Floating Offshore Wind Demonstrator(s) for Ireland

April 30TH, 2025

Executive Summary

The Marine Renewables Industry Association (MRIA) has settled on the following proposal for Government to consider with respect to catalysing the development of the Floating Offshore Wind (FLOW) sector in Ireland. The proposal was drawn up following detailed discussion and agreement with members of the MRIA interested in developing FLOW projects. It allows for the award of a Demonstrator(s)[1] to developments based on a competitive process between project proposals based in different locations for different purposes.

The proposal outlines the key steps towards establishing a FLOW demonstration(s) – a 'Demonstrator' – project(s) in Ireland:

- Complete a National Designated Maritime Area Plan (NDMAP) which identifies a number of suitable sites for FLOW development.
- Award FLOW sites to developers via a competitive MAC process – in the first instance, these sites would be intended for a FLOW Demonstrator project only, but with the later *possibility* of development to commercial scale
- Assign a 'pot' for the Demonstrator within the ORESS auction system which could be capped by capacity (industry envisages 200MW capacity as the minimum requirement to attract investment) or cost (or both) to award to the best value project.
- Sites not chosen for the FLOW demonstrator should be allowed to proceed through the planning process and to compete in appropriate ORESS rounds subsequently or to achieve routes-to-market via means other than ORESS auctions.

1. Introduction

This paper sets out a proposal by a MRIA working group set up to examine policy options for an Irish Floating Offshore Wind Demonstrator(s) project. Industry wishes to work with policymakers to optimise outcomes for the FLOW Demonstrator(s) and have come together

[1] The reference to 'Demonstrator**(s)**' reflects the wish of MRIA to see, ideally, a number of demonstration projects. It speaks to the remarks by Minister O'Brien (while attending the opening of the Celtic Interconnector) that he wished to see inter alia at least two FLOW demonstration projects in the development system by 2027.

to present a single view on how this can be done. The group includes all companies with an interest in the Demonstrator(s) specifically, and FLOW in Ireland more broadly.
It is important to emphasise that a FLOW demonstrator(s) should be seen as a first step towards a commercial-scale Irish floating offshore wind industry.

2. Alignment with Government Policy

The progress of FLOW, the important role it will play in future Irish ORE targets and ambitions are all recognised in Government policy including: the *Future Framework* Action 3*:* (SET A GOAL TO INVESTIGATE THE FEASIBILITY OF A FLOATING OFFSHORE WIND DEMONSTRATOR SITE INCLUDING OPTIMAL CAPACITY (Q3 2024)); the *Future* Framework (ACTION 8: …. SET AMBITIONS FOR FLOW AND UNDERTOOK TO EXAMINE THE POTENTIAL FOR ACCELERATING THE DEVELOPMENT OF A WEST COAST DMAP AND EXAMINE THE COST AND VIABILITY OF INITIATING FLOW PROJECTS IN THIS DMAP (Q4 2024)); and the Programme for Government (WORK WITH PORTS TO SUPPORT INVESTMENTS TO FACILITATE OFFSHORE RENEWABLE ENERGY INCLUDING CONSTRUCTING, MAINTAINING AND SERVICING RENEWABLE INFRASTRUCTURE WITH A REGIONALLY BALANCED APPROACH,…. AND PROGRESS THE RECOMMENDATIONS OF THE SHANNON ESTUARY ECONOMIC TASKFORCE).

The targets set by Government (20GW by 2040, 37GW by 2050 with an ambition of possibly 50GW by 2050) all involve significant FLOW investments. It is noteworthy that, according to the *ORE Technology Roadmap* (SEAI), at least 1GW of FLOW is envisaged by 2040 in the lowest-ORE scenario (*Scenario 1, Decarbonising Through Offshore Wind*).

3. Why does Ireland need a FLOW Demonstrator(s)?

There are three key arguments for FLOW Demonstrator(s) in Ireland:

a. *Develop FLOW skills, learnings and experience and build confidence among policy makers and investors.* It is clear that FLOW will be needed to meet Ireland's decarbonisation and ORE deployment targets to 2040 (20GW) and 2050 (37GW) but we must take appropriate steps towards this now. The Demonstrator project(s) will be a first step towards understanding policy and investment requirements. It will support learnings across the industry and Government systems and will build confidence with relevant policy makers and investors.

b. *Prompt learnings and experiences about infrastructure and supply chain needs to support FLOW and capture economic benefits*. With the right planning, commercial-scale FLOW can be a significant driver of the Irish economy providing high-skilled jobs and economic growth in the regions. To capture these benefits in a cost-effective manner, capacity must be developed by key supply chain actors such as ports and OEMs. FLOW at scale will need major ports investment and a Demonstrator(s) would be invaluable in guiding such development.

c. *Show that Ireland is 'open for business' with regard to FLOW*. The international ORE industry indicates a future focus on FLOW as Bottom Fixed Wind sites are 'used up'. Given that over 80% of Irelands water depths are suited to FLOW, Ireland needs to demonstrate that it is willing, suited to and able to support FLOW and a Demonstrator(s) is the ideal way to start this process.

4. Current Status of FLOW

Pipeline

The global pipeline of floating offshore wind projects has seen significant growth recently. As the latest reports note, the pipeline has expanded, reflecting a 9% increase over the past year[2]. This includes projects at various stages of development:

- *Fully operational*: 245 MW across 15 projects in 7 countries.
- *Under construction*: 102 MW across 4 projects.
- *Consented or pre-construction*: 7.3 GW across 22 projects.
- *In the planning system*: 21.6 GW across 15 projects.
- *Early development or lease application:* 184 GW

Countries leading in floating wind developments include Norway, the UK, France, China, Portugal, and Japan[3]. What is apparent in these markets is that the test and demonstration phases are now being augmented by early commercial scale projects.

A total of 1.9GW of projects was awarded globally in 2024 and it is anticipated that this level will increase in 2025 e.g., the commercial FLOW round, managed by The Crown Estate, for the UK element of the Celtic Sea will advance this year.

Cost trajectory

The cost trend line is pointed downwards. For example, early Demonstrator projects Kincardine and Hywind Scotland were awarded 3.5 ROCs + wholesale price = ~£300/MWhr. More recently (2024), 400MW of the Scottish 'Green Volt' (560MW in total) project was awarded a CfD for circa £140/MWhr (2012 prices). Also in 2024, three 250MW FLOW projects were awarded contracts in France below €100/MWh, albeit with grid connection costs removed and strong indexation provisions.

The UK's ORE Catapult forecasts FLOW at £96/MWhr by 2033 and £70MWhr by 2050; SEAI's *ORE Technology Roadmap* envisages €c60MWhr by 2050. The overall point is that FLOW's 'strike' price will decline as deployments increase, 'learning curve' and economies of scale effects etc impact. This is in keeping with the experiences of terrestrial wind as well as Bottom Fixed ORE.

[2] Global floating wind project pipeline grows by 9% over last 12 months Renewable UK, October 2024
[3] Global Floating Offshore Wind Pipeline Grows to 266 GW OffshoreWINDbiz October 2024

Insurance
With the increase in project deployments comes increased confidence from investors and underwriters. Deployments to date are generating data and experience to insurers' standards, thus enabling normal actuarial decisions and practices to prevail. Ireland, as a 'second mover' in FLOW, will benefit from this work. Irish developers interested in developing a Demonstrator(s) (i.e., the members of the MRIA working group) are in regular touch with their insurers and are assured that a Demonstrator(s) can and will be insurable.

Metocean conditions
While there are concerns that Ireland may present challenging metocean conditions, again there is experience and confidence building in this space in other jurisdictions: there is 245MW of operational projects generating data today with this figure increasing to ~1GW by 2030.

Metocean conditions are a question of access periods. This drives cost, not survivability/feasibility, and market competition will ensure that only the most economical projects move forward.

5. Irish FLOW Demonstrator(s) proposal

Policy makers are working on the development of a National Designated Maritime Area Plan (NDMAP) which would, in summary, involve gathering and analysing all of the relevant data necessary for a DMAP for ORE for the entirety of Irish waters. Consequent on that exercise, areas could be identified by DECC for different technology types (e.g., Fixed; FLOW; Wave etc). It is envisaged that a multitude of sites could be identified suited to various technologies and these could be 'called off' for development by Government as, for example, electricity decarbonisation needs or private wire opportunities emerge.

MRIA is supportive of the NDMAP approach in principle but is concerned by the time it could take to complete this, possibly resulting in several years of inactivity in the industry and risk delaying investment and loss of key skills. Therefore, we advise that a clear plan is set out by DECC in 2025 as to how and when this process will be delivered – this is a matter of urgency to bolster investor confidence.

We also recommend that a more staggered approach is taken to releasing sites than has been the case in Scotland (see the Annex). The recent process in ScotWind - with a large amount of seabed lease awards in one 'go' - has actually led to a slowdown as planning and grid systems were overwhelmed. We would prefer to see a staggered approach, in line with the French approach, to allow projects to realistically move through the planning system and avoid seabed hoarding.

It is recommended that the process for selecting FLOW demonstration project(s) can be nested within the planned NDMAP approach using current policy tools and policy under development by DECC and MARA, as follows:

- Complete the National DMAP which identifies a number of suitable sites for FLOW development. Consider how options for multiple FLOW demonstrator locations can be accelerated within the National DMAP process.

- Options outlined in REDIII for Renewable Acceleration Areas could be utilised to identify these sites. Examples of good practice from elsewhere, namely the INTOG planning and leasing process developed in Scotland, should also be considered.

- Award FLOW sites to developers via a competitive MAC process. It is recommended that the relevant criteria should be consulted on by MARA in 2025.

- Allocate a FLOW pot within the award mechanism which could be capped by capacity or cost (or both). Run auction. Award the best value **project**. As well as price and deliverability, the award scheme should include non-price criteria which would incentivise locations with demonstrable ability to scale and industrialise, as well as routes to market.

Three key points, in conclusion:

1) The FLOW Demonstrator(s) is of interest to the developer community, but it is important to allow for the chosen project to scale at a future date. Therefore, commercial-scale MACs should be awarded. This will improve the investment case for developers and generate increased MAC payments for the State without additional risk or cost.

2) Sites not chosen for the FLOW demonstrator should be allowed to proceed through the planning process and to compete in subsequent ORESS rounds or achieve routes-to-market via means other than ORESS auctions[4]. This will generate the pipeline required to justify investment into the Irish supply chain and ports. It will also generate enough competition such that only the most economical projects are taken forward, ensuring value for money to the state and consumer. In addition, it will allow for attrition to be managed, thus allowing Ireland to meet targets more readily.

3) The FLOW Demonstrator(s) should not disrupt the existing SC-DMAP by repurposing it for FLOW.

[4] Should these projects be required to show a route to market by a certain date? To what extent should these projects (and, indeed, the Demonstrator(s) in regard to the potential extension of their site beyond 200MW) be required to pay MAC fees while their sites are dormant due to policy considerations? These matters require dialogue between industry and policymakers

Annex 1: International innovation: ScotWind, INTOG and Celtic Sea

In its search for a solution to location and other matters associated with a Demonstrator(s), the MRIA working group looked into ScotWind, INTOG and the Celtic Sea.

SCOTWIND LEASING ROUND

The 'ScotWind' leasing round was the first offshore wind leasing process led by Crown Estate *Scotland* (CSE). Launched in June 2020, it aimed to unlock Scotland's offshore wind potential, contribute to net-zero targets and support the growth of the domestic supply chain.

Structure and process
ScotWind invited developers to apply for seabed rights to develop offshore wind projects in Scottish waters. The process was competitive but structured to emphasize both financial commitment and the delivery of high-quality, responsible projects. CES leased seabed in the form of areas defined in the Scottish Government's Sectoral Marine Plan for Offshore Wind Energy. Option Agreements were offered to winning applicants which provided developers with exclusivity over specific seabed to explore, plan, and secure consent for offshore wind farms.

Developers submitted bids based on pre-defined criteria and a maximum price per square kilometre, with the most notable innovation being the introduction of a *price cap* on bids (£100,000 per km²). This approach aimed to avoid overly speculative bidding and maintain focus on project deliverability, rather than financial competition alone.

Assessment criteria
The process combined financial bids with qualitative assessments. Developers submitted a *Supply Chain Development Statement* (SCDS), outlining how their projects would support Scottish supply chains, skills development, and local content. Once a bid was chosen, the SCDS became binding commitments via the Option Agreements and penalties can be applied if those commitments are not met.

Leasing options
In total, Crown Estate Scotland accepted applications for projects within fifteen seabed areas that were determined by the Scottish government, much like the South Coast DMAP, covering both fixed-bottom and floating wind opportunities. Scotland's deeper waters made floating wind especially attractive, and the leasing round allowed developers to propose projects for either technology. Each successful bidder received an Option Agreement, granting them the right to develop a project, subject to environmental assessments, grid connection feasibility, and ultimately securing planning consent from Marine Scotland.

Outcomes to date
Announced in January 2022, the ScotWind round awarded 17 projects with a combined capacity of nearly 25 GW, far exceeding initial expectations.

Revenue and economic impact
Crown Estate Scotland raised around £700 million (fees etc) from the leasing process.

However, the long-term economic impact is expected to be far more significant, with tens of billions of pounds of investment flowing into Scotland's economy over the coming decades. The SCDS commitments are designed to ensure that developers deliver on their promises within their SCDSs.

Conclusion
The ScotWind leasing round was a carefully structured process balancing financial return, responsible development, and economic benefit. By capping bid prices and emphasizing supply chain commitments, it demonstrated a strategic approach to maximizing the long-term value of Scotland's offshore wind resources. The Scottish Marine Plan for offshore wind only accounted for 10 GW of projects and Crown Estate Scotland leased significantly more than this.

INTOG

The INTOG (Innovation and Targeted Oil & Gas) decarbonisation round was a unique offshore wind leasing process launched by Crown Estate Scotland in 2022. Unlike ScotWind, INTOG focused specifically on projects that could directly support the decarbonisation of oil and gas infrastructure, as well as encourage innovation in offshore wind technology. Following the results of ScotWind and the significant floating offshore wind capacity outlined, the Scottish Government sought to facilitate smaller and faster routes to innovation and demonstration projects to kick start the supply chain for the larger ScotWind projects to follow.

This leasing round was divided into two categories:

1. Targeted Oil & Gas (TOG) – Projects designed to provide renewable electricity directly to oil and gas platforms, helping reduce emissions from existing operations in the North Sea.
2. Innovation (IN) – Smaller-scale projects (up to 100 MW) aimed at testing new technologies, designs, or operating models, with a focus on accelerating floating wind and other emerging solutions.

Developers submitted applications for specific seabed locations (based on the Scottish Government's INTOG planning process and Initial Plan Framework, published in August 2021), with project proposals assessed based on technical feasibility, deliverability, innovation potential, environmental compatibility, and contributions to Scotland's net-zero goals. Unlike ScotWind, INTOG awarded winners based on the application criteria and seabed price. The seabed price was not capped and price accounted for a greater weighting in the evaluation process.

In March 2023, INTOG awarded 13 projects, totalling around 5.5 GW of capacity. Eight of these projects are specifically targeting oil and gas decarbonisation while all thirteen advance innovative offshore wind technology for future large-scale deployment.

CELTIC SEA FLOATING LEASING ROUND

The Celtic Sea floating leasing round, led by The Crown Estate, will mark a significant expansion of the UK's offshore wind capacity, focusing on floating wind technology in deeper waters off the coasts of Wales and south-west England. Scheduled to close this summer, the leasing round will offer seabed rights for up to 4.5 GW of floating offshore wind capacity in the second phase (the Celtic Sea Test & Demonstration Leasing opportunity was awarded by The Crown Estate in 2021), with future phases potentially adding up to 20 GW.

The process will involve a competitive tender, where developers submit bids for designated areas of seabed identified through extensive marine planning and environmental assessments. Key criteria will include technical capability, financial robustness, supply chain development plans, environmental responsibility, and alignment with regional economic growth.

A central focus will be on encouraging industrial growth, with requirements for developers to demonstrate how they will support UK and local supply chains, ports, and infrastructure. The Crown Estate is also prioritizing coexistence with other marine users and environmental stewardship.