

**Welsh Affairs Committee Inquiry  
Renewable Energy in Wales**

**Purpose: written submission of evidence in response to the Welsh Affairs Committee Inquiry**

**Introduction. Seawind Ocean Technology Ltd**

Seawind Ocean Technology (Seawind) is an Original Equipment Manufacturer (OEM) producing the next generation of floating wind turbines. The Seawind turbine is an innovative, disruptive technology that has the potential to change the future of offshore wind energy generation. The technology has already been proven at 1.5MW. The Seawind 6 (6.2 MW) turbine and Seawind 12 (12.2MW) turbine have achieved DNV GL Technology certification and will be fully commercial, ready for market entry in 2025.

The turbine is an integrated system, with fewer component parts, meaning optimal design is achieved between turbine and the floating foundation. The unique teetering hinge and active yaw control mechanisms, allow for greater efficiency in operation and maintenance, enabling a cost-effective solution that differentiates Seawind from existing turbine manufacturers. There is minimal environmental impact, low carbon footprint with no rare earth materials required in manufacturing.

Seawind technology develops resilient floating wind turbines that can endure strong wind and wave conditions; to harness electricity from deep ocean and cyclonic regions.

- Lower CAPEX
  - Less materials, for example 30% less steel
  - Less weight
  - Simplicity of system
- Lower OPEX
  - Efficient to operate & maintain
  - 50yr lifespan with only 1 major overhaul after 25yrs
- Reduction in wind farm developer overheads

***Renewable Energy Market: Floating Offshore Wind Market***

Seawind technology will operate within the Floating Offshore Wind Market (FLOW). This is a new and rapidly growing sector within Offshore Wind energy generation, using a renewable energy source with high potential. Markets and opportunities are emerging rapidly across the globe. Wind farms using floating foundations open up access to deep ocean waters in areas that yield high and more consistent, reliable wind speeds.

The predictions for size of the both the global and UK market for FLOW demonstrate that this has huge potential for growth. Figures are estimated at:

Global Market	UK Market	Target year
10GW	15GW	2030
70GW	50GW	2040
<i>Source: Carbon Trust Report 2020</i>	<i>ITP Energised Report 2020</i>	

There is great capacity and realistic potential to bring future FLOW projects to fruition in the Celtic sea. This will mean a shift in the growth of the market from the UK East coast and opens up significant development opportunities off the West Wales coast, bringing economic re-generation benefits not only to Wales but to the rest of the UK and Ireland.

Growth in the FLOW sector also offers a huge global opportunity to UK and Welsh Governments and the private sector. However, the development of the FLOW market needs targeted and driven support if OEM's, developers and supply chain partners are to realise their ambitions and meet the capacity needed to meet 2030 and 2050 generation targets outlined in the UK Government's Ten Point Plan.

### **How can the UK Government best support the deployment of renewable generators in Wales?**

The UK Government can support making clear decisions on where the focus and support for the future of the market lies in the UK. Will the UK focus be on CAPEX or OPEX?

The UK Government can provide this support by appointing a leading political representative to work with Welsh Government and champion the growth and development of Offshore Wind throughout the UK. This will accelerate the development of clear policy guidance, financial support and guarantees specifically to support investigation into the opportunities in the Celtic seas.

It has been publicly stated in UK Government's 10-point plan that the focus for future energy generation lies with Offshore Wind. As a new and rapidly developing market sector FLOW is an opportunity that is right for ambitious early adopters and global leaders in renewable energy generation.

To meet these targets, UK Government need to rapidly decide on whether the market development in the UK is to focus on CAPEX and / or OPEX. These areas have different support requirements and supply chain mechanisms.

As a technology developer, Seawind's key requirements to deliver CAPEX market growth are:

- Investment, support and guarantees in developing new technology
- Support and guidance to the developing supply chain who need guidance on how and where they can break into the market
- A visible pipeline of projects to develop internal business cases and understand business sustainability (Please note our recommendations for support required to The Crown Estates below)

We believe the key areas to focus on for technology developers such as ourselves are:

- Government and industry committing and delivering support to technology developers.

- Commitment to R&D innovation funding.
- Industrialisation support to enable scale of delivery. Guarantees to investment into both technology and facility development from both public and private investment.
- Access to academia, to enable the education sector to prepare and deliver skilled people
- Investment into skills transition and apprenticeship programmes
- Utilise advanced manufacturing skills, for example investing in AMRC Wales

Taking this action will bring huge sustainable benefits to Wales through development of local supply chain, direct and indirect employment opportunities, growth of expertise in a new and rapidly growing sector.

How could this be achieved:

#### Investment

- Developing a clear route for green technology OEM's to access investment in the UK and Wales. We would envision this as being similar in nature to existing European Investment Bank and Green Deal funds.
- Stimulate increased activity from venture capitalists.
- Strengthen the remit of the Welsh Development Bank to enable it to invest in projects outside of its existing remit.
- Stimulate increased activity from a range of investment organisations.

#### Supply Chain Policy

A clear timeline for review and implementation of improvements to increase commitment to delivery of local content from renewable generators.

#### Regional Generation

Provide continued investment to Welsh Government to support the re-generation of industrial sites and to the associated socioeconomic regeneration.

Supporting the acceleration and development of the Ports Strategy in Wales to enable re-generation, infrastructure development and investment required to suitable sites. Some sites have already been identified, for example: Port Talbot, Port of Milford Haven and Newport. These ports are suitable to develop assembly sites but require support and investment to develop successfully.

#### Contracts for Difference (CFD)

Review the commitment to a single auction in the fourth allocation round (AR4).

Ensure that the commitments to support floating offshore wind via the CFD process are delivered, with suitable auction rules and allocation criteria to bring forward a minimum of 1GW of floating offshore wind.

#### Development of a clear project pipeline for Offshore Wind

Support The Crown Estates (TCE) in assessing and identifying coastline sites for new development opportunities. Also, in identifying sites for projects at early commercial scale to allow for proper consideration of efficient seabed use, which means longer-term sites are not ruled out due to a scattering of smaller sites. A developer led approach might bring faster, but only short-term benefit and prevent the coordination of sites by TCE.

Consider the importance of up to 300MW sites. We recommend agreeing with TCE a range of sizes of site. This will support competition in the development sector, reduce the costs incurred through current competitions and allow ‘smaller’ sized developers and investors to enter into the market.

Early-stage projects coming through, helping to embed innovation, know-how and skills into Wales and other parts of the UK, would provide longer term benefit. Delivering value into the local economy; socioeconomic regeneration, direct and indirect permanent jobs, and long-term investment into local communities

In addition to making sites available to support delivery of projects prior to 2030 to achieve the target of 1GW of floating offshore wind, of greater importance to the success of FLOW in the UK will be supporting TCE. Bringing forward a leasing round (Round 5) focused on the west coast of England and Wales, opens up development areas for floating offshore wind schemes in early to mid 2030’s. Such schemes would help embed a medium to long term pipeline into the UK with developers, manufacturers, etc being able to plan against schemes in England and Wales as well as via the Scotwind process led by Crown Estate Scotland.

### **Summary of Recommendations**

- 1. Decide now on the future of the Offshore Wind Market development in the UK to enable progression.**
- 2. Provide clear policy support, investment and guarantees accelerating the development of new technology, supply chain and pipeline of projects**
- 3. Support TCE in opening long-term opportunities around the UK and specifically in the Celtic seas.**

### **How should the UK and Welsh Governments work together to support the development of renewable energy projects in Wales?**

The UK and Welsh Governments should nominate individuals to lead an early stage support programme to champion renewable energy projects in Wales and particularly in the floating offshore wind sector. This will focus on opening opportunities to support the development of the Celtic seas to support Wales in leading the growth of FLOW in the UK.

Providing access to investment in new companies and innovation, infrastructure and supply chain which will enable the development of the FLOW market sector.

Supporting an economic development framework that attracts and allows investment and develops a shared infrastructure. Developing focused activity in Wales will support socioeconomic regeneration and upskilling the workforce to meet the demands of a new market sector.

How this could be achieved:

- Development of existing infrastructure to support FLOW projects, in the following areas:
  - Port Talbot, Port of Milford Haven and Newport.
- Action needs to be taken by UK and Welsh Government to support the growth of suitable assembly facilities for FLOW projects in South Wales and South-West England.

- Support, guarantees and private/public co-funding in place will open the opportunity to accelerate the programme of investment into the port development sites, bringing forward design and planning for floating offshore wind investment.

#### Test & demonstration sites

Opening suitable test facilities to allow the scaling of the industry. Currently, the UK does not have access to suitable at sea testing facilities. We need at sea testing facilities so that devices, platforms, etc can be tested in real sea conditions to prove their viability, performance, etc to the market. Early scale demonstration of projects up to 300MW would allow the market to grow project size, rapidly and allow.

#### Grid connections

Investment and improvements in grid connections to ensure these are in place ahead of when they are required.

#### Providing a co-funding support mechanism for industrial development

Clear policy in place that champions FLOW market sector development in Wales; from R&D and academic support to industrialisation and regeneration  
Promotion, development and support to the existing supply chain.

#### Funding support mechanism for new industrial technology

UK and Welsh Government providing investment to and acting as guarantors to new technology innovators.

Welsh Government must have greater long-term consultation and input to UK Government policy. With UK Government taking into consideration the existing approach by Welsh Government which includes Circular Economy Funding and Green Growth Pledge.

#### Supply Chain Promotion & sector development

- Support to regional businesses to prepare for potential diversification into this market.
- Prepare supply chain (or enable the supply chain) to be prepared for multiple projects and pipeline of investment and work.

We would recommend focusing on the FLOW sector, who will need to rapidly learn how to scale production and assembly of multiple units and will require suitable construction and storage space at quayside & in dock locations.

Early-stage support programmes such as COWRIE, and the creation of a shared knowledge base assisted the growth of the UK's offshore wind sector and embedded a responsible and transparent culture in the sector. There would be merit in looking at what learning can be applied from this early phase for FLOW and what role UK and Welsh Government can play in supporting such learning.

#### Marine Licenses

Marine licenses are a priority for the FLOW industry, Welsh Government support to Natural Resources Wales in accelerating the process for allowing and achieving marine licenses quickly is a priority. We understand that for many reasons the Swansea Bay Tidal Lagoon Project (TLP) doesn't have a marine license after seven years which is a barrier to progression of the project.

Improving Government policy around awarding marine licenses will give confidence to potential investors and local businesses who have been scarred by the TLP marine license issue.

## Recommendations

- 1. Policy support to infrastructure development required to support the growth of the FLOW sector**
- 2. Working together to open up the remit of Welsh organisations to support the acceleration of growth in FLOW**
- 3. Setting up a support programme to assist technology developers and the supply chain to prepare for diversification and economic re-generation to support this market**

### **What mechanisms can ensure that subsidies for renewable generators are good value for money?**

Seawind is an OEM and as such, we are not in a position to provide commentary on the mechanisms for subsidies. However, Welsh Government could take a stronger role in promoting the requirement for Welsh content, especially in the CAPEX phase. Subsidies should be linked to local content usage by developers.

### **What opportunities are there for renewable generators in Wales of greater interconnection with other electricity markets?**

Improved grid connections from the areas where FLOW projects will be developed, will open increased contribution from floating offshore wind to the UK grid.

The priorities are to develop strong and secure connections and transmission and distribution upgrades to connect South Wales electricity generation to the rest of the UK electricity market. A high volume of renewables in one location means the requirement for a strong network connection to the grid. Work required to connections should not hold back the progression of the FLOW sector.

Investigating the requirements to re-purpose the use of Oil&Gas infrastructure to transport green hydrogen and look to future export opportunities in Ireland and Europe.

## Recommendations:

- 1. Understand and implement requirements to improve grid connections from areas where FLOW projects will be developed.**
- 2. Ensure long term investment grid connections and transmission and distribution to ensure reliability of supply.**
- 3. Develop policy to support the development and transportation of green hydrogen.**

### **How can the UK Government facilitate Welsh contributions to COP26?**

UK Government can open up the opportunity for Welsh Government to have a significant presence at COP26. Giving Welsh Government the opportunity to contribute to international debate and knowledge sharing surrounding successful development work currently taking place in Wales that has already become policy.

UK Government can align their contribution to COP26 with the ‘Wellbeing and Future Generations Act’ allowing Welsh Government contributions to share successes on behalf of the UK and Wales in making improvements that have a direct impact on improving climate change.

UK Government can work with the Minister for Environment for Wales to provide input into the review of UK’s NDC target 2020 ahead of COP26.

**Recommendation:**

- 1. Open an opportunity for Welsh Government to have a presence at COP26.**
- 2. Align with Welsh Government Policy, specifically the ‘Wellbeing and Future Generations Act’.**
- 3. Working with key stakeholders in Welsh Government to provide contributions to international knowledge sharing**

**What implications is COP26 expected to have for Wales?**

COP26 is an important opportunity for Wales to showcase what it is doing to tackle climate change and shift to a lower carbon society. It is a platform to profile the businesses that are committed to establishing a world-leading renewable industry in Wales therefore boosting investment opportunities and nurturing stakeholder engagement. It’s important that Wales is part of the conversation at COP26 if it is to achieve it’s potential.

The spotlight is on Wales. It cannot afford to lose the opportunity of securing investment, creating jobs and encouraging growth, which is why innovative companies like Seawind should be welcomed before the opportunity is lost and investment is made elsewhere.

**Has the COP26 Year of Climate Action had any significant implications for Wales?**

The Year of Climate Action has given Wales an opportunity to show that it is leading the way and is committed to being a leader in the low carbon revolution. Wales was at the forefront of the last industrial revolution and now has the opportunity to develop new industries that will create jobs and green power.

Wales Climate Week 2020 marked the start of the countdown for Wales to COP26. It has brought people together to discuss the key issues and reinforce commitment to tackling climate change. It will now help to facilitate the conversation at COP26 with Wales positioned as a key driver and instigator of change.

**What opportunities are there for renewable energy to aid Wales post-COVID-19 economic recovery?**

The right support and investment mean that the renewables sector, and in particular FLOW innovators such as Seawind can realise their global ambitions using a base in Wales. Supporting technology developers, will develop infrastructure, skills and provide socioeconomic recovery following the impact of the COVID pandemic.

Seawind’s investment into economic regeneration would mean moving Seawind’s 40 international patents to Wales and providing a minimum £100m investment into Welsh infrastructure over 5 years. This investment would cut across multiple sites already identified in Wales for:

- R&D
- Nacelle assembly hubs
- Port Development Sites

£18m for the Seawind 6 demonstration project would be directly invested into the into Welsh supply chain leading to the creation of >1000 sustainable direct and indirect jobs (white and blue collar). This would also provide support for businesses new to floating offshore wind and lead to £350m p/a invested into the Welsh supply chain from 2030 onwards.

## **Recommendations**

- 1. Providing guarantees for technology developers, will mean they bring their investment to Wales**
- 2. Supporting infrastructure for R&D, assembly and port development sites will bring investment into socioeconomic regeneration.**
- 3. Supporting technology developers for Floating Offshore Wind will mean, jobs and investment into the Welsh supply chain for a long term sustainable future industry.**

*February 2021*