

Onshore Wind in Wales:

How our sector works with communities



A report from RenewableUK Cymru

RenewableUK Cymru is the Welsh office of RenewableUK. Across RenewableUK and RenewableUK Cymru, we work with our members to support the building and operating of our future energy system, powered by clean energy. We jointly represent over 470 member companies to ensure an increasing amount of renewable electricity is deployed across Wales and the UK which will support economic growth, decarbonisation, and energy security. Our members in Wales are business leaders, developers, and technology innovators. We have a broad membership with extensive experience from all the major onshore and offshore (fixed and floating) wind developers in Wales, ports, supply chain, hydrogen, grid stakeholders and marine renewables.

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Foreword

Wales stands poised to seize an opportunity for clean, green energy. An opportunity that will decarbonise its industry, provide opportunities for jobs and economic growth and enable Wales to meet its net zero commitment of 100% electricity demand by 2035. In the context of the wider UK, the role that Wales has in optimising energy security and achieving net zero commitments cannot be underestimated. With a forecast pipeline in excess of 2.2 GW of onshore wind, enough to power almost 1.5 million homes, the people of Wales stand to gain not just from clean energy but also from the benefits that come from hosting a wind farm and its infrastructure in their communities.

In the context of the recent energy crisis, cheaper more affordable electricity is key. Onshore wind delivers in spades, with the potential to lower household bills as a cost effective and clean source of electricity. Alongside benefitting the nation through reducing electricity bills, there are a range of other tangible socio-economic benefits for communities that host an onshore wind project as explored in this report. Increasingly, the wider and indirect benefits are becoming better understood by local communities.

This report was commissioned to demonstrate the multiple ways in which communities can, and in the case of existing development already do, benefit from onshore wind farm projects. It highlights several case studies on the delivery of benefits to date and identifies ways in which the industry strives to ensure engagement, involvement, and inclusion of communities throughout both the development and operation of onshore wind in Wales.

The direct benefits that operational onshore wind projects are already bringing to communities in Wales are impressive. Within the report we have identified that **over £6.5 million** worth of investment is available to communities in Wales each year through existing Community Benefit Fund schemes (based on just under 1.3GW of operational sites). If we were to build a further 2.2 GW of onshore wind in Wales, this

could extrapolate to nearly £20 million going directly into our communities each year.

This report goes further than just numbers though, highlighting the array of wider benefits that onshore wind projects can and are already bringing to communities. What is clear from the exercise in collating this evidence base is the importance for community benefits to be tailored to each community. To deliver fair and desirable benefits to the community, we identify that community benefits should be flexible, transparent, and be proportionate to the scale of the development and impact to the host communities.

Whilst this opportunity is clear, it is crucial to recognise that the pipeline opportunity can only be realised in an environment that is attractive to ongoing development. Barriers to planning and grid connection remain. These must be overcome for Wales to appear an attractive location for investment. The Welsh Government must strive harder to reduce these barriers to enable not only the scale and nature of the community benefits that we describe in this report, but also to deliver net zero and combat climate change.



Figure 1: Y Ty Gwyrdd is a community hub and a sustainable shop in Denbigh and has benefitted from RWE's Clocaenog Forest Wind Farm CBF (photo creds: RWE).



Introduction

Renewable UK Cymru commissioned this report to highlight the ways and scale in which onshore wind farm developments are already benefiting the communities of Wales. Recognising that we have reached a critical juncture between climate change and net zero ambitions, communities have a very important role to play in hosting the very technology that will power their homes and ultimately drive their cars. Looking ahead, it is intended that this report can provide ideas and a starting point for improving the understanding of the work that the sector already does to support and involve communities.

This report seeks to highlight case studies of successfully delivered community benefit schemes across Wales. In addition, it will demonstrate the wider benefits we are already seeing but may also see in the future as communities are invited to host an onshore wind farm. These benefits are misunderstood, inadequately recorded, and are often underestimated for their potential for positive impact on communities and the surrounding areas.

Context

In 2019, the Welsh Government declared a Climate Emergency. Since then, Wales has legislated to reduce greenhouse gas emissions to net zero by 2050. As a result, Net Zero Wales sets out a series of policies and proposals to meet the carbon budget targets¹, whilst also delivering against the seven wellbeing goals enshrined in Wales's unique Well-being of Future Generations Act 2015². This Act gives Wales the ambition, permission, and legal obligation to tackle long-term persistent issues, such as poverty, health, inequality, and climate change for current and future generations.

As a source of energy, onshore wind is the most mature of all renewable technologies, and as a result is the most cost-effective and shovel-ready choice for power generation in Wales. It is one of the most deployable and lowest-cost electricity generation technologies, and is cheaper than gas, nuclear, and coal. Whilst Wales does not have a technology specific target for onshore wind, the Welsh Government has set a target for 100% of electricity

demand to be met by renewable energy by 2035. According to polling commissioned by RenewableUK in 2022, there is significant support for renewables. 74 – 88% of people in Welsh constituencies are supportive of onshore wind and 80 – 90% are supportive of having renewable energy projects in their local area – depending on the constituency.

Wales has been generating onshore wind at a commercial scale for over 30 years and now has just under 1.3GW of onshore wind generating power to the grid³. This is enough to power over 800,000 homes.

Repowering Wales' oldest wind farms gives them a new lease of life

Rhyd y Groes in Anglesey, commissioned in 1992, was the first commercial onshore wind farm in Wales. Consisting of 22 300kW turbines, with a combined power of 6.6MW, this project demonstrates how rapidly the technology has evolved. These turbines are due to be replaced (a process called repowering) and the site will generate a third more, at 9.9MW, with half the number of turbines that are three times as powerful.

Leading up to the 2035 target, Wales has the opportunity for more than 2GW⁴ in onshore wind power generation from projects currently in planning, development, or under construction (recognising that there will be a degree of attrition as constraints play out). As well as underpinning Wales's energy security, decarbonisation journey and net zero ambitions, this pipeline will support local communities both directly and indirectly.

The onshore wind industry has a long and largely positive track-record across Wales and the rest of the UK for community engagement and benefits. Acknowledging that in some historical cases, opportunities for community benefits have been overlooked. However, it is clear that more recent developments have recognised that engaging with

1. Llywodraeth Cymru (2022) Net Zero Wales, Available at: <https://www.gov.wales/net-zero-wales>

2. Comisiynydd Cenedlaethau'r Dyfodol Cymru (2015) Well-being of Future Generations (Wales) Act 2015. Available at: <https://www.futuregenerations.wales/about-us/future-generations-act/>

3. RenewableUK (2023) EnergyPulse. Available at: <https://www.renewableuk.com/mpage/EPUKPipeline>

4. Future Energy Wales: The critical role of Welsh wind power

communities and delivering benefits is a key aspect of helping renewable energy developments integrate into communities. Responding to some of this historical concern and the desire to maximise benefits, the recommendations from the Welsh Government's Deep Dive into Renewable Energy statement published in 2021⁵, highlights an ambition for increasing the opportunity for local ownership of renewable energy projects in Wales. This was followed by a Ministerial policy statement and local ownership guidance.

Local ownership is just one of the many ways that onshore wind can benefit communities in Wales, through increasing the retention of local economic

benefits and providing communities with a direct route to agency of a wind farm, motivating communities to buy in to and be involved with decision making. However, the economic benefits are not limited to local ownership. Furthermore, ownership may not be a desirable outcome for the community in question when weighing up the cost and benefit, with some preferring more tangible benefits to be realised. Schemes like community benefit funds (CBFs) and local electricity discount schemes provide a viable and attractive alternative, helping to realise economic benefits in the communities closest to onshore wind farms.



5. Llywodraeth Cymru (2021) Written Statement: Outcome of the Deep Dive into Renewable Energy. Available at: <https://www.gov.wales/written-statement-outcome-deep-dive-renewable-energy>



Benefitting local communities

Alongside the importance of onshore wind to Wales' national renewable energy and net zero targets, projects can provide a myriad of local benefits to communities across Wales. There are two main ways that onshore wind can provide benefits to communities: direct community benefits which are financial in nature and linked directly to the project, and indirect benefits; the wider socio-economic and environmental benefits that derive from hosting a project in the local region.

Engagement

The delivery of community benefits requires effective communication and interaction between developers and communities that will host an onshore wind project. At the heart of building meaningful relationships with communities is ensuring that developers are approachable and respectful of its project's neighbours throughout the lifetime of a project. Recognition of this from an early stage can help:

- Foster and maintain support for the new project.
- Increase public knowledge and awareness about the importance of renewable energy and net-zero.
- Understand the community's perspective of their priority improvement areas.
- Identify and create new opportunities for the local community.
- Establish an understanding of the community boundaries.
- Form a long-term legacy and relationship through all stages of the life of the wind farm.

It is important to recognise that there is no one-size-fits-all approach as no two communities are the same. Different communities have different needs and preferences and so it is essential that no one approach should be mandated. It should instead be flexible, transparent, and proportionate so that engagement is reflective of the community needs. Starting the engagement process as early as possible is beneficial to all stakeholders and will usually happen after the developer has completed an initial desk-based analysis. Community engagement is optimal when led by the project developer but driven by the needs of the community. Developers may well be mindful of different needs which can be impacted by geographical location, culture and traditions, present infrastructure and sectors, and language. For instance, Welsh is an official language in Wales and is the first language in many communities where onshore wind developments may be located.

By enabling community involvement in the decisions as to how the community will receive the benefits afforded in their area, they are likely to feel a connection to the development. This approach is quite unique to wind energy development and can shift the narrative away from the development being imposed on an area towards the wind farm providing a lasting legacy. In Wales in particular this aligns well with the goals of the Well-being of Future Generations (Wales) Act 2015 to create cohesive communities, increase resilience, and promote local prosperity and equality.



Direct community benefits

The onshore wind industry has a long history of sharing the rewards of renewable energy development with local communities. Supporting local communities who host onshore wind through a wide variety of community benefit schemes has become an established feature for the delivery of onshore wind projects.

Community benefit packages should take a bespoke approach to each project and its unique community. The ultimate package offered will be based on several factors, informed by consultation and engagement with as broad a range of local stakeholders as possible. The scale of what can feasibly be offered to the community, based on the economic case for the project, must also be well understood.

Once there is a good understanding of the aspirations of the community, negotiations can be undertaken with the community as to how they can best be delivered in alignment with community need and

project affordability.

Direct community benefits can broadly be broken down into the following categories: community benefit funds (CBF), local electricity discount schemes (LEDS), and local and shared ownership schemes – each with their own benefits and limitations which need to be assessed based on the specific community involved.

Community Benefit Funds (CBFs)

A community benefit fund (CBF) is a voluntary financial arrangement with the community. This fund allows the community to make use of long-term, reliable, and flexible funding to directly improve their local area, environment, society, and economy. Currently, it is estimated that communities across Wales receive over £6.5 million per year through CBFs linked to onshore wind farms alone.



Photo ©Aled Hall



CASE STUDY: LONG-TERM INVESTMENTS

Project: Alltwalis Wind Farm, Statkraft

First operational in 2009, Alltwalis Wind Farm powers the equivalent of 16,500 homes with clean renewable energy and is sited near the Brechfa Forest, to the north of Carmarthenshire, South Wales.

Since the CBF was established in 2011, 35 organisations in the Llanfihangel-ar-Arth area of Carmarthen have benefitted from funding, which is in place for the lifetime of the project.

Local churches, sports clubs, schools, and public services in Carmarthenshire have now benefitted from over £1 million investment from the CBF linked to the wind farm operated by Statkraft.

Almost half (49%) of the funds have been invested in improving local community buildings and services, with nearly 15% of the awarded money invested in educational facilities for local schools and Cylch Meithrin groups, especially during the pandemic. Additionally, more than a quarter (28%) of the funds have been received by sport and recreational groups, enabling clubs to improve equipment and facilities for their members. Remaining funds (8%) have been invested in preserving public services like the local fire and rescue and supporting events like the Eisteddfod.

The CBF is shaped and directed by the community

ensuring that all decisions are taken by a representative formal group of local people who donate time. Community engagement of this type is vital to ensuring the design of the wind farm fits the local area.

Dewi Thomas, Chair, Alltwalis Wind Farm Community Benefit Fund explained:

“By investing in local services, facilities, and organisations, we can make a real difference to the lives of the people who live and work in Llanfihangel-ar-Arth and in improving community assets that would otherwise fall into disrepair. We’ve been able to support a diverse range of projects, from the renovation of Alltwalis school as a community facility to providing sports equipment for the recreational ground in Llanfihangel ar Arth.

“However, we are always looking for exciting ideas or initiatives we can support across the area so welcome all submissions.”

Glyn Griffiths, Statkraft’s Site Manager at Alltwalis, explained: “It is important that as well as providing clean, green, renewable energy to homes across Wales, that Statkraft is a good neighbour, and that those living near our sites directly benefit. We’re proud to be able to give something back to the local community and support so many worthy causes and initiatives.”



CASE STUDY: DELIVERING COMMUNITY-LED PROJECTS

Project: Brechfa Forest Wind Farm, RWE

Brechfa Forest Wind Farm is a 57.4MW project in Carmarthenshire and was commissioned in 2018.

The RWE Brechfa Forest Wind Farm Fund was launched in 2018 by RWE and is worth £11 million over the lifetime of the wind farm. The fund aims to support the communities that neighbour the wind farm for the duration of the 25-year lifetime of the site. With a flexible approach, local knowledge and community support, the Brechfa Fund is transforming lives and proving that community-led initiatives can have a lasting impact.

During the consenting process, RWE engaged with an independent community development consultant to work with the local community to carry out a community profiling exercise. The aim was to raise awareness about the long-term funding opportunity, understand more about the community priorities and aspirations, as well as encouraging the community to build capacity and plan for the arrival of funds. Further consultation by the developer in 2017 provided the opportunity for everyone in the community to have their say and helped shape the structure of the fund.

The CBF is entirely community led with every decision made by a panel of local people who live, work, or donate their time within the wind farm's 6km benefit zone. Their local knowledge is invaluable in making informed choices about what's important for the area.

Applicants are supported and handheld by a locally based fund manager who works for the fund administrator, Antur Cymru an independent, local social enterprise, who was appointed as fund administrator following an open tender process.

Over the past three years, as well as generating significant match funding, the fund panel has:

- Helped to create a new lunch club, cinema club and IT hub.
- Engaged community development specialists to help projects develop, build capacity, and come up with new solutions to challenge.
- Given grants to much-needed community facilities, including community centres, church halls, provide long term funding for public toilets.
- Reduced carbon emissions and running by funding for electric vehicles for community transport schemes as well as solar panels and charging points on community buildings.
- Led the delivery of a strategic approach to supporting all the schools in their area.
- Responded to emergencies such as floods and the pandemic.
- Funded innovative projects like the purchase of a bunk house by their local hospice, which is creating a long-term income stream for the hospice as well as boosting tourism opportunities in the area.

A panel member quoted:

"I see the community benefit fund as the most incredible opportunity our community has ever had, this is a game changer for the next generation... truly a once in a lifetime gift horse. It's made me passionate and committed to get this right as this money holds the answer to creating jobs and retaining young people in our community."



CASE STUDY: TREASURING HISTORICAL COMMUNITY MEMORIES

Project: Pant y Wal Wind Extension Farm, Pennant Walters

The Pant y Wal wind farm is located adjacent to the Ogwr Valley in South Wales. The wind farm became fully operational in December 2017 and the fund, established by Pennant Walters, is managed by Ogmore Vale Community Council. In 2021, £100,000 was awarded to 18 organisations including charities, sports clubs, community centres, and schools across the Ogwr Valley region.

The Ogmore Valley Local History Society applied for funding from the Pant y Wal CBF for a legacy focussed project. The Ogmore Vale residents now have a host of local history at their fingertips after an accessible digital kiosk has been installed. The kiosk, in Nantymoel Heritage Hub, has been installed to encourage more people locally to access over 20,000 pictures and publications which share insight into the changing face of the local community over the past 200 years. The user-friendly kiosk is accessible to everyone who

visits the hub, Nantymoel Boys & Girls Club and the Community Cafe.

Huw Daniel, Secretary at Ogmore Valley Local History Society, explains:

“The kiosk has long been a dream for us. We simply want to share the history of the area with people far and wide and encourage local youngsters to understand more about the make-up of our community. We have a rich source of data, information and photographs and using the kiosk technology, we have been able to bring these to life so that they are accessible for all to enjoy”

Pennant Walters Managing Director, Dale Hart, said:

“Our wind energy project community fund exists to make a difference to the local communities in which we work. We are proud to be a member of the local community and have an important role to play in supporting the efforts of organisations seeking to make a difference to people who live and play locally”.



Figure 2: Ogmore Valley Local History Society members and the kiosk (photo creds: Create Communication).



CASE STUDY: OPPORTUNITIES FROM LARGE WIND FARMS

Project: Pen y Cymoedd Wind Farm, Vattenfall

Pen y Cymoedd wind farm is located between Rhondda Cynon Taff and Neath Port Talbot in South Wales. It is a 228MW project with 76 turbines and became operational in 2017.

The Pen y Cymoedd Community Fund distributes over £2 million annually to the local communities of the Neath, Afan, Cynon and Rhondda valleys (£1.8 million indexed linked).

The fund is managed by an independent, locally based not-for-profit Community Interest Company run by local directors. Over £11.8m has been distributed in funds during the first 5 years which drew in a further £8.2 million matched funding into the area.

Amongst those grants were these examples:

- Over £500,000 distributed through the COVID emergency fund which helped 32 businesses and organisations financially recover after the COVID pandemic.
- £404,500 from the community fund supported of The Play Yard in Treorchy, a soft play centre for children and babies. As a result, over 10 jobs have been created, and over 200 school lunches provided for children in need.
- O Dan yr Awyr/ Under the Sky project has secured £194,258 from the Cymoedd Community Fund Vision award. This four-year project promotes community food growing by turning disused land into community gardens, green learning activities for schools and growing groups, and accredited learning opportunities in partnership with Neath Port Talbot College Group.



Figure 3: Manager, Nathan Howells at The Play Yard (photo creds: Huw John Photography).



CASE STUDY: REFURBISHMENT OF COMMUNITY SHARED SPACES

Project: Cefn Croes Wind Farm, Renantis.

Cefn Croes Wind Farm is a 39-turbine project located east of Aberystwyth, with a total capacity of 58.5 MW.

Developer Renantis' first community benefit scheme, the Cefn Croes Wind Farm Community Trust Fund was set up as a Charitable Trust in March 2005 with the aim to support small community-led organisations. The fund is managed by a board of five Trustees. Priority is given to projects in the Community Council areas of Blaenrheidol and Pontarfynach and then to the wider area of Ceredigion.

The Cefn Croes Farm Community Trust Fund awards were crucial to the success of the total refurbishment of Canolfan Cymunedol Mynach Community Centre (Old Devil's Bridge Chapel). The refurbishment also included the addition of a new kitchen and toilets. Since its opening, the Centre has been at the heart of the local community, working as a "hub" hosting numerous events and meetings that previously didn't have any facilities available to them. These include,

weekly stretch and Zumba classes (health & wellbeing), weekly Welsh language courses (educational), monthly Art and Craft club classes (recreational) and regular events such as Breakfast Clubs, Craft Fairs and Seasonal events.

A community representative said:

"Canolfan Cymunedol Mynach Community Centre is all about the community, they benefit enormously through other people providing services in the Chapel. It has been a fantastic opportunity for the community to come together. It now houses a lot of local groups, which has enabled people to get out and meet each other again, especially after Covid. We have got a fantastic Welsh group with about 20 members who meet every Thursday that are all enthusiastic about promoting the Welsh language and the community are enthusiastic about learning it as well. We thank the Trustees for looking on the application and taking faith in what you see now basically, which is a fantastic community centre with lots of things happening in it, and there is more planned as well. And none of that would have been possible at all without the funding from Cefn Croes"

BENEFITS AND LIMITATIONS

CBFs are a popular and well used model with a proven track record for providing financial benefits to local communities. There are many ways that funds can be used to support a wide range of groups within a community, and the choice lies with the community.

CBFs offer considerable flexibility to a community. Where public funds will often restrict how an applicant can spend its money, CBFs can often choose to support capital or revenue projects (those requiring salaries, running costs which are often excluded from public funds but are integral to delivering projects on the ground). They also provide flexibility as to how the funds are delivered (grants, loans, proactive spending (if aligned with a community plan), basis for match funding, advance payments to aid cashflow.

This flexibility enables communities to fund what they really need when and where they really need it, instead of being held to specific criteria and artificial timeframes that are often associated with public funding sources. Further to this day-to-day flexibility

is the ability to roll funds over, allowing communities to "save-up" for more expensive yet potentially more impactful projects. As such they represent a broad spectrum of support for communities, which can result in an onshore wind farm development creating a legacy.

CBFs also tend to have simple and straightforward application processes, which in other funding routes can be so bureaucratic as to deter communities from applying. They are designed to ensure that the fund is accessible and available to the beneficiary communities.

The COVID pandemic highlighted the advantage that many of these funds have in comparison with other more traditional funding methods in being able to be quickly used and administered directly by the community.

There are however some limitations. The most successful CBFs have a proactive and interested local community at the heart of the decision-making process. However, in some instances, CBFs can fail

to reach their full potential due to a lack of engagement, ideas on how to use funding or disagreements within the community. In these instances, best practice, involving professional fund administrators to support communities or greater developer involvement can help. Whilst there is a cost associated, where the fund is of sufficient size the advantages of a professional fund administrator far outweigh the cost. They can help to bring community ambition to life, providing support, advice, connections and enabling ideas to be brought forward that might otherwise be foregone.

In some instances, particularly in areas where there may be several projects from different developers, communities may struggle to find opportunities to use funding. For example, in a small community you may see several initiatives like improvements to the village hall or the church roof carried out relatively early and then may not know where best to channel future

efforts. However, the onshore wind sector is active beyond Welsh borders, and we can look to our British neighbours and to European examples to generate ideas and support communities. It is in this case that the unique nature of our sector can play a key beneficial role. Developers can work in collaboration with communities to explore innovative and creative ideas; looking to Scotland we see projects supporting affordable housing, closer to home we have seen local schools and nurseries funded, enabling working mums to return to work affordably.

Local Electricity Discount Schemes (LEDS)

A local electricity discount scheme (LEDS) is an in-kind initiative where residents and local businesses who are located near an onshore wind farm can benefit from discounted electricity bills on an annual basis.



CASE STUDY: LOCAL ELECTRICITY DISCOUNT SCHEMES AT RES

The first RES Local Electricity Discount Scheme (LEDS) in the UK was set up in 2013. RES now has over 20 participating operational wind farms in the UK offering LEDS, and in 2022, 5,000 properties benefited from a total of £1.1 million in payments.

RES' 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).

Project: Garreg Lwyd Hill Wind Farm, RES.

Garreg Lwyd Hill Wind Farm in Radnorshire, Powys, became fully operational in Spring 2017. The seventeen-turbine project has an installed capacity of 34MW, which is sufficient to meet the average annual electricity demand of more than 26,000 homes.

The communities closest to the Garreg Lwyd Hill Wind Farm benefit from a CBF and an innovative Local Electricity Discount Scheme (LEDS), which offers residential, commercial, and community properties within 6.5km of the turbines an annual discount on their electricity bill (index-linked).



CASE STUDY: OCTOPUS FAN CLUB

The Octopus Fan Club allows customers to benefit from local renewable energy production in real-time. Customers living close to one of the Fan Club turbines can get 20% off their electricity unit rate when their turbine is spinning and up to 50% off when the wind really picks up. Members can monitor their 'Fan' from their energy account, or even better, from their window, to make sure that they are making the most of their potential savings. Some customers can save up to around £350 a year as a result, especially if they shift their energy intensive chores to times when it's very windy.

There are currently three onshore wind Fan Clubs in the UK: in Market Weighton and Halifax in Yorkshire, and Caerphilly in South Wales.

"I think of how proud and lucky I am to live where I live. Community is everything in small Welsh towns. And it's a great place to expand greener energy and make the most of our great landscape. Get more turbines up!"

"I wanted to sign up more for green energy, however, the discounts I have seen have 'blown me away'!"

"The whole concept is brilliant and has changed the way I do my washing, tumble drying, dishwashing".

– Quotes from Fan Club members



Photo ©Octopus Energy

LEDS are one of the most direct ways of offering money off residents' energy bills and can provide a clear and obvious energy link between a local project, equating to a financial impact for a resident. However, LEDS have to be administered by an expert body and factor in issues such as project size, population density, different types of housing, specific technical metering challenges and the cost vs. benefit analysis of setting up a scheme. Some projects therefore are not suitable for every community, developer, or project type.

Onshore wind does however provide discounts on energy bills in other ways too. At the national level, having more low-cost renewables on the energy system reduces bills. A recent Carbon Brief study estimated that the impact of the 8 year long de-facto ban for onshore wind in England cost the UK £5.1bn last year, equating to an additional £182 on every household bill across Wales and the rest of the UK, as a result of a large pipeline of onshore wind projects not being built⁶. This figure does not consider the number of projects in Wales that are stifled by grid and planning constraints – enabling actions to deploy these onshore projects in Wales would help reduce bills even further at a national level.

On a local level, funding programmes of energy efficiency improvements in houses through CBFs or with government help would also make a significant contribution towards reducing energy bills, with the added benefit of potentially providing more of a legacy for residents.

Local, community and shared ownership

To date, most commercial-scale wind farms have been developed and owned by private companies. However, there are some opportunities where communities can participate in local, community or shared ownership schemes.

The specific details of any kind of ownership scheme will differ depending on the particular project. This year the Welsh Government updated its target for 1.5GW of renewable energy projects to be locally owned by 2035 (previously 1GW by 2030)⁷. Since 2020, Welsh Government policy also sets an expectation for all new energy developments in Wales to have at least an element of local ownership. The definition for each type of ownership is set out in the Welsh Government's local and shared ownership

policy statement⁸ and is supported by ownership guidance⁹. Here they detail how shared ownership can be achieved and their ambition for local ownership to be delivered across a wide range of technologies and scales of development. They also aim for shared ownership to offer a solution for communities to have a stake in larger developments as well as for public and private sector partners to develop projects jointly.

BENEFITS AND LIMITATIONS

Some of the benefits from local and shared ownership include building resilience in the local community and providing long-term financial returns for members of the community.

However, the ability for developers to offer ownership opportunities are highly dependent upon the economics of a project. Equally, this applies to individuals within the community. Construction of onshore wind farms may require a significant initial outlay. The perception of risk both across the community and within individuals is also a factor for consideration and would be closely linked to the ownership model that the wind farm can support. As such communities may prefer the certainty of a consistent income stream from a long-term community fund.

Additionally, the ability of local communities to invest and develop projects that are community owned are highly influenced by the wider economic environment. Welsh Government has sought to address this issue through a proposed offering through the Development Bank of Wales which would enable developers and communities to access funds to facilitate individual investment, however this is understood to be a work in progress.

If the specific project is suitable, then ownership options offer an opportunity for local people to develop a greater sense of involvement in a project and can help to grow support and build a legacy for a project. The positive impacts of shared ownership schemes are not necessarily limited to local communities. Individuals who are not situated near a wind farm also have the opportunity to participate in shared ownership schemes. For example, the Ripple model allows for digital and urban communities to engage and benefit from owning part of a wind farm (see case study on p.16).

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7. Llywodraeth Cymru (2023) Wales aims to meet 100% of its electricity needs from renewable sources by 2035. Available at: <https://media.service.gov.wales/news/wales-aims-to-meet-100-percent-of-its-electricity-needs-from-renewable-sources-by-2035>

8. Llywodraeth Cymru (2020) Local ownership of energy generation in Wales: policy statement. Available at: <https://www.gov.wales/local-ownership-energy-generation-wales-policy-statement>

9. Llywodraeth Cymru (2022) Local and shared ownership of energy projects: guidance. Available at: <https://www.gov.wales/local-and-shared-ownership-energy-projects-guidance>



CASE STUDY: SHARED OWNERSHIP

Project: Graig Fatha Wind Farm, Ripple

Graig Fatha is located in Coedely in Rhondda Cynon Tâf, South Wales and is a single 2.5MW turbine project energised in March 2022. The project was built as a pilot project for Ripple, a renewable energy shared ownership platform.

This single turbine has over 905 owners and has saved over £500,000 to date on electricity bills.

This project has also lowered home energy CO2 emissions by 1.2M kg, which is the equivalent carbon reduction of almost 400,000 trees.

Ripple's platform enables members to own small parts of a large-scale wind farm and solar parks via a co-operative. Ripple enables consumers to act on climate change whilst reducing and stabilising their electricity bills. Once a wind farm is operational, the owners' energy supplier buys their share of the generation at its operating cost rather than the higher wholesale market price. The amount of savings for members varies according to the amount owned and wholesale electricity prices, resulting in higher savings for members when wholesale prices are high. The opposite is also applicable, when the wholesale price is low, so are members' savings.



Figure 4: Ripple's Graig Fatha wind turbine (Photo creds: Ripple).

Community and shared ownership schemes can be variable, meaning that the financial return for stakeholders is dependent on the performance of a wind farm. It does also depend on residents being able to have the funds available to invest and could exclude some members of the community.



Wider Benefits to Communities – Economic, Social and Environmental

In Wales, the planning system must ‘reconcile the needs of development and conservation, securing economy, efficiency, and amenity in the use of land, ensuring the sustainable management of natural resources, and protecting, promoting, conserving, and enhancing the built and historic environment’¹⁰. Together with direct community benefits such as CBFs, wider benefits to the community ensure that principles of planning policies are accomplished.

The scale of the positive impact on the wider community **can often be underestimated**. Onshore wind farms can unlock opportunities for development in rural areas throughout Wales and can include, but are not limited to, employment of local people and supply chains, the upgrade and

establishment of local infrastructure, maintaining and improving the environment surrounding projects, and additional recreation facilities in the region.

According to a RenewableUK report in 2021, if Wales built an additional 2.2GW to reach 3.5GW of onshore wind before 2030, Wales could see significant economic benefits with an expected £4.4 billion in GVA and 3,000 jobs by 2030. However, without significant supportive activity, consistent and stable policy and decision making, and leadership from the Welsh Government and UK Government addressing some of the barriers to development, the full socio-economic potential of onshore wind will not be realised.

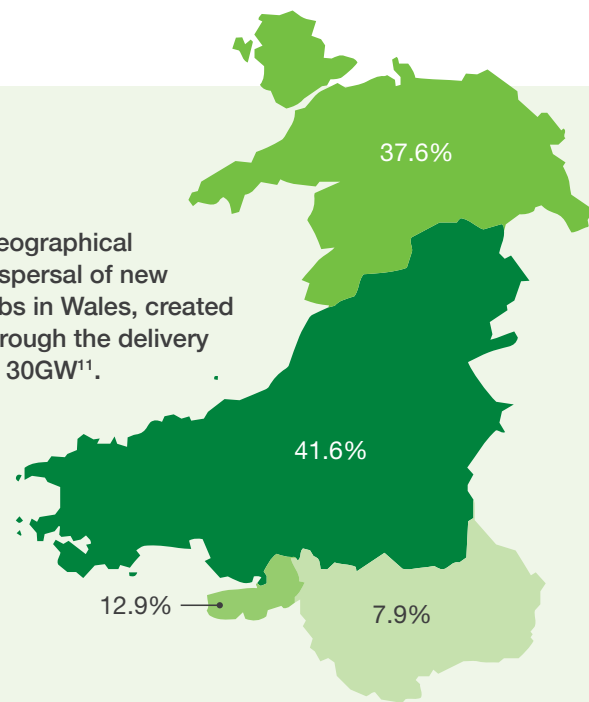
SPOTLIGHT ON WALES

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

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

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

Geographical dispersal of new jobs in Wales, created through the delivery of 30GW¹¹.



Socio-economic

JOBS, EMPLOYMENT, AND SKILLS:

Throughout the development of a wind farm, developers contribute to the upward social mobility of communities by participating in local procurement and sustainable activities. Whilst the Well-being of Future Generations (Wales) Act 2015 applies to public bodies, onshore wind developers actively contribute to the fulfilment of the goals set out in the Act. For example, where possible developers will prioritise the

use of local businesses during the construction and development of a wind farm. The opportunities of value add from these commitments are significant. Upskilling businesses and training Welsh people in targeted areas for renewable energy represents an opportunity that goes beyond local impact. As the renewable sector in Wales progresses from onshore development, construction and operation in the short term to deploying longer term fixed and floating wind offshore projects, these transferrable skills will be invaluable. Onshore wind can incubate the skills,

10. Llywodraeth Cymru (2021) Planning Policy Wales. Available at: https://www.gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf

11. RenewableUK (2021) The Onshore Wind Industry Prospectus.

Available at: https://cdn.ymaws.com/www.renewableuk.com/resource/resmgr/media/onshore_wind_prospectus_fina.pdf

talent, capacity and business growth necessary to support local content for offshore development in the future. Alternatively, some schemes specifically seek to support local people with their formal education by providing educational bursaries and grants and others

have set up green skills investment programmes for students to access the renewable energy sector. This also represents potential for better employment opportunities and social mobility throughout the region.



CASE STUDY: SKILLS AND SUPPLY CHAIN

Project: Clocaenog Forest Wind Farm, RWE.

Clocaenog Forest wind farm is a 27-turbine project near Denbigh, capable of powering 63,800 UK homes.

RWE's Clocaenog Forest wind farm started delivering a £768,000 annual community investment fund in 2020. Up to March 2023 the fund has invested over £2.5 million into 125 grants, helping to creating more than 75 jobs, and safeguarding a further 100 in the process. These projects have also helped to create over 7,500 opportunities for people to develop new skills and also helped to unlock over £2.8 million more in match funding.

The principal contractor of this onshore wind project was Jones Brothers Civil Engineering UK,

which is headquartered less than 10 miles from the site in Ruthin, Denbighshire. The contract was worth £20 million and provided work for 60 employees with 14 apprentices and trainee engineers.

Jones Brothers contracts director, Eryl Roberts remarks: *"We are passionate about renewable energy, the local community, and providing opportunities for people from the region to work on projects, and this scheme ticked all of those boxes."*

Meanwhile, project engineer, Hari Evans, who worked on the scheme stated: *"I learned a lot from my time at Clocaenog and I really developed my skills. I live so close by, so to work on a major renewables project that my friends and family will be well aware of and potentially see, was fantastic."*

RECREATION AND TOURISM OPPORTUNITIES:

Onshore wind projects can have a positive effect on the local economy through recreation and tourism. A recent survey found that 75-90% of tourists display a neutral to positive attitude towards onshore wind farms in rural landscapes in the UK¹².

Additionally, increased recreation activities at wind farms have the potential to positively impact individuals physical and mental health.

There are several wind farm sites that offer a range of physical exercise activities such as organised runs, access to new walking, mountain biking and cycling routes and supporting infrastructure such as visitor centres.



Photo ©Octopus Energy

12. Tom Mordue, Oliver Moss & Lorraine Johnston (2020) 'The impacts of onshore-windfarms on a UK rural tourism landscape: objective evidence, local opposition, and national politics', Journal of Sustainable Tourism, 28:11, DOI: 10.1080/09669582.2020.1769110.



CASE STUDY: RECREATIONAL ACTIVITIES

Project: Project: Fan Club Number 2 (Caerphilly), Octopus Energy.

The Octopus Fan Club has several sites located across the UK, with Fan Club Number 2 being a single turbine in Caerphilly, South Wales.

Several recreational activities have been carried out for local communities surrounding Caerphilly, including:

- A competition to climb the turbine: The Valentines Day competition was open to the Fan Club Number 2 (Caerphilly) for the winner to climb the turbine. The winner of the competition filmed the turbines and created a poem about saving money when the wind is blowing.
- A fun and educational trip to the turbine for local school children: A class of school children from a local school in Deri took part in a competition to design the sign for Fan Club Number 2. This was followed by a trip to the wind turbine on a sunny day with a scientist to teach them about renewables and climate change.
- Screening the World Cup: Octopus hosted an event in Deri community centre where the local community were invited to watch the Wales vs USA World Cup football match. Field staff were there to talk to the community about the Fan Club, alongside pizzas and drinks.

RURAL CONNECTIVITY:

During the planning and development phases of an onshore wind farm, it is common for developers to assess the connectivity of the area around the wind farm. The assessments can be for connectivity issues such as broadband and road infrastructure networks. The construction of a wind farm requires roads to be wide enough to transport components of a wind farm, such as turbine blades - these can be as large as 90 metres in length. In some cases where the road networks are not large enough to transport wind farm components, the developer will contribute to funding road improvements.

The lack of electricity infrastructure in Wales, particularly in rural Wales, has been a frequent issue debated and reported on in the House of Commons, the Senedd and the media. Upgrading the electricity transmission infrastructure network has the potential to positively benefit rural connectivity in remote communities. Modern operational wind farms require quality, high-speed broadband at the site. As a result, there are opportunities for developers to upgrade broadband capacities and 5G capabilities for the local area, supporting digital connectivity and helping the livelihoods of residents and businesses operating near a wind farm.

Environment

Net benefit for biodiversity in Wales: As part of the planning process for a wind farm, developers have to identify and require suitable ways “to avoid, mitigate or compensate adverse impacts of renewable and low carbon energy development” on the natural environment¹³. Many developers have implemented positive environmental schemes. These include reforestation and woodland restoration, peatland restoration, habitat management, and wildlife conservation to mitigate and compensate any impacts as well as providing environmental enhancement opportunities.

The Welsh Government’s recently announced policy changes for Net Benefit for Biodiversity and Ecosystem Resilience aims to “secure long term, measurable and demonstrable benefit, primarily on site” through the planning process. However, the restrictive wording of this updated policy (especially in terms of development on peatland) risks curtailing a significant amount of onshore wind development opportunity in Wales, including those areas targeted by Welsh Government’s own development company, Trydan Gwyrdd Cymru.

13. Llywodraeth Cymru (2021) Planning Policy Wales. Available at: https://www.gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf



CASE STUDY: HABITAT MANAGEMENT AND PEATLAND RESTORATION

Project: Pen y Cymoedd, Vattenfall

Pen y Cymoedd is located between Rhondda Cynon Taff and Neath Port Talbot in South Wales. It is a 228MW project with 76 turbines and became operational in 2017.

Vattenfall works in partnership with Natural Resources Wales on a £3 million Habitat Management Plan operating over 1500ha to restore habitats and improve peatland ecosystem resilience on the Welsh Government Woodland Estate in South Wales.

The restoration of the natural underlying peat bog hydrology is achieved through raising the water table by infilling existing drainage systems and plough furrows and other restoration activities. This helps to recreate the conditions needed for peat forming plants to recolonise the site. Active bogs can sequester carbon and provide the biodiversity benefits of blanket bogs in the long-term, adding

an extra defence for fighting climate change. Restoration of the peatland will encourage wildlife to thrive in their natural habitats including- skylark and nightjar; dark green fritillary and small pearl bordered fritillary butterflies; and mammals, like the water vole to flourish.



Figure 5: Pen y Cymoedd Wind Farm ©Hawlfraint y Goron / Crown Copyright.



CASE STUDY: SKILLS AND SUPPLY CHAIN

Project: Clocaenog Forest Wind Farm, RWE.

Clocaenog Forest wind farm is a 27-turbine project near Denbigh, capable of powering 63,800 UK homes. RWE's Clocaenog Forest wind farm started delivering a £768,000 annual community investment fund in 2020.

Clocaenog Red Squirrels Trust (CRST) was awarded a grant by Clocaenog Forest Wind Farm Fund, worth £35,000 over 5 years for the CRST Magic Mammals programme. The Magic Mammals project will enable the enhancement of habitat conditions required for Red Squirrels to thrive in the Clocaenog Forest.

Funding from RWE's wind farm has supported the part-time placement for a ranger in the forest, as well as engagement with the local communities through educational presentations for school children and guided tours. In addition, through RWE's Clocaenog Habitat Management Plan,

CRST has also received a further £18,632 to date towards its wider red squirrel conservation work including purchasing trail cameras, feeders, producing leaflets and updating CRST's website.



Figure 6: Magic Mammals Ranger is supported by RWE's Clocaenog Wind Farm. ©RWE



A sense of greater ownership and connection to the development is often harnessed through fostering a meaningful and long-lasting relationship with the community, and encouraging their desire to inform the nature of community benefits. This approach is quite unique to wind energy development and, can shift perceptions of the development being imposed on the area towards the wind farm providing a lasting legacy. In Wales in particular this aligns well with the goals of the Well-being of Future Generations (Wales) Act 2015 to create cohesive communities, increase resilience, and promote local prosperity and equality. A key consideration within this context, however, is that the proposed community benefit options available may represent a range of solutions but it is important to realise that onshore wind developments must remain economically viable, and the costs attributed to the community benefits will form part of the economic case for taking a wind farm forward. A balance must be struck that enables projects to progress, to deliver green electricity at a reasonable cost whilst also understanding and delivering the needs of communities.

Investment through CBF schemes for communities closest to onshore wind farms across the UK is estimated to be around **£75 million a year**, of which

over **£6.5 million a year is in Wales.**

This compares to over £55 million in Scotland, over £10 million in England and over £3 million in Northern Ireland.

In terms of the delivery of those benefits, we have showcased several case studies demonstrating where developments in Wales are already providing direct and indirect benefits to local communities. A range of options and opportunities exist for communities through direct benefit schemes with lasting beneficial impact. We have outlined how CBFs are already delivering across Wales and that they afford significant advantages over other sources of funding as they can be awarded to almost any project or cause that the community supports.

We have also explored alternative community benefit mechanisms at play in the sector, some already in Wales, others anticipated, should the right development conditions prevail. These options can include direct discounts on electricity bills and shared ownership of onshore wind projects. Wider benefits associated with the opportunities from the development and operation of wind farms, can also bring significant socio-economic and environmental benefits to local and regional communities.

However, there are several barriers that hold back communities in Wales from securing these benefits – primarily grid capacity and planning timescales.

An **insufficient grid network** - the absence of adequate grid infrastructure, grid connection delays, increased costs and uncertainty about connection locations and dates across Wales – is limiting or delaying renewable energy projects and is a significant barrier to net zero. Electrification of transport, buildings and industry will result in higher electricity demand in Wales with supply needing to double by 2050¹⁴. Therefore, there is real urgency to develop the infrastructure and capitalise on the potential renewable energy opportunities across Wales. The amount of onshore and offshore wind capacity that is directly connected to the transmission network in Wales is forecast to increase significantly from 41% (804MW) at the end of 2021 to 67% (5,794MW) by the end of 2035 – a 7-fold increase in capacity based on current grid connection agreements and connection dates. A programme of proactive, anticipatory, and strategic upgrades to the transmission and distribution networks is needed to enable decarbonisation across the country, especially in the Mid Wales region as well as enable wider decarbonisation across Wales.

Secondly, response times for **planning and permitting** need to be streamlined to accelerate deployment of renewable energy projects with clear pathways for decision making. Our recent report – The Critical Role of Welsh Wind Power – underscores a historic lack of applications coming forward and long delays in the planning system. Only two large-scale onshore wind farm projects have been through the Development of National Significance (DNS) regime since 2016¹⁵. One was approved and took nearly two years.

This is down to a shortage of skilled personnel within the regulatory body, inconsistent decision-making and a lack of clear and strategic supportive policy (although the introduction of Future Wales: The National Plan 2040 has reduced this). Through the Infrastructure (Wales) Bill, we need clear infrastructure policy statements, alongside Future Wales, to steer clear decision-making and provide greater certainty for investment in new developments and repowering projects. Critically, planning authorities, planning related bodies, and statutory consultees need to be sufficiently resourced to effectively engage in the process and make timely planning decisions, enabling the most effective outcomes for developers and communities.

14. Net Zero Wales by 2050: Wales faces a decisive decade to get on track to an emissions-free future - Climate Change Committee (theccc.org.uk)

15. RenewableUK Cymru (2023) Future Energy Wales: The Critical Role of Welsh Wind Power





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

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