**RenewableUK Cymru response: Member input**

**Consultation page:** Green economy (senedd.wales)

Economy, Trade, and Rural Affairs Committee
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**Senedd Economy, Trade and Rural Affairs Committee: Green Economy inquiry**

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 460 member companies across Wales and the UK to ensure an increasing amount of renewable electricity is deployed which will support the decarbonisation of our economy, reduce emissions, and respond to the climate emergency. 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 wind (fixed and floating) developers operating in Wales, as well as key ports, supply chain, grid and planning stakeholders. Our members deliver **investment, jobs, community benefits and reduce emissions** in Wales. RenewableUK Cymru welcomes the opportunity to respond to the Senedd committee's inquiry on the Green Economy. This response has been informed by discussions and input from our RenewableUK Cymru members to bring together the views of industry – our response will be focused on the wind energy sector and the associated infrastructure's role in supporting the green economy.

**The role of renewable energy generation at the heart of the green economy**

A diverse, flexible, renewable based energy system is fundamental to support the net zero ambition and energy transition in Wales. Deploying a mix of technologies across Wales will bring a range of benefits; reducing our reliance on fossil fuels and international gas prices resulting in increased energy security, lowering electricity bills, unlocking productivity, and reducing carbon emissions to tackle the climate emergency. **Significantly, accelerating renewable energy generation across Wales to decarbonise our power system, industries, heating and transport while supporting the development of associated infrastructure and supply chains will be the crucial foundation of our future industrial growth and green economic prosperity.**

**Accelerating renewable deployment as a foundation for powering the green economy will provide lower cost electricity.** Renewable energy was significantly cheaper than fossil fuels during the energy crisis in 2022, shielding bill payers from some price rises. Even prior to the gas crisis, renewables had already saved consumers over £6.1 billion on their bills (equivalent to £221 per household) in 2021 by displacing gas[1]. Renewables helped the UK avoid the need to buy nearly £12.5 billion of gas in 2022[2]. As well as enhancing national prosperity, there are **multiple local benefits** to renewable energy development through **jobs, GVA, local supply chain development, community benefit funds** (onshore wind projects are already contributing more than £6.5 million a year to Welsh communities and could grow to £20 million a year by 2035[3]), **landowner payments supporting rural diversification; improvements to outdoor access and recreational facilitates; habitat restoration and management plans to enhance local areas; apprenticeships and skills training; business rates paid over the lifetime of a project; inward investment in rural and coastal areas; and the provision of the cheapest form of electricity for homes and businesses.**

It has been encouraging to see the setting of the Welsh Government's target to meet 100% of Wales' electricity demand from renewable energy sources by 2035 and net zero by 2050 with supporting activities through the

[1] Renewed Importance: How Renewables Cut Energy Bills (ukonward.com)
[2] Analysis: Why UK energy bills are soaring to record highs – and how to cut them - Carbon Brief
[3] Welsh communities poised to seize the green energy opportunity from onshore wind | RenewableUK Cymru

Renewable Energy Deep Dive to address barriers to renewable energy deployment. However, an accelerated deployment of large-scale renewable energy projects across Wales and in the Irish and Celtic Sea will be key to achieving these targets and the pathway to achieving this remains unclear. Now is the time to focus on working in partnership between the Welsh Government, industry and communities – and in collaboration with the UK Government on reserved matters – to create a positive and aligned policy environment for renewable energy deployment, to establish Wales as a leader for net zero, and maximise the associated benefits for the Welsh economy, communities, ports, supply chain and enhanced biodiversity. **Providing certainty and confidence for investment is absolutely crucial**. It's only with project delivery that we will see these benefits realised. With significant UK and global competition for renewable energy projects and supply chain capacity and capability, we risk losing out on the largest economic opportunity for Wales in decades if we do not provide the right market and policy signals.

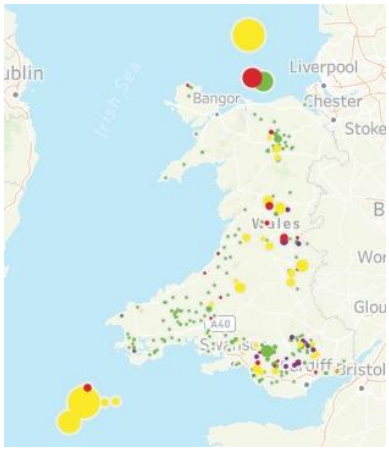
## The scale of the opportunity

The green and net zero economy concepts are both built on a foundation of renewable energy generation. To realise these economic opportunities, a long-term pipeline of projects and certainty for timely delivery is crucial.

According to ECIU, there are almost 20,000 business across the UK currently within the net zero economy which are contributing £71billion (3.7%) in Gross Value Added (GVA) to the UK economy annually. This includes hot spots in North-East Wales and South Wales where £310million (4.4%) and £1616million of area GVA comes from the net zero economy supporting 3,397 and 16,090 FTEs respectively[4]. GVA per employee within the net zero economy in many regions contrasts to the economy-wide levels. While Wales does not experience high economy-wide productivity (where London and the South-East dominate above the UK average), the net zero economy in Wales is over three times more productive than its regional average at £181,200 GVA per employee, the highest in the UK. This demonstrates that the net zero economy is a highly productive sector for Wales.

The green economy opportunity for Wales associated with the development and delivery of wind energy projects is significant. Wales has an extraordinary opportunity to deploy a variety of onshore and offshore wind energy technologies as well as wave, tidal and solar – all of which can bring economic opportunities across the geographical regions of Wales, if enabling actions and infrastructure are urgently put in place. To date, Wales currently has just under 2GW of operational wind energy projects, including 1250MW of onshore wind and 726MW of fixed offshore wind.

Power generation from Wales' diverse renewable sources will be at the heart of the future Welsh green economy, with the potential to deliver 9GW from wind power alone by 2035. However, this will still be below the target to reach the required 29TWh. This 9GW is made up of current capacity and the pipeline of projects under construction, consented, in planning or under development. To match the projected rise in demand, this will require more than **quadrupling the renewable electricity generation in just over 10 years.** Yet there is an enormous distance to cover. More than three quarters of this capacity has not yet been built, and from our research of public domain projects, more than half are in the early stages of development, and yet to enter the planning system.



*Current and in-development onshore and offshore wind projects over 10MW (operational and under construction)*

From RenewableUK's Energy Pulse platform and knowledge of projects not yet in the public domain, the potential pipeline includes just under 2.5GW of onshore wind (with an additional 2.6GW not in the public domain) and 2GW of new fixed offshore wind. As well as ~300MW of floating offshore wind test and demonstration projects, The Crown Estate's 4.5GW Leasing Round 5 in the Celtic Sea is expected to deliver around 2.5GW of floating offshore wind in Welsh waters by 2035 with a potential future pipeline of up to an additional 12GW across the region. While offshore wind is set to ramp up, onshore wind still remains one of the lowest-cost and quickest to develop at scale, with rapid construction times of just over a year. It will be crucial for Wales' decarbonisation efforts especially in the near-term – to

[4] Mapping-net-zero-economy-ECIU-CBI-DataCity-Jan2023.pdf (edcdn.com)

enable us to move away from fossil fuels faster. A strong onshore pipeline will also support the development of consistent Welsh supply chain and skills capacity and capability in preparation for offshore projects.

The deployment of renewable energy technologies has created thousands of jobs, generated millions of pounds in investment and contributed to communities. The UK's renewable energy industry now employs over 40,000 people and could employ over 100,000 direct jobs by 2030 people if targets are maintained. 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[5]. Floating offshore wind has the potential to deliver 3,200 jobs in Wales and South-West England for the first GW of deployment[6], with further forecasts predicting 29,000 floating offshore wind jobs across the UK by 2050[7]. As well as significant opportunities for supply chain companies across Wales and adding value from the sector locally, Wales can export energy and expertise globally from all technologies. As demonstrated, renewable energy development across the project lifecycle directly employs a significant number of workers. To maximise the economic benefits to Wales, ensuring our ports and supply chains are ready for the pipeline of projects coming through is critical to support thousands of indirect jobs and stimulate wider economic growth.

**Key challenges and enablers**

The recently published Energy Generation in Wales 2022 report[8] shows that Wales only added 43 MW of additional installed renewable electricity capacity in 2022, with the proportion of electricity generated in Wales from renewables falling from 33% in 2020 to 27% in 2022. Therefore, it is crucial that barriers to renewable development including **consenting and planning delays, grid capacity, skills bottlenecks, and ports and supply chain readiness** are addressed to deliver projects successfully and to give developers confidence to continue to invest in Wales. Providing certainty for both onshore and offshore wind projects across Wales will be key for long-term and stable investment and a pipeline for current and future jobs in the sector for people in Wales.

**We want to see a clean, secure and lowest-cost energy system powered by renewable energy, and supported by a thriving domestic supply chain and workforce. We are calling on the Welsh Government in collaboration with the sector and key stakeholders to support the following measures to maximise the deployment of renewable energy projects and seize the economic opportunities that come with it.**

1. Set a **clear delivery plan** for reaching the 100% renewable energy target by 2035 and net zero by 2050 to provide certainty for investment.

2. Within devolved powers, focus on unlocking further **consenting and planning resource, providing defined timescales for delivery and strategic anticipatory skills investment** for critical occupations.

3. Provide **leadership and convening power** to demonstrate a strong signal that Wales is *the* place to come to invest in the green economy.

4. **Collaborate through an improved intergovernmental mechanism on key strategic matters** that are reserved to the UK Government.

Further details on the above key enablers are provided in the answers to the questions below. We would welcome the opportunity to engage with the Senedd committee on the outcomes of this inquiry.

[5] onshore_wind_prospectus_fina.pdf (ymaws.com)
[6] Benefits of Floating Offshore Wind to Wales and the South-West: Supply Chain Report – ORE (catapult.org.uk)
[7] Floating Offshore Wind Centre of Excellence | ORE Catapult
[8] Energy Generation in Wales: 2022 (gov.wales)

**Questions**

1. **Within its devolved powers, what should be the Welsh Government's key priorities to maximise the potential economic opportunities from green economy sectors? To what extent does its current approach reflect these?**

In order to deliver on the opportunities set out above, there are several key priorities that the Welsh Government should focus on to provide certainty in the process and confidence in timescales.

1. Setting a **clear delivery plan** for reaching the 100% renewable energy target by 2035 and net zero by 2050. Producing a plan with stage-gates and defined timescales will provide certainty to the sector. Using devolved powers to build confidence and a strong policy environment for delivery – not just ambition – whilst working in partnership with the sector will further create market demand, leverage sustained private investment and provide pathways for investment in supply chains, skills and training. Setting ambitious technology specific minimum targets will maximise the economic, societal and environmental benefits of a diverse energy system across Wales. Targets will also provide clear commitment and demand signals to industry of long-term certainty to invest in the deployment of renewable energy projects across all technologies. The sector stands poised to respond to a positive signal from Welsh Government that there is a role for private investment in onshore wind development in Wales. Deep dive recommendation 10 identified the opportunity for an Onshore Wind Sector Deal and once the sector is confident of Welsh Government's commitment to support the deployment of onshore wind, we can work in partnership and begin to align the details of a Deal to the benefit of the people, economy and net zero ambitions of Wales.

2. Within devolved powers, the Welsh Government's focus should be on unlocking further **consenting and planning resource, providing defined timescales for delivery and coordinating strategic anticipatory skills investment** for critical occupations. These activities will enable accelerated delivery, sufficient engagement within the planning process, a consistent deployment of projects to better encourage supply chain investment and ensure that we have a skilled workforce ready in Wales to deliver these projects.

    a) Addressing the lack of consenting and planning resource and providing defined timescales

Consenting and planning delays pose significant risk to our renewable energy and net zero ambitions in Wales – which will inevitably impact related economic opportunities. With targets to reach 70% of electricity demand from renewables by 2030 and 100% by 2035, timely consenting and planning will be crucial.

We will need to more than double the best build rate of energy infrastructure we have achieved in the past fifty years and do that every year for the next eleven years. However, in 2023, less than 50% of Developments of National Significance (DNS) applications were determined on time. As well as consenting and permitting wind and other energy projects, associated infrastructure and supply chain upgrades and industrial decarbonisation projects will result in a significant amount of work for Natural Resources Wales (NRW) advisory teams, Welsh Government civil servants, Planning and Environment Decisions Wales (PEDW) and Local Planning Authorities (LPA). In addition to wind energy projects going through Town and Country Planning Act, DNS, marine licensing processes (and eventually the Infrastructure Consenting regime) and grid distribution schemes there will of course be statutory consultation requirements for larger projects in Welsh waters (>350MW), grid transmission and over 132Kv and cross-border projects going through UK NSIP regimes. The in-combination impacts of multiple projects on permitting timelines cannot be underestimated with a majority of levers sitting with Welsh Government. Decarbonising industry will be important over the coming decade (for example Pembrokeshire Net Zero Centre, TATA Electric Arc Furnace) – and we need renewable energy projects in place to power this future clean energy system – more in Wales equals more energy security and more economic opportunity for Wales.

At present, we have an under-resourced process at WG, NRW, PEDW and LPA level. We are already seeing a rise in submissions which will increase rapidly over the next 5 years. A focus is needed on pace as well as scale – to reach

the 2035 targets, we need to see accelerated decision making, more decisions being made, and more decisions being made efficiently. Pragmatic decisions are important in this energy transition. With leasing and initial ports funding processes now under way, consenting and planning is recognised as one of the most considerable risks for ports, developers and the supply chain. Ports upgrades delivered on time are crucial for maximising the benefits of offshore wind projects. There is a real risk that offshore projects could be delivered without maximising the benefits to Wales if the ports and supply chain are not ready in time.

The industry of course accepts the need for a robust process. There are many variables and uncertainties within renewable energy development however, and de-risking processes and providing certainty where possible is vital for delivery. **Defined timescales and sufficient resources will be absolutely crucial to address the scale of the challenge.**

b) Supporting anticipatory skills investment

To support strategic skills investment, the Welsh Government should develop a **workforce strategy and action plan** in collaboration with the renewable energy industry, training providers and education institutions to bring together and strategically coalesce the number of separate activities that are already taking place and identify gaps for future programmes. This should be delivered by cross-governmental working groups with dedicated skills resource for government, local authorities and statutory bodies. The accompanying actions needed to make sure the skills demand is met are outlined in question 4.

3. Provide **leadership and convening power** to demonstrate a strong signal that Wales is *the* place to come to invest in the green economy and make the case for Welsh projects on a UK level. Timescales are important for this sector and therefore in key areas, specific activity that provide strategic intervention need to be driven and championed. We have already seen this in the case of Welsh Government's early funding to de-risk ports' activities. We also need to see support in building the onshore wind supply chain in preparation for offshore projects – members feel that a Welsh industry doesn't currently exist as there hasn't been enough work to build a domestic industry with delivery of a consistent pipeline of projects. For example, Welsh firms and workers who worked on Vattenfall's Pen y Cymoedd onshore wind farm 5 years ago have had to seek work elsewhere. The impact of policy inaction is already being felt. One of our other members advised us that they run an apprenticeship programme and unfortunately, there were no apprentices taken on in Wales in 2023 and none planned for 2024. This is because of the demand for new renewables elsewhere in the UK, where they are building new projects. It's a similar story for other renewable energy developers. Wales is unfortunately being left behind. Furthermore, anticipatory investment in skills and apprenticeships and work to attract anchor companies to Wales that will enable Welsh SMEs to take an active role in the supply chain should be prioritised. For example, the Scottish Government have recently put forward grants to secure private sector investment in a new cable factory for the offshore wind sector which will leverage inward investment to Scotland[9]. The actions needed to encourage supply chain investment are outlined in question 3.

4. Collaborate through an **improved intergovernmental mechanism on key strategic matters** that are reserved to the UK Government to accelerate the build out of renewable energy projects in a sustainable way. A four nations task force with devolved governments and regions would better coordinate the key (reserved and interfacing) activities that are relevant to all nations such as building grid capacity, market support, ports and supply chain investment, and skills and workforce development.

[9] Growing Scotland's green economy - gov.scot (www.gov.scot)

2. **What are the key barriers to Wales making the most of opportunities in the green economy, and what steps should be taken to overcome these?**

**Key barriers for Wales to make the most of the green economy centre on lack of certainty and infrastructure.**

- A **lack of a detailed plan** with actions to ensure certainty and delivery. We welcome the ambition, and we now need an associated roadmap that combines the best of private, public and community energy. Detailed proposals are needed to tackle issues such as grid, aviation and peatland and marine habitat restoration/enhancement which have the power to halt many developments. We need detailed proposals to tackle some of these issues and we certainly need a roadmap for deployment of the energy and grid projects required to get us to net zero. However, one of the main things we need from the Welsh Government is stronger leadership and more co-ordination. The National Infrastructure Commission for Wales recommended in their recent report that a vision and action plan should be led and co-ordinated by a cross-Welsh Government / public sector / industry delivery group, chaired by the Minister to ensure coordination across Government and the public sector. They had received evidence that "various Welsh Government departments are acting in an uncoordinated way and that, ultimately, policy is unclear on issues such as soils, peat, biodiversity and protected areas"[10]. At present, we have multiple departments (many sitting in the same Climate Change directorate) that are pulling in opposite directions in terms of policy. There is a need to focus on what the Welsh Government wants to achieve and then ensure that civil servants are aligned on delivery. These projects are significant in size and they will give rise to some environmental impacts - this is expected of any development project – however, we won't get to net zero without these projects given the go ahead at scale and at pace. The planning process and Environmental Impact Assessments are set up to deal with these competing impacts in the public interest and to take advantage of the significant contribution these projects will make to offsetting carbon emissions, as well as the socio-economic benefits and biodiversity enhancements that will be delivered alongside these projects.

- As explained above**, planning and consenting delays**. Innovative ways to increase resource should be explored such as a central resource pot to support specialist topics and a re-allocation of roles to provide clear career pathways in the profession. At present, we have a number of policies and guidance that have different and often conflicting aims and objectives which can impact the delivery of renewable energy projects, for example, Future Wales and Planning Policy Wales Chapter 6 in the case of onshore wind and visual impact guidance in the case of offshore wind. Clear policy alignment across government would support more efficient and clearer decision making.

- Our current **insufficient grid network** in Wales is a significant barrier to maximising the benefits of the green economy. With electricity demand set to more than double[11], there is real urgency to develop the infrastructure and capitalise on the potential renewable energy opportunities across Wales and the Irish and Celtic Seas. Grid buildout needs to happen at pace in parallel with generation. We welcomed the work on Future Energy Grids for Wales and the Local Area Energy Plans however these should now align with the generation pipeline to maximise opportunities for Wales beyond meeting demand. Supporting the need for a North-South transmission route and futureproofing the Holistic Network Design Follow Up Exercise beyond the initial 4.5GW is essential to make sure Wales' grid needs are championed with key stakeholders such as Ofgem and National Grid. By working in collaboration with UK stakeholders, we need to ensure that the Electricity Networks Commissioner's recommendations are also delivered effectively in Wales through the Transmission Acceleration Action Plan.

- **Supply chain capability and port readiness.** Immediate investment is needed for ports to increase their capacity and capability to support fixed and floating offshore wind projects and the pipeline of work in the Irish and Celtic Seas in the years to come. The recently published Celtic Sea Blueprint[12] from The Crown Estate

[10] Preparing Wales for a Renewable Energy 2050 – report – The National Infrastructure Commission for Wales
[11] Future Energy Scenarios (FES) | ESO (nationalgrideso.com)
[12] The Crown Estate - Celtic Sea Blueprint

highlights the minimum requirements needed to deliver the first three projects in the Celtic Sea. It identified the gaps, such as ports readiness, availability of service vessels, and export cables to transport electricity to land. Addressing these gaps is important to deliver not only these wind farms but the future pipeline and global demand.

We are eagerly awaiting the results of the FLOWMIS scheme and also exploring future potential long-term support mechanisms through the RenewableUK led Industry and UK Government Port Task and Finish group. The Welsh Government should continue to support regional coordination and collaboration to maximise local supply chain opportunities and attract inward investment to grow the domestic supply chain capability using stepping-stone projects. The Welsh Government should also work with the UK Government to make sure that UK level initiatives such as Contracts for Difference reform, Sustainable Industry Rewards and strategic intervention through the Industrial Growth Plan delivers for the industry and supply chain in Wales.

- **Skills bottleneck and job transitions.** As noted in the answer to question 1 and expanded upon in question 4, a skills bottleneck will impact not only project delivery but also the prospects for Welsh jobs. It is important to note that in the move to a green and net zero economy a number of jobs will need to transition. Therefore, there is a real need to plan ahead to make anticipatory investment in skills development and structured transition programmes to not only protect jobs but maximise the economic opportunities for Wales, rather than bringing the majority of the workforce from elsewhere.

**3. What actions should the Welsh Government take to support development of Wales-based supply chains in green economy sectors?**

Across the world, it is recognised that there is an enormous need for new supply chain investment to deliver the increased wind, green hydrogen and other clean technology targets set out in recent years. There is now a global race to decarbonise, leading to significant increase in demand for renewable energy components. This demand poses a real risk of creating pan-national supply chain bottle necks which could affect Welsh projects. This issue simultaneously presents a risk and an immense opportunity for domestic supply chain development to meet market demand.

Given the UK's leadership in technologies such as fixed bottom and floating offshore wind, green hydrogen and tidal stream – coupled with its ambitious targets for future development – both Wales and the wider UK are well placed to attract manufacturing investment, in addition to seeing the growth of companies providing goods and expertise in operations and maintenance, consenting, and project development. For example, recent analysis has found that the UK supply chain for offshore wind alone has the potential to capture £92 billion of GVA by 2040[13]. However, there is considerable competition for this investment, and the domestic supply chain needs to remain internationally attractive in the long run. Notably, the USA and EU have announced a range of new fiscal measures and policies to incentivise private investment in 'green technology' manufacturing facilities to capitalise on this industrial opportunity.

On a UK level there are a number of schemes, policies and investments that will impact the Welsh market. For example, leasing expectations around social value from The Crown Estate, impacts of the move from Supply Chain Plans to the Sustainable Industry Rewards within the Contracts for Difference Scheme[14] from Allocation Round 7 onwards and the development of the Industrial Growth Plan (by RenewableUK, OWIC, The Crown Estate and Crown Estate Scotland). Depending on the outcome of the Floating Offshore Wind Manufacturing Investment Scheme (FLOWMIS) process, significant investment could be on its way to South Wales ports to prepare for the floating wind opportunity. Making sure UK level initiatives deliver across the UK is vital for investment into Wales.

[13] https://www.owic.org.uk/_files/ugd/1c0521_8481391e44014ceda91900ce301adb53.pdf.
[14] https://www.gov.uk/government/consultations/introducing-a-contracts-for-difference-cfd-sustainable-industry-reward

According to The Crown Estate's Celtic Sea Blueprint[15], there are a number of opportunities for South Wales and South-West England "from the assembly of the large floating platforms needed to house the turbines, building on the existing local high-skilled welding and concrete expertise and existing local suppliers. It highlighted opportunities for local ports across the region from the assembly, transport and storage of parts during the construction and life-cycle of the sites. The first three windfarms alone will need:

- More than 260 turbines spread across the three sites, each some 300 metres tall, around the same height as The Shard, on a floating platform about the size of a football pitch
- More than 1000 anchors to secure the floating turbines to the seabed, with at least 300km of mooring lines
- Nearly 900km of cables (enough to stretch four times the length of Wales / nearly enough to stretch from Lands End to John O Groats) to link up turbines and connect them to the electricity network".

In Wales, we have the potential to be at the forefront of driving development with key stone ports and a number of SMEs with transferable skills and experience. With a skilled manufacturing base to feed into this new industry, investment in the region now is critical to develop our port capabilities. We need to attract the right anchor companies to develop our own local supply chain capabilities and safeguard against bottlenecks in project delivery. Identifying our competitive advantages in Wales to prioritise first-mover investment will kick start this opportunity. Using data from OWIC's Supply Chain Capability Analysis, Industrial Growth Plan and the FLOW Task Force (of which we welcome Welsh Government's active participation), will support this identification and prioritisation. This work should be done with urgency so that the opportunity isn't lost as it did with turbines in the past.

There are a number of experienced companies in Wales such as Jones Bros working on onshore and offshore projects in Scotland and the North-East of England. Local companies need to see developments being consented years in advance to give them reassurance that there is a pipeline of projects to work on; otherwise they will seek work elsewhere in the UK or abroad. With certainty through a clear action plan for the delivery of the diverse onshore and offshore project pipeline in Wales, Welsh companies can build capacity and capability to meet the demand.

Furthermore, increasing the capacity of specialists with renewable energy supply chain technical expertise within the Welsh Government as they do in Scotland could help coordinate collaborative approaches and advise developers of the Welsh supply chain offer. The Welsh Government can also assist with seizing several priority opportunities to further Wales's role in this sector, by working with existing Welsh businesses to invest in carbon-neutral production facilities to secure material supply, including sufficient concrete supply and improving local market share for reinforcement steel.

Continued resourcing and capacity building of the clusters – the Offshore Energy Alliance in North Wales and the Celtic Sea Cluster - will support coordination and strategic investment. Further using the Growth Deals across Wales including in Mid Wales to drive investment and export opportunities from renewables will be vital for building supply chain confidence.

4. **What skills challenges exist in relation to transitioning to a green economy? What actions should be taken, and by whom, to ensure the skills are there to meet the growing demands of a green economy?**

We are at a critical juncture in Wales to prepare our future workforce for the opportunities that lie ahead through the development of wind energy projects – which will also support other key industrial decarbonisation and net zero developments. Renewable energy generation underpins the green economy story across Wales. Decarbonisation of electricity should enable the decarbonising of heat, industry and transport, and logically priority should be given to growing the resources and skills in renewable energy and the electricity grid in order to enable progress in these areas. To capitalise and maximise on these opportunities for jobs and economic growth for Wales,

[15] Supply chain for Celtic Sea floating wind farms could power 5,000 new jobs and a £1.4bn boost for the economy | The Crown Estate

urgent investment in skills development is needed to ensure Wales does not miss out on these opportunities. The Welsh Government has key convening powers and a capital investment role to play whilst working together with industry to bring forward strategic activities that coalesce activities with a shared vision and priorities for Net Zero skills in Wales. Unfortunately, recent cuts to the apprenticeship budget in Wales will mean that the much-needed increase in the scale and pace of apprenticeships will be difficult to meet.

To stimulate the green economy in Wales, by the 2030s, our vision is for the wind energy sector to be among the most attractive, equitable, diverse and inclusive sectors to work within in the Welsh and wider UK economy, with clear pathways to employment for new talent and those moving sectors during their careers. To **accelerate the delivery of renewable energy to meet targets,** we need a strong and stable workforce in Wales. According to the Offshore Wind Industry Council (OWIC)'s Offshore Wind Skills Intelligence Report, to meet the UK Government's British Energy Security Strategy 50GW target by 2030, we need to attract and retain around **100,000+ people in the offshore wind sector alone**. That represents an increase of some 70,000 on today's estimated workforce and highlights the overall challenge for the UK. However, it also demonstrates the opportunity for Wales to develop people with the skills to support the entire renewable energy sector as well as the challenge it will face in competition for labour within the UK itself as well as with other sectors. Recent estimates suggest that, between now and 2050, the floating wind sector **alone** could create 37,000 jobs[16] and many of these could be in Wales to support projects in the Celtic Sea. These offshore numbers are only a part of the requirement. To deliver on decarbonisation, Wales and the wider UK will need significantly more people to deliver renewable energy projects and maximise the opportunity and benefits for the Welsh economy.

In terms of the level of skills/employment challenge, the main concerns were prioritised as follows:

1. Shortage of specialist skills/labour
2. Attracting new talent
3. Encouraging young people into the industry
4. Losing existing talent
5. Retention of graduates

The main barriers identified by our members to address the skills needs in Wales are a lack of:

- A singular, solid delivery plan/pathway with coordination from a central point in Wales which interfaces with the wider UK requirement. There isn't enough cohesion and clear messaging on skills. There is currently fragmentation of the skills system i.e. piece-meal activity taking place, but a strategic approach is needed rather than on a project-by-project basis.
- Lacking an industrial strategy for Wales in terms of key competitive advantage areas.
- An associated lack of clarity over leasing and consenting timelines/timescales leads to uncertainty for projects. This affects supply chain and thus economic growth and skills as without an understanding of volume and pipeline it's difficult for businesses to understand the need to scale-up and invest.
- Knowledge, awareness and understanding of the sector and the opportunities it presents (including industry roles and what they entail). Lack of local knowledge and career guidance amongst both school-age students and those of working age.
- Funding and not enough resource in the public sector to 'own' this challenge.
- Local Infrastructure including housing, schools, provisions which will be vital to support a growing workforce in specific regions associated with these projects.
- Conflicting public policy objectives and Government priorities, inflexible existing skills structure.
- Buy in by some educators and providers.
- Urgency to move forward the skills agenda strategically. There is a significant risk that Wales will lose out on the opportunity if the workforce isn't ready.

[16] (ReEnergise-Summer2022-WV.pdf (catapult.org.uk))

- Sufficient number of courses in further and higher education across the country to train and provide the necessary qualifications.
- Experienced older workers. With the loss of these workers in the coming years, there is limited opportunities to pass on knowledge and skills to younger workers.
- Centre of excellence hub and skills centres. As skills are largely being looked at regionally, associated with specific projects, opportunities for centralised, highly effective and valuable centres of excellence are being overlooked.
- Approach which looks at onshore and offshore projects holistically to smooth pipeline.
- Approach to better able people to transition between sectors to match demands.

There is a risk of institutional 'bottlenecks' that could impact on the ability to deliver the energy transition, which includes a lack of relevant skills training and qualified workers to carry out the scale of work required. As the wider UK, Europe and the world turns increasingly towards clean energy development, it is essential for a just transition that the workforce in Wales is equipped with the skills to take up new employment opportunities. Without this, new career opportunities, helping to revitalise communities across Wales, will not be maximised. As it stands, there is no joined-up, strategic forward plan to tackle these issues, which could come to play an increasingly restrictive role in the rollout of new clean energy infrastructure and associated economic development opportunities.

The industry's overall focus is on supporting: priority occupations (outlined further in the response), cluster-based partnerships, a just transition and a diverse and inclusive sector. These cross-cutting themes should prioritise activities for attraction and recruitment, retention and upskilling, training provision and educational outreach.

To deliver on these, the Welsh Government should develop a **workforce strategy and action plan** in collaboration with the renewable energy industry, training providers and education institutions to bring together and strategically coalesce the number of separate activities that are already taking place and identify gaps for future programmes. This should be delivered by cross-governmental working groups with dedicated skills resource for government, local authorities and statutory bodies.

The action plan should include actions for government and industry to work collaboratively:

- To clearly **identify the range of skills needed and timeframe** for the requirement for industry to deliver the 2035 target. The timeline should indicate the number of jobs and roles required year on year to fulfil net zero ambitions which should then translate to a delivery plan for skills and training provision requirements from further and higher education and a corresponding personnel figure.

- Developing a **compelling offer for the workforce** in collaboration with other stakeholders through **attraction, recruitment, retention and upskilling**. This offer should include: providing clear information on career pathways and job profiles, ensuring that the right apprenticeship frameworks exist in Wales aligned to priority occupations, with the supporting quality training provision to deliver these. A step change in apprenticeship funding and attracting young people, local residents and people from other industries, through communications and career engagement tools. For example, national Net Zero opportunity campaigns and supporting skills passporting arrangements across the sector. We also need a clear financial offering to help people actively choose green training options over and above others, e.g. through payment of bursaries, grants and financial support[17]. According to the Local Government Association, 80% of the workforce needed for 2030 are currently in the labour market. It is not only industry and developers that require more skilled people. Parts of the public sector that are critical to help realise the renewable energy potential are vital i.e. well-resourced and skilled public bodies.

- A focused **effort to prioritise Critical Occupations** ensuring the industry tackles the skills and recruitment to the roles the sector needs first and most and engaging with and provide capital funding for those training

[17] https://www.edge.co.uk/documents/472/Skills_Shortages_Bulletin_13.pdf

providers who will help us to do so. Focus of funding should be on priority sectors, critical occupations and industry bottlenecks. The first of these will be planning and consenting roles.

- The industry will **work collaboratively for place-based solutions through cluster-based and local partnerships** where strategies and plans delivered at a national level work hand in glove with tailored, impactful local solutions.

- **Improve future sector data collection specific to Wales** – aim to establish a clear baseline of the state of jobs and skills across net zero sectors in Wales, gather survey data from across small and medium-sized businesses and data with regards to diversity and under-represented groups. Assessing teachers and careers advisers' understanding of industry opportunities and needs would also be beneficial[18].A recent report by the University of Strathclyde 'The Economic Impact of Scotland's Renewable Energy Sector'[19] demonstrates the importance for initial up-front investment to make the most of the opportunity and support presented by the renewable energy sector including significant GVA for other sectors and industries.

- **A communication campaign to promote green jobs, career pathways and routes into the sector**. This should work cohesively across the UK and devolved governments to promote sector opportunities, the differentiation and categorisation of roles (e.g., planning, technical and sector-specific, construction etc.), to communicate jobs in a new and exciting way (e.g. the role of planning in place-making and delivering infrastructure that the world will need by 2035 and beyond), case studies to encourage **diversity and inclusivity** within the sector and provide clear information for young people and those of working age to access information about careers. A collaborative framework for national, regional and local **educational outreach, support and engagement** would strategically inform pupils, students and parents about the opportunity the sector represents.

- **Onshore projects (wind, solar, battery storage) will be crucial stepping stones to develop the workforce for hydrogen and offshore wind at scale.** This represents a significant opportunity for sustained upskilling of personnel in Wales, with skills demand building steadily as a green runway to the needs of the offshore sector. These skills will be both demanded and transferable throughout the sector – making the need for renewable energy focussed skills more acute, particularly in the wider UK context. It is also important to note that other energy sectors – nuclear, decarbonisation of heavy industry will require similar skillsets – driving an exponential need for focussed delivery of skills in a timely fashion to meet 2035 targets for Net Zero.

Extensive detail on the actions needed to be taken and by who are outlined in our response to the Welsh Government's consultation on Net Zero Sector Skills.

5. **What will workers and employers need for a just transition to a Net Zero economy to be achieved, and what actions should the Welsh Government take to deliver the elements of this that lie within its devolved powers?**

As highlighted in the Welsh Government's Net Zero Sector Skills and Just Transition consultations. Also, according to the Green Jobs Taskforce report produced for the UK Government[20], "the potential economic opportunities of the transition to a low carbon economy are becoming clearer, with domestic and global markets in low carbon

[18] SWIC, Port of Milford Haven (2022) Milford Haven Waterway Energy Sector Skills Study
[19] The_Economic_Impact_of_Scotland_s_Renewable_Energy_Sector_original.pdf (scottishrenewables.com)
[20] Green Jobs Taskforce report - GOV.UK (www.gov.uk)

technologies estimated to be worth billions of pounds to the UK economy over the coming decades. All sectors of the UK will go through a transformation on the journey to net zero and this will impact the workers and communities they sustain". Governments, industry and the education sector across all stages of the green jobs life cycle need to build pathways into green careers for people from all backgrounds; and to ensure that workers and communities dependent on the high carbon economy are supported with the transition. A clear pipeline of projects will provide confidence in the volume of work available locally

There are a number of actions currently undertaken through the Scottish Onshore Sector Deal and the UK Offshore Wind Industry Council that the Welsh Government can learn from and work with industry to deliver. These include, for example, commitment from the sector to enhancing the current skills and training provision for apprenticeships, transition and vocational modules and passporting initiatives between heavy industry to the offshore renewables sector respectively.

6. **How will the Welsh Government need to work in partnership with others to realise the potential of the green economy and deliver a just transition? To what extent is the partnership working that is needed being undertaken?**

Collaboration is absolutely key for delivery. Developing a partnership between the public, private and community sectors with a mechanism for regular and sustained cooperation will not only improve delivery but also build social capital to garner trust between the government and the sector.

To ensure a green economy is realized that bring multiple economic, social and environmental benefits to Wales there needs to be a recognition of the returns currently being delivered to Wales plc through employment, contracts and environmental management (as well as community benefits). There is a need for a concerted effort to recognize that all parties' developments are needed to reach net zero – public, private and community projects - and this is not taking away from Wales in GDP or otherwise. By working together, there is an export market that is not extractive and that could bring multiple added benefits in economic terms but also in local opportunities for Welsh jobs and businesses sharing Welsh expertise and services globally.

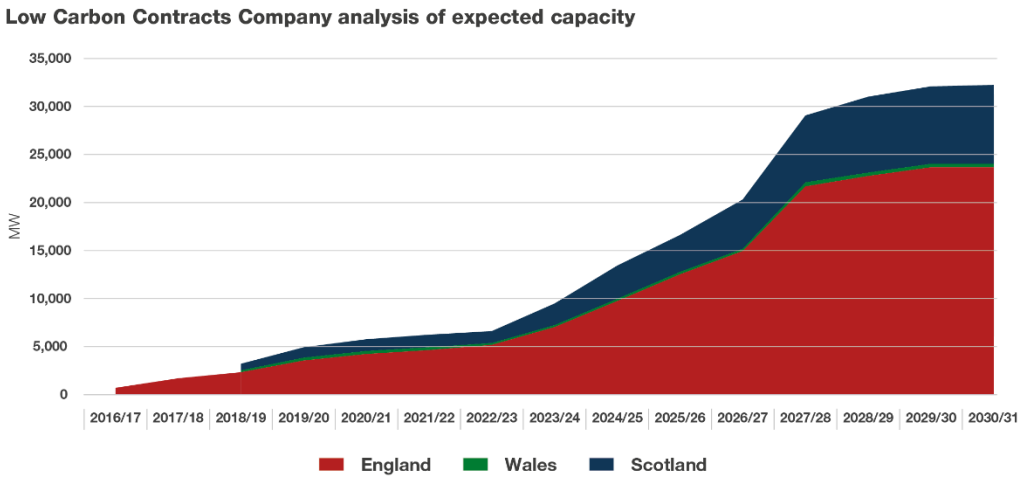
To realise the significant potential that the diverse mix of renewable energy projects can bring to Wales, there is a need for strong collaboration between the Welsh Government and key stakeholders including the UK Government, renewable energy developers, the supply chain, ports, Ofgem, National Grid and The Crown Estate to ensure there is a streamlined, facilitating environment for development, to create a certainty in pipeline of projects and increase investor confidence.

Legislative reforms are being explored for The Crown Estate's powers to borrow capital and invest to enable the delivery of leasing round projects. The Welsh Government should continue to work closely with The Crown Estate to identify strategic areas of investment that will maximise regeneration and economic growth for the region.

While the role of government will be crucial, it will not be able to deliver net zero on its own. A societally inclusive, economy-wide effort will be needed, with coordination of activity at all levels. The four nations task force proposed, including representation from governments and industry, should therefore be established to maintain momentum and coherence on key strategic issues such as support for delivering large-scale infrastructure – grids and ports – and supply chain investment.

7. **The Welsh Government says it will face considerable budgetary constraints in the short term. How should it prioritise investment to support development of the green economy over the shorter and longer-term? What innovative approaches to financing could be considered to maximise potential investment and benefits?**

- There is real need to recognise the potential represented by private investment. Creating a clear and unequivocable signal that makes Wales an attractive place to do renewable business will be vital to stimulate the green economy. Prioritising investment which leverages private sector funding will support the government's objectives in a range of areas.
- Increasing confidence and delivery by prioritising and re-allocating funding for consenting and planning resource and skills programmes will in turn maximise investment in areas such as biodiversity restoration and enhancement programmes and job creation.
- Allowing the private sector to collaborate with the aim of some developments in long-term shared ownership.
- Supporting Clean Growth Hubs, Growth Deals and Clusters as networks to share resources, develop infrastructure streamline resource and support local growth by coordinating and attracting investment.
- Recognising that for Wales to capitalise and maximise this green economic opportunity, the consideration of export prospects of this industry should go beyond providing power to the rest of the UK - and should focus on the associated potential industrial growth.
- The Contracts for Difference mechanism is a critical financial support framework available for renewable energy projects in the UK. A graph from the Low Carbon Contracts Company, who operate the CfD scheme, shows that historically very few Welsh projects have been awarded a CfD compared to England and Scotland. Given this backdrop and the latest AR5 result, it underscores the pressing need to facilitate the right investment environment in Wales to meet the step-change in deployment needed by 2035. This should be supported by the Welsh Government providing clear policy positions and strategic investment support decisions to attract significant inward investment to Wales.[21]




Expected capacity of the CFD portfolio up to 2030 (in MW), by country
Source: LCCC

[21] Future-Energy-Wales-The-Critical-Role-of-Welsh-Wind-Power.pdf (renewableuk-cymru.com)