE UPDATED APPROACH TO ESKDALEMUIR SEISMIC ARRAY

Action owner: *DESNZ and the Scottish Government with support from MoD*
Delivery timeline: *End 2025*

In the short term, UK Government and Scottish Government will both issue a Written Ministerial Statement in 2025, following the publication of the Scottish guidance on Eskdalemuir, to enforce the updated policy approach.

DESNZ, MoD and Scottish Government will work to identify if additional routes are necessary for enforcement of guidance, including introducing primary and secondary legislation, reporting into the Onshore Wind Council on this topic by Autumn 2025.

THEME 5 – FINANCE AND ROUTES TO MARKET

Theme overview

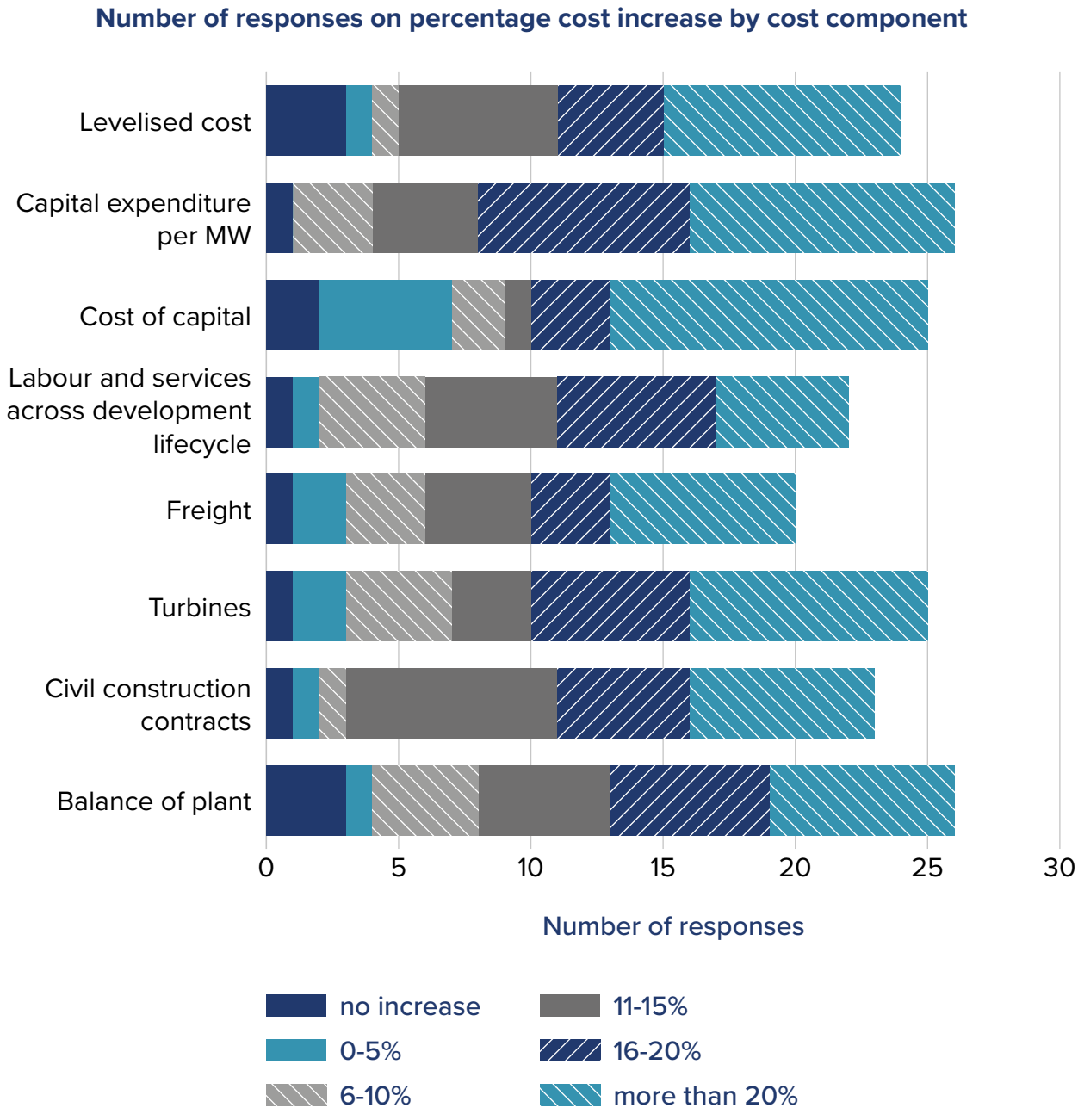
An onshore wind developer will need to seek investment to secure turbines, balance of plant equipment and construction contracts. Developers might raise capital through debt or equity, or a combination of the two. Developers will also need to seek agreements to sell electricity on the market at a price that enables the generation of revenue and a return on investment. There are different options available for developers to pursue, including:

- Bidding into the Contracts for Difference (CfD) Scheme to secure a strike price per megawatt of electricity generation. The CfD scheme is the primary mechanism for delivering onshore wind at scale.
- Securing price-certainty through signing Power Purchase Agreements (PPA) with utility providers or large corporations.
- Participating in the capacity market or selling power on a merchant basis.
- Seeking to use a combination of the above.

However onshore wind developers are facing a number of delivery challenges, including a higher base rate of interest compared to the previous decade, upward pressure on commodity prices and constraints in the supply chain, which have made some projects more expensive to build and less attractive to finance. These issues are exacerbated by some of the broader topics described earlier in this strategy, such as grid connection and planning delays.

For example, data collected by the Onshore Wind Industry Taskforce indicated that more than 50% of the respondents have experienced significant cost increases (more than 15%) in the last 3 years across all components leading to a significant increase in Levelised Cost of Electricity (LCOE). Whilst the onshore wind industry has exemplified resilience amongst these challenges, the increases to the underlying costs provide challenges for project delivery, including those with a CfD. A graph showing this data is below.

Figure six – Percentage cost increases by component, using data responses collected from Onshore Wind Taskforce members



ACTION 32: THE GOVERNMENT WILL ESTABLISH A JOINT INDUSTRY-GOVERNMENT 2030 PIPELINE AND DELIVERY GROUP WITH THE AIM TO IMPROVE HOW GOVERNMENT CAN RECOGNISE AND RESPOND TO KEY BARRIERS TO DEPLOYMENT ACROSS THE UK.

Action owner: *RenewableUK and DESNZ* **Delivery timeline:** *Summer 2025*

The Onshore Wind Industry Taskforce has highlighted the challenges of delivering the amount of onshore wind projects needed to meet the Clean Power Action Plan ranges, and that some projects are struggling to reach Financial Investment Decision (FID). The Government recognises that without targeted intervention, there exists a threat to the delivery of certain onshore wind projects that are essential to the clean power mission.

To boost the chance of meeting our ambitious decarbonisation targets, in collaboration with RenewableUK, **the Government will set up a 2030 pipeline and delivery group of onshore wind developers to maximise 2030 delivery**. This will be a subgroup of the Onshore Wind Council. The group will focus on identifying and monitoring specific challenges projects face, including those identified above, with the aim to improve how government can recognise and respond to key barriers to deployment. The group will take a data-driven approach, building on the independent analysis from EDF Renewables, RenewableUK and Baringa which was completed to support the Onshore Wind Taskforce, and investigate the actions that could be taken to unlock onshore wind projects in the pipeline.

Contracts for Difference

The Contracts for Difference (CfD) scheme is the Government's main mechanism for supporting low carbon electricity generation and the primary route to market for onshore wind. CfDs incentivise investment into renewable energy projects by providing developers with protection from volatile wholesale prices. A CfD not only allows a developer to attract investment into a project by guaranteeing a stable, long-term revenue stream, but it also protects consumers from paying increased support costs when electricity prices are high. The sixth CfD auction in 2024 awarded contracts to 128 new clean energy projects across Great Britain delivering 9.6GW of capacity[27], and since its inception the CfD scheme has awarded contracts to 5.1GW of onshore wind projects[28].

Yet industry, including the Onshore Wind Taskforce, has long been calling for CfD reform to ensure the mechanism is fit for purpose. This Government is committed to developing targeted reforms to the CfD mechanism to ensure it can support future renewable capacity, including onshore wind.

27 Contracts for Difference (CfD) Allocation Round 6: results – GOV.UK

28 Schemes Register

ACTION 33: GOVERNMENT WILL PUBLISH ITS RESPONSE TO THE CFD ALLOCATION ROUND 7 CONSULTATION

Action owner: *DESNZ* **Delivery timeline:** *Summer 2025*

The Government keeps the CfD scheme under constant review and makes adjustments as necessary ahead of every allocation round to improve the scheme based on learning or stakeholder feedback, and to ensure the scheme continues to operate as intended.

Building on the success of last year's AR6 round, the Government launched its AR7 consultation on proposals to support significant renewables deployment to deliver the benefits of a low-cost clean power system, while minimising costs to consumers.

In particular, the Government consulted on the following proposals that will affect onshore wind. The Government will analyse responses to the consultation and provide its response ahead of the round opening to applications:

- **The Government is considering changes to CfD contract terms** that would give longer market certainty once contracts are awarded, including consideration of the merits of increasing the current 15-year CfD term to reduce overall project costs. To move ahead with longer contracts for any technology, the Government would need evidence that this was in the interests of consumers.
- **The Government have set out in the consultation how we intend to implement our approach to enable repowering** for onshore wind.

The Government is also considering, subject to further assessment:

- **An auction schedule** for upcoming allocation rounds, to improve transparency and predictability in the timing and scale of ambition for the CfD.
- **A review of auction parameters**, including our approach to Reference Prices (estimates of the average GB market price for electricity) used to estimate the budgetary impact of projects bidding into allocation rounds. The Government recognises industry concerns and feedback about Reference Prices and the implications for CfD budgets and is seeking to ensure these concerns are balanced with our strong ambitions for the power sector for 2030 and beyond.

Power Purchase Agreements

The UK has an active and growing Power Purchase Agreement (PPA) market, with approximately 1.5GW of onshore wind signing a PPA with a corporate offtaker between 2013 and the end of 2024[29]. While the CfD remains the primary route to market to deliver onshore wind, long-term PPAs will continue to play a complimentary role in driving investment forward.

The growth of the PPA market is subject to a range of challenges. Limitations include the number of corporates that have the appetite for long-term fixed price PPAs, the scale of demand, and the credit strength required to underpin project financing based on PPAs. These factors continue to fundamentally constrain the extent to which the PPA market can drive the growth of onshore wind and provide corporations with access to affordable, clean electricity.

Options to support the onshore wind PPA market were considered by industry during the Taskforce process. They considered a government-backed credit guarantee scheme, exemptions from CfD costs and contract standardisation. The Government are unable to commit to taking these forwards, but will continue to explore mechanisms to support PPAs, including action 34 below.

ACTION 34: NATIONAL WEALTH FUND TO EXPLORE SUPPORTING ONSHORE WIND PPAS

Action owner: *National Wealth Fund* **Delivery timeline:** *Ongoing*

Subject to its investment principles and minimum ticket size of £25 million, the National Wealth Fund (NWF) will explore potential structures to support onshore wind projects or portfolios with Power Purchase Agreements, where the end-user does not have an investment-grade credit rating. NWF will determine the most appropriate product offering for each deal on a case-by-case basis.

29 Bloomberg NEF

REMA

The Review of Electricity Market Arrangements (REMA) is key to delivering a decarbonised, secure, and affordable electricity system. The Government is considering a range of reforms to unlock renewable investment and pass through the benefits of cheaper renewables to consumers which includes reforms to wholesale market arrangements. REMA closely aligns with the Clean Power 2030 Action Plan, both of which are central to government ambitions for achieving energy independence and protecting billpayers as part of our mission for clean power by 2030.

The Government recognises that reforms to the market may introduce additional uncertainty and risk for investors and developers, and that this uncertainty can feed through into higher project costs through impacts on the cost of capital. Specifically, no decision has yet been taken on whether to reform the current national pricing or implement zonal pricing market. Zonal pricing is being assessed further against improvements that can be made to enhanced locational signals in a reformed national pricing market with the aim of taking a decision by around mid-2025.

Furthermore, we will ensure that the final package of REMA reforms continues to provide an attractive backdrop for investors and underpin the investment we need in low carbon technologies such as onshore wind to reach our decarbonisation targets and Clean Power Mission. This includes ensuring that REMA timelines align with the timetable for the next CfD allocation round (AR7). In REMA's Autumn Update published in December 2024, we confirmed that legacy and transition arrangements are being considered under both reformed national and potential zonal market designs, which could help market participants to effectively manage any new risks that emerge. We are also continuing to assess possible mechanisms which could help market participants to effectively manage new risk, that may impact on the cost of capital, for example exploring market hedging arrangements.

In the December 2024 REMA update, we also confirmed our commitment to treat agreements under the next CfD allocation round (AR7) in the same way as existing CfD agreements, in relation to any legacy or transitional arrangements. If zonal pricing is introduced, we would expect that existing and AR7 CfD contracts would be amended to use a local zonal reference price, insulating these agreements from zonal price risk.

ACTION 35: THE GOVERNMENT WILL ISSUE AN UPDATE ON REFORMED NATIONAL AND ZONAL PRICING PROPOSALS IN REMA, INCLUDING TREATMENT OF LEGACY AND TRANSITIONAL ASSETS, AND CONTINUE TO WORK WITH INDUSTRY ON POLICY DEVELOPMENT.

Action owner: *DESNZ* **Delivery timeline:** *Summer 2025*

The Government recognises that it is important to provide an update on market reform, including for key areas such as reformed national and zonal pricing proposals and treatment of legacy and transitional assets, as soon as possible. An update on REMA will be published by mid-2025.

THEME 6 – SUPPLY CHAIN, SKILLS AND WORKFORCE

Theme overview

The increased deployment of onshore wind will increase economic opportunities by providing new skills and job opportunities and strengthening UK supply chains. Latest estimates suggest that the onshore wind sector directly supports 6,600 full-time equivalent (FTE) jobs, and indirectly supports 13,100 FTE[30], in addition to generating £191m per year in exports[31]. Meeting our onshore wind 2030 targets by delivering on the actions within the Government's Onshore Wind Strategy could deliver up to 45,000 direct and indirect jobs in Great Britain. Data collected from the Onshore Wind Taskforce demonstrated that the UK content in overall expenditure of some projects can also be relatively high (50%-70%), primarily attributed to clerical work in the development phase (site preparation and surveying). This demonstrates the significant economic opportunity onshore wind can present for the UK – not only in those areas with high onshore wind potential, but also in areas with a high concentration of these UK-based suppliers.

30 Low carbon and renewable energy economy indirect estimates – Office for National Statistics

31 Low carbon and renewable energy economy estimates – Office for National Statistics

Figure seven – RenewableUK supply chain map showing a sample of UK-based suppliers, whose work includes the onshore wind sector [32]

Historical uncertainty regarding the ONW project pipeline has prevented these economic benefits from reaching their full potential. For example, when considering UK content as a proportion of higher value contracts secured as part of capital expenditure the figure drops to 20-30%, with the majority of minor and major components manufactured abroad.

The absence of uniform, contemporary evidence and data on the extent of the onshore wind supply chain in the UK also makes it difficult to qualify the nature of potential constraints, manage risks, and identify opportunities for growth and investment. As onshore wind deployment increases to meet ambitious decarbonisation targets, there is also the potential for increased constraints and bottlenecks. This could lead to price increases and delays.

The Government has already taken steps to tackle these challenges. This Onshore Wind Strategy and the Clean Power Action Plan provide a strong commitment in support of onshore wind and include pipeline analysis to provide clearer market visibility. The Government will also ensure:

- We improve the data and evidence base to support future supply chain interventions;
- We consolidate and strengthen existing UK supply chain strengths, and where appropriate, grow new industries; and
- We tackle bottlenecks across supply chains where possible, such as those related to skills gaps and skills shortages in sectors essential for onshore wind deployment.

32 RenewableUK, https://www.renewableuk.com/energypulse/suppy-chain-map/

Data and evidence

This Government's ambition, working with the Devolved Administrations, is to build on the existing strengths of the onshore wind sector and minimise supply chain constraints. To that end, the Government is always considering policy interventions to support the onshore wind supply chain, including manufacturing in the UK. Feedback provided by the Onshore Wind Taskforce indicated there is scope to improve the quality of onshore wind supply chain and skills data, so that it is representative of the onshore wind industry as a whole.

The Government will work with RenewableUK to strengthen onshore wind supply chain data, so that it can be used to support policy interventions in the future. The process envisaged is similar to the approach that has been pursued for offshore wind. For example, the offshore wind Supply Chain Capability Analysis, which was supported by Baringa research and extensive industry engagement, helped to formulate an Offshore Wind Industrial Growth Plan.

ACTION 36: THE GOVERNMENT WILL WORK WITH RENEWABLEUK TO CONDUCT A SUPPLY CHAIN CAPABILITY ANALYSIS FOR ONSHORE WIND.

Action owner: *RenewableUK* **Delivery timeline:** *End 2025*

The Government (DESNZ) will work with RenewableUK to expand the evidence base on onshore wind supply chain constraints and opportunities with a view to using this to develop policy interventions to support the UK onshore wind supply chain in the future.

The supply chain capability analysis will be a study of the systems and services required for an onshore wind farm through its life cycle. The study will analyse the UK's current capability and aim to recommend what actions should be taken to develop a successful UK supply chain capability.

Consolidating strengths

Improving the quality of supply chain data is a priority, but in tandem, we are committed to doing to what we can now to support the onshore wind industry in the UK. Through the work of the Onshore Wind Taskforce, we concluded that the financial incentives for onshore wind supply chain investment are not currently strong enough to incentivise large-scale UK based manufacturing, or to grow our existing strengths. The Government is committed to achieving clean power by 2030, and recognises that to do this, we will need to almost double onshore wind capacity in Great Britain. This provides a substantial opportunity to boost investment in onshore wind supply chains, to secure jobs and growth.

ACTION 37: THE GOVERNMENT WILL CONSIDER EXPANDING THE CLEAN INDUSTRY BONUS TO SUPPORT ONSHORE WIND SUPPLY CHAIN INVESTMENT IN THE UK.

Action owner: *DESNZ* **Delivery timeline:** *Summer 2025*

The Clean Industry Bonus (CIB) is being introduced from CfD Allocation Round 7 for offshore wind. The CIB will incentivise offshore wind developers to invest in the most deprived communities, by covering the difference in cost between more expensive but more desirable supply chain investments, versus cheaper but less desirable investments. The Clean Industry Bonus represents new investment to support clean energy manufacturing, and highly skilled jobs in industrial towns and cities.

The Government is currently considering the case for the CIB to be expanded to other technologies, including onshore wind, in CfD Allocation Round 8 (AR8). Government is also considering expanding the CIB to include incentives around skills and workforce requirements for AR8. We are aiming for the Clean Industry Bonus AR8 consultation to be published in summer 2025.

ACTION 38: THE GOVERNMENT WILL INCLUDE ONSHORE WIND IN THE INDUSTRIAL STRATEGY

Action owner: *DESNZ* **Delivery timeline:** *Ongoing*

Harnessing the benefits of the Net Zero transition, including its potential economic growth benefits, will require a broad and integrated policy approach. The Industrial Strategy will provide longer term strategic consideration to boosting manufacturing and harnessing the benefits of key UK industries. The Government's Industrial Strategy, including our approach for onshore wind was published in June 2025.

Component transportation and construction

According to the UK Government's Supply Chain Readiness Report supply chain constraints for onshore wind are less severe than for offshore wind[33]. However, we know projects have faced increased supply chain costs. The Government is committed to removing barriers to onshore wind deployment, including minimising supply chain constraints associated with the transportation of turbine components and their construction.

As mentioned in the Supply Chain Readiness report, the requirement for a police escort for abnormal loads in Scotland is currently constraining the speed with which onshore wind projects can deploy. Requirements for police escorts of abnormal loads (e.g. wind turbines) in Scotland can cause delays in the timely freight of turbine components to the site.

Developers also face separate, albeit related, issues of overrun and "oversail". "Oversail" refers to turbine components crossing the boundary of a road and entering the airspace above private land, or during construction, refers to equipment such as cranes entering the airspace above private land. Overrun refers to instances where vehicles transporting components need to cross private land to access the development site. Both require developers to have land rights for the operational lifetime of the development, to allow access for operations and maintenance, repair, repowering, and decommissioning. Agreements involve financial compensation being paid to private landowners, with some onshore wind projects facing financial and time pressures as a result. This can cause financial uncertainty and delays to projects.

ACTION 39: THE GOVERNMENT WILL MONITOR AND CONSIDER ACTIONS RELATED TO COMPONENT TRANSPORTATION AND CONSTRUCTION.

Action owner: *DESNZ, Scottish Government, Scottish Renewables*
Delivery timeline: *Ongoing*

Police Scotland, the onshore wind industry and the Scottish Government are working collaboratively to address the issue related to the escort requirements for abnormal loads in Scotland. Options to address this constraint are being explored, including increasing police resources for the escorting of abnormal loads. DESNZ will continue to engage with Scottish Government on the latest developments and provide support where needed, providing updates to the Onshore Wind Council. The Scottish Sector Deal also identified the need to consider solutions to resolving issues related to "oversail" and overrun. DESNZ will therefore also work with Scottish Government to support this work, and consider any action needed to resolve these issues.

For both issues, Government will also monitor whether any similar issues arise in Wales and England and if so, consider any necessary action via the Onshore Wind Council.

33 UK renewables deployment supply chain readiness, DESNZ, 2024

Recycling and circular economy

Recycling and circularity play a role throughout an onshore wind farm's life, both during the operation and maintenance phase (when worn parts are reconditioned and retained) and following end-of-life (when decommissioned parts are recycled or repurposed).

Over the course of an onshore wind farm's lifetime, parts suffering wear and tear need to be replaced. Developers have a choice to either remove the part and purchase a fresh replacement or send the part to be refurbished and returned to use. Companies such as Renewable Parts specialise in the latter option; their refurbishment centre, based in Scotland, takes an approach to remanufacturing which obviates the need to purchase new parts from overseas, thus boosting domestic job creation, value retention, and the sustainable shortening of supply chains.

The steel tower, which comprises 70% of a wind turbine, is composed of easily recyclable metals. Other parts, such as turbine blades, are however less amenable to this type of treatment. ReBlade are a repurposing business who have taken an innovative approach to this problem by processing and converting disused blades into bridges, furniture, canopies, and more. In parallel to this, organisations such SusWIND are aiming to accelerate the technological readiness of certain recycling techniques – specifically regarding high value composite materials – which are currently not yet commercially viable. Seeking to expedite these kinds of endeavours, the Government has recently made grants available, including a £13 million funding round from the UKRI for "Research to advance UK recycling capabilities".

The relatively early deployment of onshore wind in the UK means that growing numbers of wind farms are expected to come offline in the next decade. Peak decommissioning rates are predicted in the late 2020s and throughout the 2030s, amounting to approximately 0.5-1GW of capacity per year, with the majority being in Scotland. It is consequently essential that services geared towards the treatment of these parts are adequately resourced. This serves not only to minimise waste and maximise the (re-) use of materials; it also carries a suite of welcome possibilities, such as generating jobs, reducing carbon emissions, spurring growth in manufacturing, and benefitting local supply chains. Additionally, given the limited availability of wind-specific recycling services globally, there is an opportunity for the UK to position itself as an industry leader and generate revenue from external markets.

ACTION 40: THE GOVERNMENT WILL SUPPORT THE DEVELOPMENT OF THE RECYCLING AND CIRCULAR ECONOMY SECTOR.

Action owner: *Scottish Government & DESNZ* **Delivery timeline:** *Ongoing Action*

The Government recognises the opportunity for the UK to be a world leader in recycling and circular economy for onshore wind components and recognises the excellent work that is currently ongoing in the sector, through facilities such as ReBlade. The initially slow rate at which wind farms are expected to come offline offers an opportunity to monitor and assess the effectiveness of existing initiatives.

In the near-term, the Government will continue to monitor the onshore wind recycling and circular economy sector and work with Scottish Government to consider the need for any government intervention in the future. We will also consider whether any action is needed to support the sector across the wider UK.

Skills

The wider transition to net zero is expected to support hundreds of thousands of jobs, with Clean Power 2030 playing a key part in stimulating a wealth of new jobs and economic opportunities across the country. These jobs will cross a range of skill levels and occupations, including technical engineers, along with electrical, welding, and mechanical trades and managerial roles including project and delivery managers.

Many of these occupations are already in high demand across other sectors such as house building, construction, and wider manufacturing, and there also is a relatively high degree of transferable skills and knowledge between many carbon-intensive sectors and clean energy sectors, so wider coordination will be vital. The challenge of finding employees with the right skills to take on these roles is already significant and expected to remain so. Through industry engagement, we have identified several key barriers to securing the Clean Power 2030 workforce.

Data collected from the Onshore Wind Taskforce specifically found that for the onshore wind sector, upskilling workers for turbine installation and practical engineering will be crucial as onshore wind deployment ramps up. However, there is currently a lack of robust data regarding skill shortages for onshore wind in the UK.

ACTION 41: THE GOVERNMENT WILL PUBLISH THE CLEAN ENERGY WORKFORCE STRATEGY AND EXPLORE OPTIONS FOR BOOSTING SKILLS AND DELIVERING ON THE NEEDS OF THE ONSHORE WIND INDUSTRY

Action owner: *DESNZ* **Delivery timeline:** *End 2025*

Onshore wind deployment has the potential to create high-quality jobs across the UK. The Clean Energy Workforce Strategy will focus on cross-cutting skills & workforce actions to deliver the Clean Energy Superpower Mission, including Clean Power 2030. It will include a range of policy commitments from government and industry, and set out our analysis of clean energy skills demand.

The Energy Skills Passport, led by Offshore Energies UK (OEUK) and Renewable UK (RUK), aims to improve recognition and portability of skills across the energy sector. The Government supports the work of RenewableUK to expand the Energy Skills Passport to the onshore wind sector via the development of new career pathways.

Workforce

The Government wants to ensure the benefits of clean energy, including onshore wind deployment, are captured and felt across the whole of the UK. We are committed to creating good, accessible jobs and welcome the continued work of the onshore wind sector to ensure people of all backgrounds can flourish within the sector. However, we recognise that more needs to be done to improve the diversity of the sector. The Government will continue to work closely with partners across government and industry to ensure diversity is embedded.

ACTION 42: INDUSTRY WILL CONDUCT NEW WORKFORCE MONITORING TO PROVIDE DEMOGRAPHIC DATA, FROM WHICH APPROPRIATE TARGETS WILL BE SET.

Action Owner: *RenewableUK* **Delivery timeline:** *End of 2025*

The acceleration of onshore wind deployment to meet 2030 targets needs to be supported by a fair and inclusive expansion of the workforce. Currently, the onshore wind workforce data is limited, particularly in England.

To address these challenges, the onshore wind industry will conduct a survey to monitor demographic workforce data, including diversity and inclusion, on a biannual basis. This will align to the workforce monitoring already undertaken within the offshore wind sector and will provide an accurate snapshot of the current onshore wind workforce, enabling appropriate targets to be set.

IMPLEMENTATION

IMPLEMENTATION

Onshore Wind Council

The successful implementation of the Onshore Wind Strategy is dependent on a robust management and monitoring of progress, and a continuous evaluation of the effectiveness of the actions taken. The Government is committed to delivering the level of onshore wind needed by 2030 and is therefore establishing a new Onshore Wind Council to oversee the implementation of this strategy.

The Onshore Wind Council will bring together the onshore wind industry, departments across UK Government, devolved administrations and unions. The Council will provide a platform for strategic engagement between the Government and the sector, and will:

- Drive delivery of the commitments in the Onshore Wind Strategy, monitor progress and effectiveness, and collaboratively tackle key implementation challenges.
- Keep ahead of and respond to key emerging threats and opportunities, realigning priorities and action as needed

The Council will be jointly chaired by Michael Shanks MP, Parliamentary Under Secretary of State for Energy Security and Net Zero and Matthieu Hue, CEO of EDF Renewables UK and Ireland, and will meet three times a year. The Council will meet for the first time in summer 2025, and the Terms of Reference and membership will be published thereafter.

The Council will be supported by a pipeline and delivery group comprised of onshore wind developers, supply chain companies and UK Government. To boost the chance of meeting our ambitious decarbonisation targets, in collaboration with RenewableUK, the Government will set up a financial investment decision-enabling delivery group to maximise 2030 delivery. The group will focus on identifying and monitoring specific challenges projects face, with the aim to improve how government can recognise and respond to key barriers to deployment.

Monitoring and evaluation

We want to take a data-driven approach to monitoring the delivery of the Onshore Wind Strategy. The Onshore Wind Council and supporting group will track:

- The onshore wind pipeline out to 2030 and beyond. This will help the Government understand the key projects needed to deliver our decarbonisation ambitions, identify where challenges are emerging and what actions we can take to keep important investments on track.
- Key performance indicators related to many of the actions committed to by the Government in this document, to understand whether the actions are having the desired impact.
- Wider economic and financial factors influencing the onshore wind industry, with the potential to either boost or hamper progress.

The detailed approach to monitoring and evaluation will be agreed by the Onshore Wind Council later this year. The below table provides an **indication of the type of factors we intend to track**, to assess progress and enable a quick Government response if progress isn't being delivered. This will be reviewed and built upon by the Onshore Wind Council.

Factor	Why?	Baseline figure(s) at time of publication	How will this be tracked?
GWs of onshore wind (ONW) at different stages in pipeline	To assess the impact of ONW Strategy actions and track progress to 2030 and beyond	Total pipeline – 16.1GW[34] Planning Applications – 8.8GW Approved – 5.9GW Construction – 1.4GW	Renewable Electricity Pipeline Database and input from the Pipeline & Delivery ONW Council subgroup
Number of ONW Strategy actions on track	To track delivery of all actions and assess progress	Not applicable at time of publication	DESNZ-led action tracker, to be shared with the ONW Council
Time taken for ONW projects to receive planning decision	To track impact of actions in site selection and planning chapter	52% of 2020 applications got decision under 2 years[35] 50% of 2021 applications got decision under 2 years 33% of 2022 applications got decision under 2 years	Renewable Electricity Pipeline Database
Aviation objections	To track impact of actions in aviation and defence chapter	10.75GW of future onshore wind pipeline either subject to or anticipated to be subject to objections on grounds of aviation and defence interference[36]	DESNZ aviation and defence survey
Number of jobs the ONW sector is contributing to the economy	To provide context on economic benefits sector is supporting	Sector directly supports 6,600 full-time equivalent (FTE) jobs, and indirectly supports 13,100 FTE[37]	RenewableUK workforce monitoring report for onshore wind

34 All measures of capacity in the pipeline are based on REPD (January 2025): Renewable Energy Planning Database: quarterly extract – GOV.UK

35 All measures of the time taken for ONW projects to receive planning decision are based on the REPD: Renewable Energy Planning Database: quarterly extract – GOV.UK

36 2023 Survey of Onshore Wind Impacts on Aviation and Defence, RenewableUK

37 Low carbon and renewable energy economy indirect estimates – Office for National Statistics

Factor	Why?	Baseline figure(s) at time of publication	How will this be tracked?
Public acceptability of ONW	To provide wider context on ONW sector and effectiveness of actions in the communities and public perception chapter	77% overall support and 37% strong support in Spring 2024[38]	DESNZ public attitudes tracker
Size and location of projects	To provide wider context development of ONW sector	Average size: 19.6MW[39] East Midlands: 9.5MW Eastern: 9.0MW London: 3.2MW North East: 10.8MW North West: 9.7MW Scotland: 28.1MW South East: 12.5MW South West: 8.4MW Wales: 17.1MW West Midlands: 2.1MW Yorkshire and Humber: 14.2MW	Renewable Electricity Pipeline Database
Contract for Difference Scheme – GWs secured by round, and price	To provide wider context on ONW sector	990MW secured in AR6[40] AR6 clearing price (2012 prices): 50.90/MWh	Existing DESNZ CfD auction data

38 Low carbon and renewable energy economy indirect estimates – Office for National Statistics

39 All estimates of projects' size and location are based on the REPD: Renewable Energy Planning Database: quarterly extract – GOV.UK, January 2025

40 Contracts for Difference (CfD) Allocation Round 6: results – GOV.UK

Acknowledgements

The success of the Onshore Wind Taskforce is the result of the collaborative efforts and unwavering commitment of many individuals and organisations. We would like to express our deepest gratitude to all those who contributed to this initiative, including members of both the Working Groups and Executive Committee.

Executive committee members:
EDF Renewables UK and Ireland, RenewableUK, SSE Renewables, Scottish Power Renewables, RES, RWE, Vattenfall, Nadara, BayWa r.e, Octopus Energy Generation, Scottish Renewables, Energy4All, Nordex, Hitachi Energy, Hutchinson Engineering, National Electricity System Operator, Prospect, Unite, GMB, officials from the Scottish Government, Welsh Government and Department of Energy Security and Net Zero.

ANNEX

ANNEX ONE: TECHNICAL METHODOLOGY

This annex provides more detail on the methodology and sources underpinning the analysis presented in this document. This includes the scenarios themselves, alongside other estimates such as jobs supported.

Deployment scenarios

The Onshore wind scenarios presented here are a combination of analysis based on the available data and scenario-based assumptions discussed and agreed with the Taskforce.

The main assumptions are summarised in the table below:

Table AI: Summary of key data and assumptions used in the Onshore Wind deployment scenarios

Scenario	Assumptions	Data/Evidence
Business as Usual	Forecasted deployment is based on the most recent historic growth rate in deployment (3% since 2021).	Energy Trends[41]
Current Policy Delivery	The primary difference between the lower and higher ends of the range is attributed to the assumed attrition rate of projects in the pipeline that have submitted applications. These attrition rates act as a proxy for the overall economic, planning, and infrastructure environment. In the high scenario, a 30% attrition rate is based on the historical average of projects that submitted applications (REPD) during the period 2021-2024. This suggests that most projects will progress according to average timelines for planning decisions, securing funding, and connecting to the grid without delays. For the lower scenario, we assumed a significantly higher attrition rate to account for the risk of a more challenging economic environment. This assumption is informed by a combination of historical data analysis (worst attrition rates since 2010, observed during the period 2013-2015) and anecdotal evidence provided by the ONW taskforce.	REPD October 2024[42] and assumptions agreed with the ONW taskforce.

41 Energy Trends: UK renewables – GOV.UK

42 Renewable Energy Planning Database: quarterly extract – GOV.UK

Scenario	Assumptions
England/ Wales Stretch	Currently, the REPD does not offer a comprehensive count of pipeline projects in England and Wales. To remedy this, we supplemented the REPD data with pipeline evidence provided by individual developers in Wales. These estimates reflect the potential for onshore wind deployment under the most optimistic conditions. Maximum deployment in England estimates based on historic data due to lack of pipeline visibility. Based on this, it is judged plausible that deployment in England could reach around 600MW a year, contributing around 2GW by 2030. The 600MW is based on the average historic annual deployment (around 300MW from 2011 to 2017) and doubling the average turbine size in the last 10-15 years.

Methodology for estimating jobs-supported by Onshore Wind by 2030 in a Clean Power consistent scenario

Estimate

The onshore wind sector could support up to 45,000 direct and indirect jobs in Great Britain by 2030.

Methodology

Summary

The 2030 estimate is based on a scenario where up to 29GW of installed onshore wind capacity is achieved by 2030, in line with the top of the Clean Power Action Plan range for onshore wind. The capacity range for onshore wind outlined in the Clean Power Action Plan is 27-29GW, a narrower range than for offshore wind where there is more uncertainty over final delivery for 2030.

The methodology for direct employment is primarily based on research commissioned by ClimateXChange (funded by the Scottish Government) to consider the workforce and skills requirements to support up to 20GW of installed onshore wind capacity by 2030 in Scotland[43]. The report estimates were based on intelligence from hundreds of onshore wind projects – providing a full time equivalent (FTE) per GW ratios (jobs-intensity) for a 'typical' installation by project phase. The modelling assumptions were validated by more than 20 Scottish onshore wind stakeholders in Spring 2024.

There are inherent challenges in forecasting the number of jobs supported in any sector. Particularly for onshore wind, there is limited data and evidence available on jobs supported in England due to the de facto ban on onshore wind deployment which has been in place since 2015 and lifted in 2024. The ClimateXChange research focuses on the workforce requirements in Scotland, where the vast majority of recent deployment has occurred in GB. As noted above, we are therefore making an implicit assumption that these findings apply to the rest of GB. The final estimates have been compared with other industry and research forecasts. As well as benchmarked against the historic estimates from the ONS Low Carbon and Renewable Energy Economy (LCREE) survey publication[44].

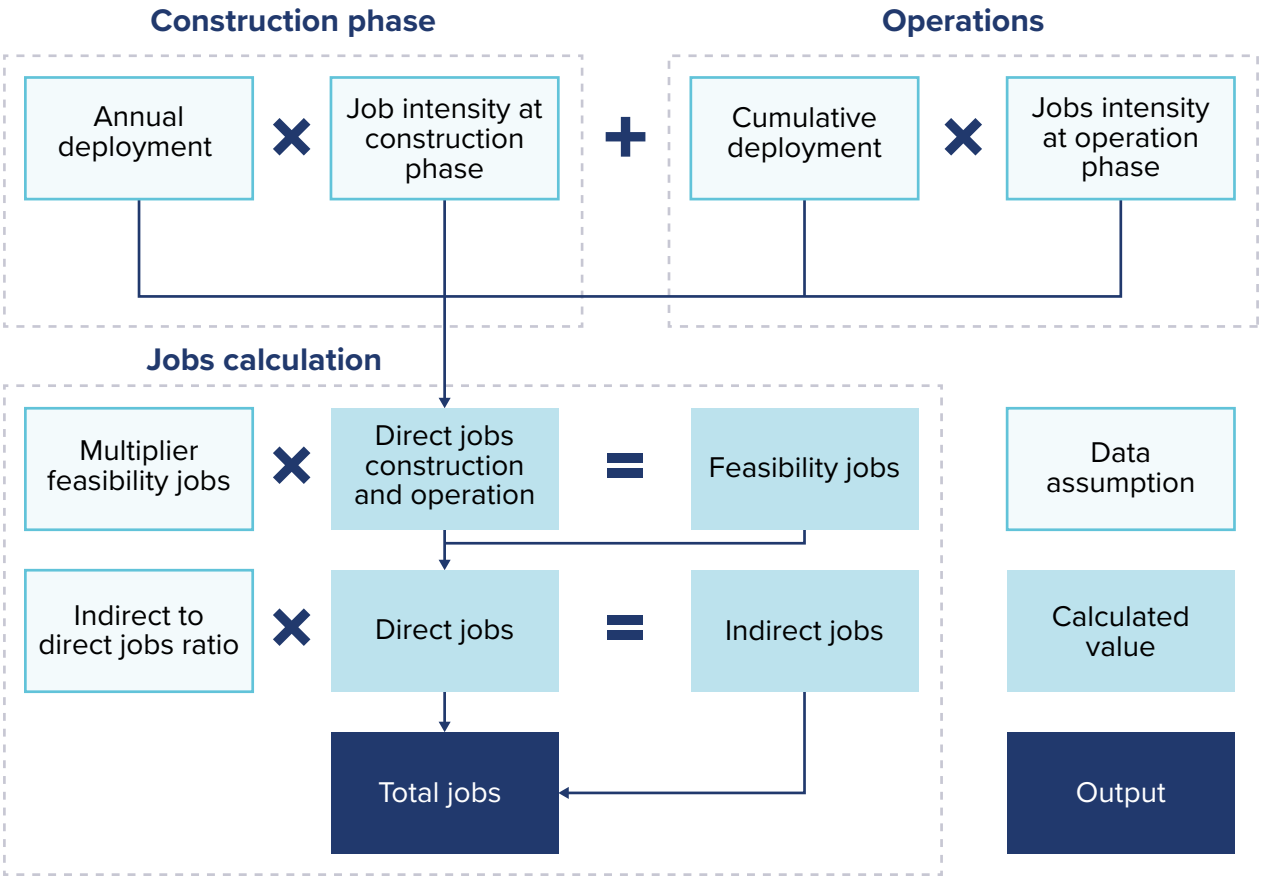
The export market for onshore wind is estimated to be relatively small[45], therefore we have not made any explicit assumption for jobs supported by exports.

43 ClimateXChange Workforce and skills requirements in Scotland's onshore wind industry: https://www.climatexchange.org.uk/projects/workforce-and-skills-requirements-in-scotlands-onshore-wind-industry/

44 ONS Low Carbon and Renewable Energy Economy Survey indirect estimates, UK: 2015 to 2022: https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/lowcarbonandrenewableenergyeconomysurveyindirectestimatesuk/2015to2022

45 ONS Low carbon and renewable energy economy, UK: 2022: https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2022

Figure eight – Onshore wind employment estimate calculation process



Direct jobs

Step 1 – Construction phase

We used the jobs-intensity ratio for construction (rounded to 1,650 FTE per GW), as presented in Appendix D of the ClimateXChange report, to estimate jobs supported at construction stage. We combined this ratio to a deployment trajectory of 29GW by 2030 which aligns with the Clean Power Action Plan. This calculated the number of FTE supported for the estimated capacity under construction each year.

Step 2 – Operations and Maintenance

To decide on which job intensity ratio to use for the calculation of FTE associated with operation and maintenance. We compared the jobs-intensity ratio for operations (rounded to 50 FTE per GW), presented in Appendix D of the ClimateXChange report, to the FTE per GW estimates suggested by historic LCREE data[46] (100 FTE per GW). After comparison we decided to use the slightly higher FTE per GW estimate from the historic LCREE data. We applied this ratio to total installed capacity annually to estimate the operation and maintenance FTE.

46 Table 3 – https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2022

Step 3 – Feasibility phase

To account for the roles required for feasibility, and considering ClimateXChange note that over 90% of the roles to 2030 will be in construction phase alone, we assumed that 5% of the annual workforce will be working at the feasibility project phase.

Indirect jobs

For the indirect employment, we used the ONS LCREE survey onshore wind indirect estimates to calculate the indirect to direct job estimates ratio[47]. The ONS have recently reviewed and updated their methodology for producing indirect estimates. They updated the calculations to use the UK industry-by-industry input-output analytical tables (IOTs). The revised estimates suggest a significant year-on-year increase in indirect employment since 2020. Given that the ONS have marked latest 2022 estimates as provisional, we have chosen to use the five-year historic indirect to direct job ratio to help mitigate inter-year variation. Through this approach we estimate this to be 1.4 indirect jobs to 1 direct job (rounded to 1.d.p.).

Breakdown of direct and indirect jobs

Based on the above methodology, we estimate that the onshore wind sector in GB could support up to 20,000 direct and 25,000 indirect jobs by 2030[48].

Further considerations

These sector estimates are intended to provide an indication of the increase in the level of employment in the onshore wind sector to support Clean Power by 2030. Our estimates are based on one potential deployment pathway for the onshore wind capacity required to meet Clean Power by 2030.

Jobs-supported are heavily weighted towards the construction phase, meaning the assumption about annual capacity deployed to reach the 2030 position is important in driving the overall estimate. To account for this, including the fact that actual deployment tends to be 'lumpy', the three-year average of the modelled direct estimates for 2028 to 2030 (inclusive) has been applied in the estimate. We have not made any explicit assumptions around employment for repowering differing meaningfully from new-build projects.

47 ONS Low Carbon and Renewable Energy Economy Survey indirect estimates, UK: 2015 to 2022: https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/lowcarbonandrenewableenergyeconomysurveyindirectestimatesuk/2015to2022

48 Figures are rounded to the nearest 5,000.

Any enquiries regarding this publication should be sent to us at onshorewind@energysecurity.gov.uk