



CELTIC SEA
CLUSTER

November 2022

BECOMING A WORLD LEADER IN FLOATING OFFSHORE WIND

THE CELTIC SEA REGIONAL STRATEGY FOR FLOATING OFFSHORE WIND

THE CELTIC SEA CLUSTER WAS FORMALLY ESTABLISHED ON 28 SEPTEMBER 2021

Its mission is to spearhead the creation of the Celtic Sea floating offshore wind market and maximise the benefits of this technology for all the regions involved.

The Cluster is led by its founding partners:



Ariennir yn Rhannol gan
Lywodraeth Cymru
Part Funded by
Welsh Government



**CORNWALL &
ISLES OF SCILLY**
LOCAL ENTERPRISE PARTNERSHIP



NERTHMORKELTEK
CELTICSEAPOW
PWERYMÖRCELTAIDD



YNNI MOROL CYMRU

CATAPULT
Offshore Renewable Energy





SPEARHEADING A SUSTAINABLE LONG TERM INDUSTRY

Our ambition is to establish our region as a world leader in floating offshore wind by 2030, laying the foundations for a new sustainable long term industry. This will help the UK to be at the forefront of the green industrial revolution as it accelerates its progress towards net zero emissions by 2050.

Floating offshore wind (FLOW) platforms can access stronger winds in deeper waters than conventional fixed offshore wind turbines.

The only British waters deep enough for large scale FLOW deployment are off Scotland and in the Celtic Sea (which is an area off the coast of Cornwall, West Wales and the south of Ireland). The Celtic Sea has some of the best wind resources in Europe.

Celtic Sea FLOW will create a completely new industry in the region, bringing new high value jobs and export opportunities, as well as strengthening the local economy. It will build on existing regional capabilities in offshore renewables and enable access to a fast-growing global market.

The Cluster's mission is to spearhead the creation of the Celtic Sea FLOW market. It will:

- galvanise the regional supply chains
- provide a single voice to engage with governments, regulators and project developers
- find innovative ways to accelerate deployment
- work with Celtic Sea users to protect the onshore and offshore environment

The International Energy Agency predicts that offshore wind generation will grow 15-fold over the next 20 years and will prove to be the next great energy revolution. Floating offshore wind will be the fastest growing sector.

It is critical for the region, and the UK as a whole, to keep pace with this huge change and to grasp the valuable opportunity that it offers.

THE BROAD STRATEGIC CONTEXT

Celtic Sea FLOW can help us address two key challenges:

1. Climate change and the energy crisis

Fossil fuels have now passed a 'tipping point'. BP has estimated that the world only has five decades' worth of oil left. High demand and high prices have now been exacerbated by the war in Ukraine.

In response to the energy crisis, the UK British Energy Security Strategy has doubled down on offshore wind energy. In April 2022, UK Government increased the target for offshore wind to 50 GW by 2030 of which 5 GW will be floating wind.

In September 2022, the UK Government said it wanted the "vast majority" of consented, planning and pre-lease stage offshore wind projects to start construction by the end of 2023. All remaining UK Round 3, Round 4, Extension, ScotWind, INTOG, Floating Wind Commercialisation Projects and Celtic Sea projects are to be "accelerated" under the UK Government's growth plan.

By acting now and establishing the Celtic Sea as a world leader in FLOW by 2030, the region can secure its position in this fast growing global marketplace for decades ahead.

2. Economic regeneration

The OECD estimates that the Covid-19 pandemic caused the global economy to contract by 4.2% in 2020. Of the G20 economies, the UK was one of the hardest hit, with a decline of -11.2%. As of October 2022, the UK is reported to be in recession. Small and medium sized businesses, which are the main drivers of new job creation, have been particularly badly affected. All governments are looking for strategic opportunities to generate economic growth as they seek to recover from the combined impact of the pandemic, inflation and the energy crisis. By acting now and establishing the Celtic Seas as a world leader in FLOW by 2030, the region can secure its position in this fast growing global marketplace for decades ahead.

The development of FLOW offers a golden opportunity for significant economic growth and also transformational economic diversification through the creation of a wholly new industrial sector.

...but Celtic Sea FLOW must be developed at pace

The market is moving with unusual speed, with international oil companies and mainstream investment houses taking early but substantial positions.

As FLOW technologies mature, the need for small pilot or demonstration arrays in the 25-40MW range is fading and project developers are looking for larger opportunities at the 100MW+ scale.

Internationally there are a number of European regions that are starting to position themselves as preferred locations for FLOW industrial deployment. These include developments in the Mediterranean, Scotland, Ireland, Spain, Portugal, USA and the Far East.

No regions are yet established as world leaders. The window of opportunity will not be open for long. Thus, to maximise the potential benefits from FLOW, it is essential that the Celtic Sea region moves as fast as possible to secure its place as a world-leading region for FLOW industrialisation.

OUR MISSION:

Our mission is to establish the Celtic Sea as a world-leading region for FLOW and maximise regional benefits:

- **Represent the Region** – we represent the Celtic Sea region (South Wales and the South West of England) in a trilateral relationship between governments, project developers and the region.
- **Maximise Regional Benefits** – we work to ensure the Celtic Sea region, our industry clusters and our people maximise economic development, GVA and job creation opportunities.
- **Guide Industrialisation** – we seek to understand and guide the development of the Celtic Sea FLOW ecosystem in a way that meets the needs of project developers and maximises regional job and contract opportunities.

OUR KEY AIMS:

- To position our region for the early build-out of large-scale FLOW projects from 2025 onwards, thus enabling the delivery of 3GW in build by 2030.
- To attract world leading project developers to invest in Celtic Sea projects by offering a unique combination of competitive advantages and support in comparison to rival locations worldwide.
- To develop a world class FLOW skills base and supply chain in the region.
- To lead on research and innovation, tackling the key technological challenges faced by FLOW development.
- To establish a knowledge hub and a model for high quality sustainable collaboration which will be recognised as an exemplar around the world.

All this will support the UK's strategic goal of establishing itself as a leading FLOW nation on the world stage.

OUR FIVE STRATEGIC ACTIONS

1. Provide Leadership to the Region

Until now, offshore wind policy has largely been formed in discussions between UK Government and the offshore wind industry. We believe there is a need for a strong regional voice to ensure that policy supports regional needs as well as the needs of the region and the aspirations of UK and Welsh Governments.

This is vital as the number of organisations with an interest in FLOW is enormous. It includes UK and Welsh Government departments, Local Enterprise Partnerships, more than 20 local councils and regional universities. In addition, there is a multitude of offshore renewable energy companies, as well as key infrastructure and supply chain players.

Through providing overarching strategic leadership, the Celtic Sea Cluster must achieve cooperation and coordination between all stakeholders. It will work to maximise the economic benefits of FLOW to the region, for the region, rather than any particular commercial party.

2. Streamline the Market Creation Process

We aspire to halve the current offshore wind development cycle from 8-10 years to 4 years,

This will be achieved through the combination of the following pioneering initiatives:

Zonal Planning – a better integrated offshore development process to achieve reduced development time; reduced project developer risk; reduced project cost of capital and Levelised Cost of Energy; and reduced impact on the marine environment.

Lease & Subsidy Regimes – innovative integration of the lease and subsidy regimes will be used to front-load regional investment into the Celtic Sea Cluster and help increase regional work capture, GVA and job creation.

This revolutionary new approach will streamline market development.

3. Accelerate Industrialisation

We need to guide the development of regional infrastructure, so it can meet the needs of bigger projects as they arrive from the mid-2020s onwards. We will accelerate industrialisation through:

Regional Ecosystem Planning – we are using regional ecosystem modelling to build understanding of industry needs, with a particular focus on long-lead items.

Infrastructure Investment – we are investing in the regional infrastructure, the vital components of which are the ports and the grid:

Ports – we have established a Ports Task and Finish Group, which acknowledges that there is no single-port solution for the Celtic Sea, multi-port coordination is essential.

Grid – the Welsh Government and Pembrokeshire Demonstration Zone project are assessing how the grid might be extended offshore, to reduce risk for project developers.

This radical new approach to industry planning and infrastructure development will be a game-changer, rapidly accelerating industrialisation of FLOW.



4. Grow Sustainable Regional Industries

We will help key regional businesses grow and develop so that they have the capacity and capability to support the fast-growing industry.

Cluster Capability – local businesses will need the full range of capabilities to service a growing project pipeline. We will be using the Cornwall FLOW Simulator, together with Cornwall FLOW Accelerator workshops to provide a basis for a systems approach. Net Zero Industry Wales and the South Wales industrial cluster members will act as a focal point for Welsh activity in this area.

Cluster Capacity – local businesses will also need to scale up capacity. We are undertaking detailed regional industry capacity analysis, and introducing initiatives such as the Offshore Renewable Energy Catapult's Fit4FLOW training and accreditation package to the Celtic Sea region.

There are several FLOW clusters across the Celtic Sea region:

- **Cornwall** – a well-established offshore renewables cluster with significant FLOW experience.
- **Pembrokeshire** – Britain's leading energy port with a growing offshore renewables cluster.
- **South Wales** – a well-organised industrial Cluster with substantial onshore capacity.
- **Great South West** – a broad marine-maritime cluster with wide-ranging capabilities.

The focus will be on supporting private sector cluster development. This will be done through a range of approaches, including capability and capacity reviews, collaborative networking and integrated support.

By building the capacity and capability of its vibrant clusters, the region will maximise the regional economic potential of FLOW.

5. Integrate Regional Business Support

We will make sure that support activities align with the strategic aims of the Celtic Sea Cluster.

- **Research & Development** – ensuring that the applied FLOW research undertaken within the regional universities and research organisations is aligned to the overarching strategy.
- **Enabling infrastructure** – ensuring that strategic intervention to enable a high proportion of FLOW components to be assembled, deployed and maintained from within the region is identified.
- **Workforce** – ensuring that the skills and training elements of the regional education institutions are optimised to develop and expand the regional workforce needed at a pace that matches the growing project pipeline and thus maximises local capture of the regionally created jobs.
- **Business Support** – ensuring that regional business support activities focus on key SMEs and larger companies that have the capability and expertise to move into the FLOW sector.
- **Investment and Exports** – ensuring initially that the inward investment attracted is focused on key cluster needs and then that the skills, products, and services developed during the sector's growth can be packaged in a way that improves the UK's capture of the international offshore wind market.

This integration and alignment of business support will boost development of the regional FLOW industry.

OUR FLAGSHIP RESEARCH PROJECTS

Our two RD&I projects are a catalyst for FLOW industry development, driving innovation and boosting growth.

Cornwall FLOW Accelerator

– this £6.0M ERDF project has two key focuses:

- **Zonal Planning** – offshore works to advance the zonal planning concept
- **Cornwall FLOW Simulator** – ecosystem simulations, to guide planning and investment

Pembroke Dock Marine

– this ERDF/SBCD project encompasses:

- **Marine Energy Engineering Centre of Excellence** – to drive supply chain excellence
- **Pembroke Port Development** – creating fabrication and launch space
- **Marine Energy Test Area** – to provide pre-consented sheltered harbour test area
- **Pembrokeshire Demonstration Zone** – to develop a Multi-Connection Offshore Substation

CONCLUSION

Through its combination of vision and innovative lines of action, the Celtic Sea Cluster will grasp the huge opportunities presented for the regional economy and the environment, establishing the region as a world leader in floating offshore wind.

Our spirit is founded on a can-do approach and a pioneering mindset, which will enable us to translate our ambitions into reality.

We are building a new sustainable industry for the region, establishing the foundations for global growth well into the future.



*Floating LIDAR system deployed
under the Cornwall FLOW
Accelerator programme to assess
wind profile of the Celtic Sea*



Celtic Sea Power
POS 50° 57.97'N
EMERGENCY:
VHF 16

FLD 1-Zone 1A
51°42'00"W
+35 547 800 080



Pembroke Port



**Tidal Harbour
Port Talbot**



**Clean Earth Energy
Avonmouth**



Falmouth Docks

“ If we can reap the full benefits of floating offshore wind in the Celtic Sea, the impact will be transformational. Not only would it have a profound effect on local economies and jobs, it would also give our region world-leading expertise in the green energy of the future. ”

**Vaughan Gething,
Welsh Government Economy Minister**

“ Floating offshore wind in the Celtic Sea has the potential to provide enough electricity to power 4 million homes. That would be a huge boost for the regional economy and a massive contribution toward the UK’s Net Zero targets. ”

**Mark Duddridge,
Chair, Cornwall and Isles of Scilly LEP**

“ The team driving the development of FLOW in the Celtic Sea is determined to create a world-leading new industry for the region. This is an ambitious mission but we are confident that our strategy will provide a platform for sustained economic growth well into the future. ”

**Steve Jermy,
CEO, Celtic Sea Power**

“ Floating offshore wind is one of the world’s fastest-growing renewable energy sectors, and ambitions for the Celtic Sea, coupled with ‘Scotwind’, will make the UK the biggest FLOW market. This is an incredibly exciting time. We are making history in the offshore renewables industry. ”

**Simon Cheeseman,
Sector Lead, Offshore Renewable Energy Catapult**

“ It is vital that we take full advantage of what is a once in a generation opportunity. The economic ripple effect of this new industry would be massive, and the way in which organisations across the region are working together to grasp this opportunity is really inspiring. ”

**Stephen Thompson,
Programme Manager, Marine Energy Wales**



www.CelticSeaCluster.com



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