



## Arm yourself with our handy FAQs and Case Studies

### Why do we need all forms of wind?

Experience and research show that it's important to avoid overdependence on any single fuel type. Securing Wales' energy future demands a diverse renewable mix to ensure supply security and affordability, community benefit, habitat restoration economic prosperity.

Offshore wind projects come with more engineering hurdles than onshore wind, resulting in longer development times, sometimes exceeding a decade. While offshore wind is a solid long-term solution, hitting the Welsh Government's target of 100% of our electricity needs from renewables by 2035 requires onshore wind. Onshore wind is essential for quick progress, with its rapid deployment, cost-effectiveness, and stable energy costs.

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### If the wind doesn't blow, there will be no power?

Wind turbines operate about 80-85% of the time, yet fluctuating wind speeds affect power output. With increased onshore wind and renewables, our grid is now more diverse and distributed. It's getting smarter, matching supply with demand. As energy storage grows, reliance on natural gas decreases. Technologies like batteries, electric vehicles, and green hydrogen store surplus renewable energy for when it's needed. With support, our electricity systems will become more sophisticated, adapting to wind variability.

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### If renewables are cheaper than gas, why are energy bills still high?

In the UK market, electricity prices are currently driven by costly gas-fired power stations, which have been especially impacted by the Ukraine war. As we bolster our grid with more renewables, costly and polluting options will be phased out, ultimately cutting costs for all. Renewables are already outpacing fossil fuels, providing nearly half of UK electricity, mainly from wind. This trend will escalate with new clean energy projects coming online in the next decade. Onshore and offshore wind farms are already generating enough electricity to power over 25 million homes all year round, slashing UK carbon emissions by over 35 million tonnes a year.

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### Why are we allowing big foreign multi-nationals to develop Welsh energy assets?

The wind industry is fiercely competitive and capital-intensive. Developing wind farms demands significant time, resources, and financial investment, with inherent risks like grid connection issues, unfavourable consent decisions, policy changes, market volatility, or unforeseen delays.

We have a community of developers based in Wales who are experts in assessing these risks. They employ a Welsh workforce to deliver projects that provide economic growth, funding for environmental programmes and community benefit schemes. Recognising the importance of community engagement and shared benefits, these developers are playing a vital role in Wales' energy transition.

## Planning & Consenting

### FAQs



### What is the current planning and consenting process in Wales?

Wales currently has three tiers of consenting processes for most infrastructure projects.

Small projects are decided by local planning authorities.

For larger energy generation projects between 10MW and 350MW that are devolved, Welsh Government make the decision through the Developments of National Significance (DNS) process.

Similarly, overhead powerlines that are up to 132kV are also devolved to Wales and sit within the DNS process.

All devolved consenting powers will soon be replaced by the Infrastructure (Wales) Act.

For larger projects that are not devolved, the UK Government remains the decision maker. This takes place through the Nationally Significant Infrastructure Projects (NSIP) process.

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### What will the new planning and consenting process in Wales be?

The recently passed Infrastructure (Wales) Act is aimed at unifying the processes currently in place in Wales for specific types of major infrastructure. In our recent poll 63% of respondents agreed that the planning process for renewable energy projects in Wales needs to be sped up, therefore this regime change is a welcome one.

Included in this will be energy, transport, waste, water and gas projects (above certain size or capacity thresholds) on land and in the Welsh marine area.

The new Infrastructure Consent regime plans to reduce the number of authorisations needed to streamline the process and make it easier to understand.

This will offer greater certainty for renewable energy projects and investors. To reach Wales's 2035 targets, it is vital the new regime is adequately funded with clear policy leadership.



## Don't we have enough wind farms in Wales already?

The issue is consumption is increasing at a faster rate than renewable energy generation, and we are not building enough to meet this growing demand.

According to the Welsh Government's latest Energy Generation report, the percentage of Welsh electricity consumption met by renewable electricity generation in fact reduced from 56% in 2020 to 55% in 2021.

Only 43MW of new renewable energy capacity was installed in 2022, which included just one micro-scale wind installation of 6KW. By comparison Scotland added 1,621MW of new capacity that same year.

There is still a lot of work to be done to meet Wales' 2035 target of generating 100% of its electricity consumption from renewables. It is important to avoid over dependence on any one type of technology. All forms of renewable generation are needed to achieve this target. As well as meeting our own electricity consumption needs, Wales could be a net exporter of energy in the longer term, leading the way in the UK. Adopting an export ambition in Wales stimulates long-term industry growth, infrastructure investment, and green economic development while demonstrating commitment to addressing global climate and nature emergencies.

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## How long does the planning process take?

Between 2016 and this year, only three onshore wind farm projects have been through the DNS regime in Wales. All have taken more than 12 months to reach an outcome.

No onshore renewable project above 50MW has been approved since in Wales 2016.

41% of applications through the DNS process (9/22) have been refused.

44% of the refused applications saw a refusal by the Minister against recommendations. The average duration for granting of onshore wind planning permission in Wales is 1030 days – the second highest in the UK. In England the average is 217 days.

**Less than 50%** of Developments of National Significance (DNS) applications were determined on time in 2023.

Recent polling shows communities across Wales are calling for action to speed up the process in Wales, with 63% of people agreeing that the planning process needs to be sped up.

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## How big are onshore wind turbines and how efficient are they?

The industry is rapidly evolving, producing taller onshore turbines that are more cost-effective in the long term. Their greater efficiency and energy output means that fewer turbines are needed to meet our net zero targets. In addition, using fewer, taller turbines reduces the overall footprint of the project, which helps to mitigate impacts on local landscapes, wildlife habitats, and ecosystems.

At Pen y Cymoedd Wind Farm in south Wales, there are 76 wind turbines on site, producing enough energy to power 15% of Welsh homes annually. Operational since 2017, these older wind turbines are smaller, so produce less power. One rotation of a blade can power a single household for nine hours.

For larger contemporary turbines, with a blade tip height of up to 220 metres, one rotation can power a single household for 30 hours.



## Do renewable projects impact biodiversity?

Renewable energy projects bolster biodiversity by actively monitoring, encouraging and promoting understanding of ecosystems, resulting in heightened resilience. Examples include the establishment of wildflower meadows at solar energy sites, peatland restoration at onshore wind sites as well as quasi-MPAs and strategic compensation measures through offshore wind developments.

Activities to develop projects aligns with the aims of Welsh Government's own policy to deliver net benefit for biodiversity.

During the planning and application phase, renewable energy projects carry out an Environmental Impact Assessment (EIA), including comprehensive baseline ecological surveys and detailed independent analysis over an extended period. These cover both the flora and fauna at proposed sites. The primary objective of the EIA is to thoroughly evaluate any potential adverse impacts and to detail plans that will mitigate and minimise these impacts.

These assessments and studies are fundamental to inform the final design of projects to ensure that they comply with both local and national planning policy regarding biodiversity. All of this is then included in an Environmental Statement, which communities and individuals can review and comment on during statutory pre-application consultations.

Private investment through renewable energy projects can provide significant private sector funding to support local and national biodiversity enhancement programmes.

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## How do communities benefit?

A RenewableUK Cymru report, Onshore Wind in Wales: How our sector works with communities demonstrates how different regions in Wales stand to gain far more than just clean energy from the pipeline of onshore wind projects on the horizon.

Onshore wind projects are already contributing more than **£6.5 million a year to Welsh Communities** and could grow to £20 million, research from RenewableUK Cymru finds.

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## How do renewable energy projects impact tourism and the local area?

The Study into the Potential Economic Impact of Wind Farms on Welsh Tourism found there to be negligible impact on the national tourism sector, and no evidence that wind farms on visitor routes deter tourists.

The report found that there are some potential positive impacts on tourism resulting from renewable energy, with projects enhancing existing visitor attractions, while others help provide investment in visitor facilities.

There are often discussions around how renewable energy projects impact the value of homes in communities. There is still no firm evidence on whether UK onshore wind farms have any impact on house prices.

A 2007 study by Royal Institute of Chartered Surveyors on the potential impact of wind farms on house prices concluded that "proximity to a windfarm simply was not an issue", with in 2014 a RenewableUK study found "no evidence to suggest that there was a long-term negative impact on house prices, either during the period of construction or post completion of the wind farms."

This was supported by a climateXchange study in 2016 which found "No evidence of a consistent negative effect on house prices."

Overall, renewable energy projects continue to bring added value to local communities through investment and community benefit support packages.



# Planning & Consenting

## Case Studies

### Pen y Cymoedd Onshore Wind Farm

Located in Neath Port Talbot and Rhondda Cynon Taf, the project funds a 25-year £3m habitat restoration scheme of 1500 hectares.

In collaboration with the Lost Peatlands Project, Pen y Cymoedd has led one of the UK's largest peatland restoration projects to ensure that natural peatland is supported, and carbon is locked away to protect future generations.

With the protection of peatland being one of the main reasons for many of Wales' 169 SSSI designations being in place, it is critical that peatlands continue to be supported to protect Wales's natural habitats and encourage further biodiversity.



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### Alltwalis Wind Farm

Since the establishment of the Community Benefit Fund in 2011, 35 organisations in the Llanfihangel-ar-Arth area of Carmarthenshire have directly benefitted from funding and support which has totalled £100,000 per year.

In addition to almost half of all funding going to support local community buildings and services, more than a quarter of the funds have been received by sport and recreational groups.

Local public services and events have seen further support, with fire and rescue services seeing investment along with cultural events like the Eisteddfod.


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### Pen y Cymoedd Wind Farm Community Fund

An investment of £276K from the community fund enabled the social enterprise Community Impact Initiative to kickstart its 'Building Resilience in Communities' project.

Regenerating empty properties in the Neath, Afan, Rhondda, and Cynon valleys, marginalised individuals aged 16+ in these community have been supported with housing.

Significant improvements to health and wellbeing; personal, practical and employability skills; and accredited qualifications have been achieved.





## Ports and Supply Chain

### FAQs

#### How can Welsh ports support Wales' renewable energy ambitions?

Welsh ports play a vital role in supplying components for both current and future renewable energy projects in Wales. They will play a crucial role in acting as green energy hubs in the transition to net zero.

They serve as the linchpin for our onshore wind ambitions in the short-term, while also facilitating the cost-effective and timely execution of floating offshore wind in the near future.

Ports also play an important role in encouraging further investment and research and development to build opportunities in emerging technologies, such as green hydrogen and carbon capture & storage.

In turn, this investment encourages greater supply chain development and collaboration, supporting local communities and the wider economy.

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#### What are the job opportunities from floating offshore wind?

There are significant job opportunities from both floating offshore wind in the Celtic Sea and fixed offshore wind in the Irish Sea.


ABP, amongst others, highlight the potential for the creation of up to 10,000 jobs from the manufacture and deployment of Floating Offshore Wind in the Celtic Sea. The UK Government recently shortlisted the port of Port Talbot for funding to support the transformation of the port into a major hub for Floating Offshore Wind, which will begin to unlock a projected £1 billion of investment.

These job opportunities from floating offshore wind include a wide range of roles such as welders, project managers, accountants, naval engineers, and high voltage electrical engineers. Developers are already holding skills workshops with the local supply chain to identify what skills are currently available and what areas need to be strengthened.

The UK Government is to provide up to £26 million of seed capital funding to support the development sites of the Celtic Freeport, which encompasses Neath Port Talbot and Milford Haven.

Many of these opportunities could support the transition of workers from Tata Steel in Port Talbot.

In addition, the Tata Steel Transition Board will have access to up to £100 million of funding from both the UK Government and Tata Steel to invest in skills and regeneration programmes for the local area. Therefore, there may be opportunities for floating offshore wind in the Celtic Sea to support future roles in Port Talbot.



## What are the opportunities from fixed offshore wind?

As an example of the opportunities relating to fixed offshore wind, the construction of Gwynt y Môr in North Wales produced 700 jobs, with a further 100 highly skilled jobs created longer-term. To support this, investment has been made to develop local net zero skills training programmes at Coleg Llandrillo in Colwyn Bay.

In addition, the Awel y Môr project will ensure North Wales receives further investment, bringing significant jobs and supply chain opportunities to the local economy.

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## What is being done to support local supply chains?

Alongside the innovative leasing structure for Round 5, The Crown Estate is launching its Supply Chain Accelerator.

This has committed to provide matched development expenditure funding to accelerate supply chain projects across the UK.

The initial focus on this work is a £10 million pilot funding round focused on current gaps and opportunities identified as part of the Celtic Sea Blueprint Supply Chain research.

These include:

- Wet storage infrastructure and logistics
- Operation and maintenance infrastructure
- Floating platform components, sub-assemblies, anchor systems
- Dynamic cables and connections
- Skills transition (manufacturing and operation & maintenance)

The Crown Estate aims to stimulate the development phase of investment in projects that enhance sustainable industrial capability. This strategy is designed to mitigate risks and accelerate progress in this sector.

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## Will traffic increase in and around the ports if they are being used to support the construction of renewable energy projects?

Welsh ports already play a significant role in supporting the construction of a number of renewable energy projects. With Swansea Port supporting the construction of 28 turbines for the Brechfa Forest Wind Farm in Carmarthenshire and a further 650 components coming in through the port for the Pen y Cymoedd project, planners are experienced and well-prepared when considering the construction management of these projects.

This experience means that plans are put in place to ensure communities are not significantly adversely affected as projects are developed, while communities are kept regularly informed about activity which may impact them locally.

During construction there may be occasions when roads or bridges being used to transport materials may need to be modified. With significant experience in these fields, local developers ensure they engage with local communities and work with councils and Welsh Government.

# Ports and Supply chain

## Case Studies

### The Crown Estate driving innovation through leasing

For the first time ever, The Crown Estate requires Floating Offshore Wind bidders contractually to deliver positive social value for local communities.

The supply chain for floating offshore wind in the Celtic Sea has been said to be worth £1.4bn GVA to local communities.

It could support the delivery of up to 5,000 new jobs in Wales.



### ABP Swansea delivering onshore wind projects

Swansea Port has already played a critical role in the deployment of a number of onshore wind renewable energy in Wales.

ABP have also handled onshore wind turbines and components through the port of Swansea for Mynydd Bwllfa wind farm, Bretchfa West, Pen Y Cymoedd, Mynydd y Gwair, Mynydd y Betws, Llynfi Afan Renewable Energy Park, Parc Stormy and Pant y Wal projects.

Components for the 28 turbine Brechfa Forest Wind Farm in Carmarthenshire were delivered through Swansea, with the wind farm now generating electricity for over 38,000 homes each year.

Before this, between 2015 and 2016, Swansea handled over 650 components the largest onshore wind farm in Wales, Pen y Cymoedd, located between Aberdare and Neath.

### Clocaenog Forest Wind Farm near Denbigh

Constructed in 2019, the 27-turbine project was made possible through port infrastructure and local supply chain investment.

Now delivering £768,000 of annual community investment, the project has invested over £2.5m into local communities.

This investment has supported the creation of 75 jobs, safeguarded a further 100, and created over 7,500 opportunities for local people to train and develop new skills.







## **Is there a reason why the whole transmission route cannot be underground?**

High voltage, high-capacity overhead lines are the proven economic and reliable choice for the bulk transmission of electricity throughout the world.

The Electricity Network Commissioner's report to the UK Government reiterates this, stating that the burying of cables can cost between five and ten times more than overhead installation. This additional cost would ultimately result in higher energy bills for households and businesses across Wales.

The undergrounding of cables also causes significantly more environmental damage and issues for long-term maintenance.

When applying to Ofgem for an Independent Distribution Network Operators Licence (IDNO) to allow electricity to be transported, applicants have a duty by law (section 9 of the Electricity Act 1989) to develop and maintain an efficient, coordinated, and economical system of electricity. Energy distributors are therefore required to ensure cost is a key consideration.

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## **What is the difference between energy transmission and distribution infrastructures?**

Transmission infrastructure refers to the cables that transports electricity at high voltage above 132kV around the country, often compared to the motorways. The distribution network carries electricity from the transmission substations at a lower voltage to communities, businesses, and individual households.


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## **What could the new transmission and distribution network look like?**

As a general rule of thumb, National Grid's transmission pylons are a minimum height of 118ft (36m).

As for distribution, the standard height for a steel lattice pylon to carry a 132kV overhead line is typically 27 metres. The average distance between each pylon is approximately 250m. However, the exact heights and distances will depend on ground conditions, topography or where the connection needs to cross existing infrastructure such as roads or railways.

The Welsh Government will be responsible for planning decisions regarding the distribution network. Whereas the consenting process for any new transmission network rests with the UK Government.

A decorative graphic in the bottom right corner consisting of several overlapping, stylized orange leaf or petal shapes.

## Who is responsible for paying for new electricity infrastructure?

The network companies themselves pay for the construction and maintenance of electricity networks. How much networks can spend is managed by the “price control framework” regulated by Ofgem. These are not paid for using public funds.

The networks companies in turn recover these costs through the energy supply companies. This cost makes up a proportion of the standing charge on energy bills.

There has not been much new network infrastructure development in the UK for the past 30 years. It is crucial we upgrade our networks to connect the projects generating renewable energy, move away from fossils fuels quicker and meet our net zero goals.

The less it costs to build and maintain this infrastructure, the lower the cost to households and businesses.

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## Why should Wales host projects that produce electricity for England and beyond?

As well as meeting our own electricity consumption needs, Wales could be a net exporter of energy in the longer term, leading the way in the UK.

Adopting an export ambition has unique economic and environmental advantages. Firstly, it sets the expectation for a strong pipeline of projects. This stimulates long term industry and infrastructure investment, supply chain and skills development and green economic growth for Wales. Producing more than we need indicates greater levels of inward investment, meaning more money will be spent in Wales and end up in Welsh people’s pockets. It also signals Wales’ commitment to making a leading contribution towards meeting the global climate and nature emergencies. Attracting foreign multinational investment into Wales brings with it opportunities to direct funds towards projects that matter to Wales – biodiversity enhancement, greater access to outdoor leisure and recreation facilities, community projects such as education, sport and culture, all of which means local jobs for local people.

Welsh businesses and communities recognise this opportunity. Recent polling shows between 65% to 79% of those surveyed in Wales support energy generation from renewable sources, such as onshore wind, offshore wind, tidal, hydro and solar.



## How will new grid infrastructure benefit communities?

The benefits of new grid network to communities are twofold; providing robust and reliable electricity connections to homes and businesses in rural areas so they can switch to cheaper, clean energy to heat their homes and power their cars; and enabling more community-led renewable energy projects to come forward.

Distribution infrastructure will mean that more community projects can be developed to connect to the grid, while transmission infrastructure will take small community energy projects from being simply schemes that support the local community, to projects that can sell excess power to the wider grid system.

The UK Government's Transmission Acceleration Action Plan sets out how communities should benefit directly from supporting transmission networks, taking the form of both reduced energy bills and community benefits.

The UK Government has further set out that the level of community benefit should be significantly more equitable, with a consistent level across the whole of the UK to communities. The report suggests this could be up to the level of around £200,000 per km of overhead lines, or £40,000 per km of underground cables, and a further £200,000 per substation.

In addition, they estimate that household properties closest to infrastructure could benefit from up to £1,000 per year for ten years.

Welsh Government recognises the economic, social and environmental benefits of community energy projects. To date it has set a goal of seeing 1.5GW being produced by community or locally owned energy projects in Wales by 2035.

Welsh Government and Plaid Cymru's Co-Operation Agreement has seen a commitment to support eleven community energy projects across Wales over the next three years. The scheme, called Ynni Cymru, will provide £750,000 of support to local energy projects which could, with the appropriate transmission infrastructure, support their communities with additional funds as well as green energy.



# Grid

## Case Studies

### National Grid Eryri National Park Enhancement Initiative

National Grid has supported the planting of nearly eight hectares of native woodland and restored 871m of hedgerow at Maentwrog near Blaenau Ffestiniog. The Landscape Enhancement Initiative is supporting projects to enhance Eryri National Park and is preserving ancient woodland by controlling invasive plants.

The natural landscape is being restored through hedge and tree planting, establishing new ponds, and drystone wall restoration within 3km of overhead transmission lines in the Clwydian Range and Dee Valley AONB.



### GreenGen Cymru community benefit

GreenGen Cymru are leading the way to ensure community benefits from renewable energy projects.

GreenGen Cymru's collaboration and partnership working with wind farm developers has seen community benefit funds shaped to ensure they best support communities. To achieve this, GreenGen Cymru expect project developers on their network to contribute £7,500 per MW of generating capacity annually into a community benefit fund.

Further leading the way, funds are safeguarded against economic fluctuations and adjustments are made in line with the Consumer Price Index to ensure contributions are future-proofed against inflation. In addition, all contracted partners are required to sign up to invest 2% of the contract value in social value generating activities in collaboration with communities near the projects.



### Adult skills

The National Grid's Building the Net Zero Energy Workforce report analysed the skills and expertise needed in the energy sector to help the UK reach its emissions target. This set out that the industry needs to recruit a further 400,000 people between now and 2050.

National Grid's adult skills programme supports unemployed adults to gain industry-recognised qualifications in areas of high unemployment, while the National Grid Apprenticeship scheme offers advanced and higher apprenticeships to develop industry skills through a combination of practical work and academic study.





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