



## Offshore Wind – Phase Two Consultation Response



Prepared on behalf of Shannon Foynes Port  
Company

9 March 2022

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Ireland

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## 1. INTRODUCTION

The Department of Environment, Climate and Communications (DECC) have published a consultation on Offshore Wind – Phase Two with a deadline of Wednesday 9<sup>th</sup> March 2022. The purpose of this consultation is to gather views on Phase Two of offshore wind deployment. The first phase of offshore wind in Ireland will be necessary but not sufficient to reach our 2030 5GW ambition. An additional phase is required comprised of projects which can deliver by 2030 and in advance of a plan led enduring regime post-2030.

ERM have been commissioned by Shannon Foynes Port Company (SFPC) to draft consultation response on behalf of SFPC, advocating the need for floating offshore wind to be considered as part of Phase Two designations, kick starting the industry in Ireland for the scaling up and industrialisation of floating offshore wind into the future. SFPC are the statutory authority of the Shannon Estuary and have outlined the strategic importance of SFPC as a hub for the industrialisation of floating offshore wind energy development in Ireland and in supporting the hydrogen economy as the main route to market for floating wind in the medium to long term. This response will therefore:

- Highlight SFPC support for ambitious floating wind targets and the benefits that will accrue to the region and Ireland Inc.
- Advocate for designation of floating offshore wind projects as part of Phase Two
- Advocate for floating wind to be included as part of the MAC process to support the deployment of floating wind pre-2030 and beyond
- Advocate for an alternative route to market / non grid offtake category for green hydrogen production through electrolysis from floating offshore wind as part of Phase Two pre-2030
- Advocate for the scaling up of floating offshore wind and the export of green hydrogen to Europe as a route to market

## 2. SHANNON FOYNES PORT COMPANY

### 2.1 Overview

SFPC is a Tier 1 designated port under national ports policy and the largest bulk handling port in Ireland. The port has been recognised as an EU Core Corridor Port (TEN-T)<sup>1</sup> for the Atlantic Corridor and the North Sea-Mediterranean Corridor. The port boasts the deepest natural deep-water port in Ireland and one of the deepest ports in Europe, with depths of up to 32m situated in the Shannon Estuary. The port has recently received €2.5million in funding through the EU funding instrument, Connecting Europe Facility (CEF) and have commenced work in relation planning and site investigation works for a deep-water terminal to support the development of wind farm deployment services at the port.

### 2.2 Opportunity and Ambition

SFPC's overarching vision is to develop the estuary and port facilities into the *Shannon Estuary Green Energy Hub* to support the industrialisation of floating offshore wind alongside of routes to market for green hydrogen and other alternative green fuels produced from the Atlantic resource. This vision includes:

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<sup>1</sup> [Trans-European Transport Network \(TEN-T\) \(europa.eu\)](https://european-council.europa.eu/media/en/press-communications/infographic/interim-report-tentative-2021-2026-ten-t-network-main-features)

- The development of an ORE marshalling facility built by 2027 / early 2028 and ready to deploy floating wind projects by 2028;
- An enterprise hub at SFPC for the colocation of the industry supply chain in the estuary;
- Free Port status designation to facilitate trade from non-EU companies from countries such as the UK through customs simplification; and
- An educational cluster to support an industry led R&D working group and a curriculum working group led by national and international educational institutions focused on developing the next generation of talent and skills for the sector within the estuary.

All stakeholders within the Shannon estuary are aligned to the ports vision and keen to see commencement of this vision throughout the 2020's.

Offshore wind has been tabled as a flagship technology for achieving Ireland's renewable energy target of 80% set out in the Climate Action Plan 2021<sup>2</sup>. There is already a strong pipeline of offshore wind energy projects at varying stages of development around Ireland's coastline including within the Atlantic. The recent enactment of the Maritime Area Planning (MAP) Act<sup>3</sup> has set a framework for a robust planning system for the development of offshore renewable energy and given further investor certainty in Ireland's marine industries.

Wind Europe have quantified 85GW of offshore wind for the Atlantic Ocean<sup>4</sup> (the majority of which will be using floating offshore wind energy technology) representing over €100 billion of floating wind investment to SFPC. Capturing a portion of this investment is critical to the future success of SFPC and the Shannon Estuary region. Central to this will be positioning SFPC as a strategic floating offshore wind marshalling port and supply chain hub for the Atlantic resource.

SFPC aims to support the production of alternative renewable fuels such as green hydrogen and green ammonia from floating offshore wind for local and national use and for export to Europe and further afield.

In 2020, the European Commission launched a hydrogen strategy which will be central to the decarbonisation of Europe and have set out in its Roadmap that:

- From 2020 to 2024, the EU is targeting production of 1 million tonnes of renewable hydrogen, and 6 GW of renewable hydrogen electrolyzers, to decarbonise existing hydrogen production along with Carbon Capture and Storage (CCS). The policy focus is set to establish a "liquid and well-functioning hydrogen market and on incentivising both supply and demand". Plans will also be developed for large wind and solar plants dedicated to renewable hydrogen production.
- From 2025 to 2030, hydrogen will become "an intrinsic part of an integrated energy system" with a target of 10 million tonnes of renewable hydrogen by 2030 and 40 GW of electrolyser capacity. Hydrogen will play a crucial role in balancing the electricity system by transforming electricity into hydrogen when renewable electricity is abundant. Local hydrogen clusters or "Hydrogen Valleys" will develop, initially relying on local production of hydrogen transported over short distances. The need for EU-wide logistical infrastructure will also emerge, with existing gas grids potentially repurposed for transporting hydrogen over long distances.
- By 2030, the EC will aim to establish an "open and competitive EU hydrogen market, with unhindered cross-border trade and efficient allocation of hydrogen supply among sectors".

As of this week and in light of Russia's invasion of Ukraine, The European Commission has announced joint European action through *REPowerEU* for more affordable, secure and sustainable energy and make

<sup>2</sup> [gov.ie - Climate Action Plan 2021 \(www.gov.ie\)](https://www.gov.ie/en/publications-and-statements/publication-climate-action-plan-2021/)

<sup>3</sup> [a5021.pdf \(oireachtas.ie\)](https://www.oireachtas.ie/en/publications-and-statements/publication-maritime-area-planning-act-2021/)

<sup>4</sup> [Our energy, our future | WindEurope](https://www.wind-europe.com/our-energy-our-future/)

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Europe independent from Russian fossil fuels<sup>5</sup> in advance of 2030. This accelerated action will see measures such as speeding up renewables permitting, decarbonising industry and importantly a hydrogen accelerator aimed at developing infrastructure, storage, facilities and ports and replacing demand for Russian gas with renewable hydrogen.

Considering the distinct competitive advantage of Ireland's Atlantic floating wind resource, Ireland has the potential to produce significant amounts of green hydrogen in support of Europe's plans. Now more than ever there is the case for Ireland to increase its floating offshore wind ambition and acceleration of a green hydrogen industry to support this European action. Ireland needs to act fast to ensure the potential is captured and SFPC believe supporting floating wind as part of the Phase Two designation process is critical to this.

The route to market is already there for green hydrogen and alternative fuels derived from floating offshore wind.

SFPC's plans for capitalising on route to market opportunities for floating offshore wind are aligned to Europe's plans and the port have defined 5 realistic routes to market for floating wind including green hydrogen and alternative fuels in the short to medium term if the right national and European supports are put in place:

#### 1. Irish domestic requirement

##### Electricity

According to EirGrid's SOEF, there is only 400MW of available transmission system capacity on the west coast for floating projects to connect to. However, the Tarbert island 600MW thermal generation power station is due to come offline in 2023 and the 900MW Moneypoint in 2025 (or 2028 at the latest). This indicates a further >1GW of accessible grid connection for floating offshore wind<sup>6</sup> pre-2030 and should be investigated further to maximise floating wind deployment. Furthermore, the decentralisation of datacentre deployment through the Atlantic Green Digital basin planned for the Shannon Estuary will increase local electricity demand significantly whilst alleviating pressure on the Greater Dublin Area.

##### Green hydrogen

In the short-term there are route to market opportunities for supplying the refuelling of hydrogen buses and other heavy-duty transport. Hydrogen fuel cell buses are already in operation in Dublin with the National Transport Authority (NTA) and Bus Éireann recently unveiled three of the new hydrogen-fuel-cell-electric double-deck buses which are already being used on commuter services in the Greater Dublin Area.

The decarbonisation of Ireland will require transforming the gas networks to facilitate the injection of green hydrogen produced from floating offshore. SFPC is well connected to the >14,000km of gas network pipeline spread across the country and also connected to the UK and EU. There are a number of projects demonstrating proof of concept for using existing infrastructure for this purpose. Ireland's gas network is one of the safest and most modern 'hydrogen-ready' gas networks in Europe with blends of up to 20% hydrogen currently acceptable within the existing gas network and used in existing appliances

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<sup>5</sup> [Joint European action for more affordable, secure energy \(europa.eu\)](https://europa.eu)

<sup>6</sup> Given the bathymetric conditions in the vicinity of these power plants it is assumed all projects being developed with the potential to connect here are floating

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with minimal disruption and upfront cost to customers. Pure 100% hydrogen can be facilitated in the Irish network with some modifications.

## 2. Green ammonia fertilisers

Green fertilisers and animal feeds derived from ammonia that has been produced using renewable hydrogen through electrolysis, are key to decarbonisation efforts nationally and at a European level. Ireland are currently importing most of the fertiliser requirements and the current conflict in Ukraine has highlighted a security of supply issue for these products in Ireland. Furthermore, with the floating wind resource that exists in the Atlantic there is an opportunity to scale up this sector for export from the port.

## 3. Sustainable aviation refuelling

Green hydrogen and electrofuel production will be central to decarbonisation of the aviation sector. Today's aircrafts are certified to fly with a maximum of 50% sustainable aviation fuel, of which electrofuel is an example, and the remainder with traditional aviation fuel. Shannon airport is well positioned close to the Atlantic floating wind resource and there are opportunities for the production of sustainable electrofuels deriving from green hydrogen in the years ahead and for Shannon airport to be a strategically placed international aviation refuelling depot.

## 4. Next generation maritime refuelling

SFPC are part of a pan EU green bunkering network alongside a number of other ports to help decarbonise the heavily emitting global maritime sector. SFPC are aiming to be strategically placed green fuel ship bunkering facility within the Atlantic. Global shipping giant Maersk has recently ordered 12 e-methanol powered (hydrogen derivative) container vessels which are due to be delivered and put into use in 2024 / 2025 indicating the direction of travel for the heavy shipping industry into the future.

## 5. Direct export to EU

The market pull for green hydrogen is growing rapidly and there are direct and existing export opportunities to other EU countries such as Germany, Belgium, the Netherlands and France. Germany only have the capacity to supply 10-20% of their domestic hydrogen demand with green hydrogen. Concerned with the impact carbon tax will have on grey hydrogen currently being used, Germany have shown recent interest in Ireland's Atlantic floating offshore wind resource as the supply for their growing green hydrogen demand. Bilateral agreements within an EU framework will be central to supporting export opportunities with the German-Irish chamber recently stating support for the export of Irish green hydrogen to Germany and the development of a hydrogen strategy for Ireland. Other countries such as Belgium are similarly showing interest in leveraging the green hydrogen production potential of the Atlantic also.

SFPC Vision 2041 Strategy<sup>7</sup> initially published in 2013 outlines the Port's future objectives for the medium to long-term acting as a masterplan for the port. The Port are now undergoing a revision of this masterplan with future demand drivers evolving such as the enabling of floating offshore wind in the Atlantic and facilitating the production of alternative fuels such as green hydrogen and ammonia.

Most recently, the Tánaiste and Minister for Enterprise, Trade and Employment, Leo Varadkar has published government approved terms of reference for a Shannon Estuary Task Force<sup>8</sup>. The group will support the government in setting out an economic vision for the estuary for the next 20-30 years. The

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<sup>7</sup> [Vision 2041 - Shannon Foynes Port | Bulk Cargo Handling \(sfpc.ie\)](#)

<sup>8</sup> [gov.ie - Tánaiste publishes details of new Shannon Estuary Economic Taskforce \(www.gov.ie\)](#)



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Taskforce will look at what makes the Shannon Estuary unique, setting out how it can make the most of its position, resources and strategic advantage with floating offshore wind and green hydrogen to the fore.

### 3. FLOATING OFFSHORE WIND

Floating offshore wind can add to the benefits of traditional fixed-bottom offshore wind by helping to make Ireland a world leader in producing and exporting renewable energy, fighting climate change and ensuring energy security. Floating technology is accelerating rapidly with cost reductions anticipated to follow a similar trajectory to other renewable technologies as deployment increases. There are a number of large-scale demonstration projects deployed across Europe such as Hywind, Wind Float Atlantic and Kincardine Offshore Wind Farm and forecasts from Wind Europe and The Carbon Trust anticipate between 7 and 13GW respectively being deployed globally by 2030. It is important that Ireland is competing within this picture.

Technology improvements have enabled the rapid maturing of the floating wind market allowing the sector to deploy in deeper waters. In fact, floating wind has quickly progressed from demonstration to early-stage commercial projects. It can no longer be dismissed as an emerging technology with jurisdictions such as UK, France and Norway pushing ahead with the design of leasing and tender rounds for early commercial scale projects.

The Programme for Government<sup>9</sup> has outlined taking advantage of the massive potential of offshore energy off the Atlantic coast promoting Ireland as a major contributor to European energy production with a target of at least 30GW of floating offshore wind.

Furthermore, it is envisioned that the benefits of floating will include encountering less challenge from coastal communities during the planning process especially with regard the elimination of visual impacts with turbines being sited further out to sea.

#### 3.1 Phase Two

The consultation document sets out the policy objective for Phase Two projects alongside a number of consultation questions aimed at defining a selection process for Phase Two projects whilst ensuring maximum competition. It is anticipated Phase Two will make up ~3GW of the at least 5GW target and must be deliverable pre-2030.

As part of question 11, the consultation asks should any special allowances for innovation technologies be included in the Phase Two process and what technologies should be provided special allowances. Innovation is critical if Ireland is to meet 80% of electricity sourced from renewables by 2030. Within Revolution, A vision for Irish floating wind energy<sup>10</sup>, Wind Energy Ireland has stated their position that floating wind projects can and should contribute to 2030 targets. SFPC are fully supportive of this position and believe the facilitation and deployment of floating wind this decade will pave the way for floating offshore wind at scale in the 2030's and the critical development of a supply chain for delivering floating wind.

It is clear the Phase Two 5GW target has been informed by EirGrid's Shaping our Electricity Future (SOEF) and constraints that exist with regard capacity for connecting offshore wind onto the transmission

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<sup>9</sup> [gov.ie](http://gov.ie) - Programme for Government: Our Shared Future ([www.gov.ie](http://www.gov.ie))

<sup>10</sup> <https://windenergyireland.com/images/files/revolution-final-report-july-2021-revised.pdf>

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system. However, it is important that the 5GW target is not considered a ceiling for 2030 targets. With >26GW of projects in development in Irish waters including 10GW of floating wind in our deeper waters<sup>11</sup> there are a number of floating projects in development that can deliver for 2030 through connecting to available grid capacity but also through alternative routes to market such as the production of hydrogen through electrolysis. Therefore, it is imperative the DECC broaden the scope of Phase Two beyond grid connected offshore wind.

Beyond electricity there are potential opportunities to support innovation for other routes to market such as power to gas. The 'route to market' for floating offshore wind will occur across a wider geographical and energy system context compared to other forms of wind energy in Ireland and will depend upon electrofuels for energy-dense applications as routes to market.

Question 11 also asks what allowances should be made and should capacity be reserved within the Maritime Area Consent (MAC) and ORESS processes. Innovation and deployment should be supported now and as part of these Phase Two designations. They have been the main drivers for cost reductions in more mature offshore wind jurisdictions such as the UK. This would see a requirement for capacity to be reserved in the MAC process to support floating offshore wind. Given the right enabling environment for consenting and supports, we could see a significant volume of floating offshore wind operational by 2030. SFPC believe that a certain capacity of at least 10GW should be reserved for a competitive floating preference category in the MAC process, allowing for a sufficient amount of attrition and enough competition for a ringfenced innovation pot within the design of ORESS2 and importantly for a separate but parallel route to market process / support scheme for hydrogen production.

The MAC auction process for Phase Two should be prioritised and MAC's processed as soon as MARA is established. Furthermore, MAC's should not be rescinded after 2030 for these floating projects if planning permission or a route to market has not been secured by this stage. There is currently a lack of clarity in the enduring regime and what lies beyond Phase Two and rescinding a MAC pre-2030 and prior to enduring regime will become a barrier to achieving the Phase Two objective. The Crown Estate particularly have been successful in working closely with industry and a wide range of stakeholders in promoting innovation with plans to unlock 4GW of floating wind in the Celtic Sea including early-commercial scale projects of ~300MW and full-commercial scale projects of up to 1GW with a phased approach to leasing design to support supply chain and infrastructure developments. The recent outcome of the ScotWind auction rounds, with 60% of successful projects utilising floating technology, have given a huge vote of confidence for this technology to deliver our future energy requirements.

Furthermore, these projects should not be limited by a 2030 cliff edge for their MAC's (as has been suggested within Question 5 of the consultation). Contrary to swift deployment and the discouragement of hoarding of the seabed as has been stated in the consultation question, a measure such as a cliff edge will only serve to create uncertainty in the market and increase risk. SFPC's position is that project MACs should be allowed to proceed with their development for a defined period of 10 years post award of MAC and in parallel to the development of a centralised enduring regime. This is the approach being taken within the recent ScotWind and AR4 and will provide certainty, incentivise delivery and ensure continued decarbonisation beyond 2030 whilst sustainably growing the sector and associated supply chain.

The designation of floating projects as Phase Two will be critical for SFPC's plans for marshalling and deployment facilities for floating wind at the port. Taking measures to support floating wind in Ireland now will enable the supply chain and the industrialisation of a whole new sector in the 2030s and beyond.

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<sup>11</sup> According to Global Renewables Infrastructure Projects (GRIP) Database – Market Overview. The Renewables Consulting Group, an ERM Company

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## 4. HYDROGEN AND ELECTROFUELS

The narrative around green hydrogen as a key pillar of decarbonisation has accelerated rapidly in the past couple of years. The EU's Energy System Integration Strategy<sup>12</sup> has highlighted the key role green hydrogen will play in a decarbonised energy system. The EU aims to create 80 GW of electrolyser capacity by 2030. It is predicted that European neighbours (who do not enjoy the same production resource that Ireland does) will be required to import significant amounts of hydrogen as Europe decarbonises out to 2050. Ireland has been included within the Western Europe priority corridor for hydrogen and electrolysers as part of the TEN-E regulation amendment recognising Ireland and the Atlantic's role in the EU's Net Zero plans. There is a significant opportunity for Ireland to contribute to wider EU demand for green hydrogen through scaling up the deployment of electrolysers, developing a hydrogen manufacturing and export economy and contributing to the interconnection of hydrogen within the region. SFPC is progressing with proof of concepts for hydrogen and ammonia production, storage and transport options at the port as part of its updated Vision 2041 document and positioning itself to service European demand for these fuels.

There is significant long term investment interest in Ireland's floating wind energy potential from Germany with plans to supply the decarbonisation of the large German industrial sector with Irish hydrogen. The recent establishment of the German-Irish Hydrogen Council aims to support opportunities in the sector with SFPC being put forward as an export hub for these hydrogen exports.

The narrative around green hydrogen as a key pillar of decarbonisation has accelerated rapidly in the past couple of years. The European Commission has put hydrogen center of the energy transition with the Hydrogen and Decarbonised Gas Package<sup>13</sup>. Furthermore, geopolitical instability in Europe with the recent invasion of Ukraine, and the risk posed to European energy security, has brought into sharp focus the need to move even faster on offshore wind and hydrogen production and ensure a resilient energy supply. Already, we are beginning to see an acceleration of measures towards a faster hydrogen implementation, focused on regulatory aspects and concrete funding options. For example, a new carbon contracts for difference tool is anticipated to play a decisive role in this transition. Ireland's competitive advantage of enormous floating wind resource in the Atlantic will be central to supporting Europe's energy requirements. Projects planned for export to other jurisdictions need to be on the agenda and as part of this pre-2030. Phase Two MAC's should be facilitated to ensure Irish floating wind projects are in a position to access innovative routes to market.

Ireland needs to act fast to ensure the hydrogen and alternative fuel export opportunity is realised and the prioritisation of a hydrogen strategy for Ireland being central to this.

## 5. CONCLUSION

There are enormous opportunities to transform the Shannon estuary and Ireland Inc from the development of floating offshore wind and green hydrogen production. Facilitating these technologies through a supportive policy environment this decade will pave the way for industrialisation of the sectors and lead to Ireland becoming a world leader beyond this.

SFPC are well positioned to support the growth of floating offshore wind and green hydrogen production and would recommend the following from DECC:

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<sup>12</sup> [EU strategy on energy system integration \(europa.eu\)](https://europa.eu/european-council/en/energy-strategy-on-energy-system-integration)

<sup>13</sup> [Hydrogen and decarbonised gas market package \(europa.eu\)](https://europa.eu/european-council/en/hydrogen-and-decarbonised-gas-market-package)

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- The 5GW should not be considered a ceiling for 2030 targets.
  - It is imperative the scope of Phase Two is broadened beyond grid connected offshore wind.
  - At least 10GW should be reserved for a competitive floating preference category in the MAC process.
  - The 2030 cliff edge for MAC's should be removed, with a 10-year MAC instead facilitating phased targets out from 2030.
  - The route to market is already there for green hydrogen and alternative fuels derived from floating offshore wind. These include - Irish domestic requirement; green ammonia fertilisers; sustainable aviation refuelling; next generation maritime refuelling; and direct export to EU.
  - Ireland needs to act fast to ensure the hydrogen and alternative fuel export opportunity is realised. The prioritisation of a hydrogen strategy for Ireland is central to this.
  - Taking measures to support floating wind in Ireland now will enable the supply chain and the industrialisation of a whole new sector in the 2030s and beyond.

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Argentina	The Netherlands
Australia	New Zealand
Belgium	Norway
Brazil	Panama
Canada	Peru
Chile	Poland
China	Portugal
Colombia	Puerto Rico
France	Romania
Germany	Russia
Ghana	Senegal
Guyana	Singapore
Hong Kong	South Africa
India	South Korea
Indonesia	Spain
Ireland	Sweden
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