WESTERN
DEVELOPMENT
COMMISSION

Submission to the Consultation on Developing a Hydrogen Strategy for Ireland

The Western Development Commission (WDC) is a statutory body with a remit to promote and encourage economic and social development in the Western Region (counties Donegal, Sligo, Leitrim, Mayo, Galway, Roscommon, and Clare). As well as having a remit for these seven counties, the WDC is also the coordinating agency for the Atlantic Economic Corridor Project, a key initiative of Ireland 2040, which seeks to grow the region from Donegal to Kerry significantly in the coming 20 years. The WDC operates under the aegis of the Department of Rural and Community Development.

The Irish Government have set a target for 80% renewable electricity in Ireland by 2030, including 8GW of onshore wind capacity and 5GW of offshore wind capacity. The 5GW target has recently been increased to 7G. The target of 8GW of onshore wind capacity by 2030 represents an almost doubling of existing wind capacity. Of the 7GW of offshore wind contained within the 2030 targets, 3GW is expected to be delivered on the east coast of Ireland. The balance will be delivered on the South coast in the Celtic Sea and the west coast. The Programme for Government 'Our Shared Future' aims to take advantage of the "at least 30 GW of offshore floating wind power" off the Atlantic coast by 2050.

Research conducted by the Western Development Commission has identified several areas where the West of Ireland can develop a global competitive advantage. These areas include MedTech, AI, and Renewable Energy. In the area of renewable energy, we believe an ambitious national Hydrogen strategy is key to making the biggest impact. For the first time in its history, the West of Ireland has a strategic natural resource that can transform the region with over 30GW of verified offshore energy resources. This resource can guarantee energy independence for Ireland, significantly reduce our carbon footprint, reshape communities through billions of euros from community benefit funds and boost jobs and exports. Indeed, the west coast has many strengths to allow it to seize this opportunity. However, without a viable route to market, the many projects already in planning will not have viability. Offshore wind resources exceed domestic demand. Therefore, export markets are required to exploit the available wind resource fully. An ambitious national hydrogen strategy required in tandem with offshore wind will deliver the required industrial capacity and capability and a route to market.

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Green Hydrogen is considered a key enabler to decarbonise the Irish economy for transport and as an alternative to natural gas for heat and power. While there have been questions about the economic viability and relative merits of Green Hydrogen, ammonia and other alternative fuels, technological advancements and geopolitical developments have brought us to a point where the broad adoption of green fuels is now inevitable.

The Green Hydrogen Industry is in its infancy however is expected to develop quickly over the coming years. With the potential renewable energy capacity off the west coast, green Hydrogen can use excess electricity produced offshore, easing pressure on the electricity grid. Green Hydrogen can:

- Decarbonise heavy energy industries, including commuter and other heavy energy transportation
- Provide employment opportunities through the development of green hydrogen manufacturing facilities and other ancillary services
- Help to alleviate curtailment on renewable energy due to insufficient grid infrastructure
- Lead to innovation through the need to adapt existing industry equipment to use green Hydrogen or through the development of novel products
- Develop new uses for green Hydrogen through research and development

Given the early stage of the industry, the possibilities are many. Ireland's immense floating offshore wind resource can place it at the forefront of this emerging industry, providing long-term, high-value employment, particularly in the West of Ireland, close to where the resource is strongest. Green Hydrogen is an attractive option, particularly for floating offshore wind, as there is a likelihood that the two industries may develop in tandem.

The WDC believes that the sustainable development of a Green Hydrogen industry is crucial, both for the economic prosperity of the West of Ireland and for Ireland to achieve net-zero carbon emissions by 2050 or before. The Western region's key location on Ireland's Atlantic coastline can offer the most favourable wind conditions in Europe and port facilities along the Shannon Estuary, Galway City, Rosaveel and Killybegs. Furthermore, there is over 1.5GW of existing grid connection infrastructure at the Moneypoint and Tarbert Power stations. Delivery of large energy projects from the region brings the potential to drive significant economic activity and will facilitate the scaling of activity in the sector across the entire coast.

The WDC argues that the West of Ireland should take the lead in the development of a hydrogen industry for the following reasons:

1. **The West of Ireland has unique wind resources.** Ireland has amongst the best wind energy resources globally. Wind projects onshore can avail of wind speeds of approx. 7 m/s, which is high in global terms. The wind speeds available off the Atlantic coastline are far higher at up to 11 m/s within Irish Territorial Waters (12 nautical mile limit) and up to 15 m/s in the Irish Exclusive Economic Zone. Wind power is a function of the cube of the wind speed, so even minor increases in wind speed can deliver significant increases in the energy yield. Wind speeds observed offshore in the Atlantic Region are significantly greater than the up to 10 m/s wind resource on the East coast of Ireland. Wind resource

quality further offshore means that the energy captured as a percentage of the turbine's capacity can increase from the Irish average of 28% onshore to 57% observed for a floating wind project in Scotland. The continental shelf provides the region with an additional advantage, as water depths off the west coast are favourable compared to the North Sea and Other locations.

2. **Green Hydrogen has the potential to balance economic development in Ireland.** An evolving Hydrogen industry can reverse decades of population decline in western counties. To put this in context, an analysis of the east coast opportunity has calculated the total employment from the development of 3.5GW of fixed offshore wind as 21,380 full-time equivalent jobs. However, because the supply chain is already well established, most of these are internationally based and in manufacturing (over 16000). Floating offshore wind is a burgeoning industry, and Ireland has the opportunity to get involved from the outset. The opportunity for the west coast is many multiples of the above figures. Focusing on west coast development would alleviate infrastructural problems around Dublin, including water supply, grid capacity and housing. For example, most data centres are in the Dublin region. A west coast Green Hydrogen industry would encourage new high-energy users closer to where renewable energy is being developed at scale.

   Furthermore, renewable energy and Green Hydrogen at the scale of what is possible with floating offshore wind technology off Ireland's west coast lends itself to creating complementary industries. The Regional Enterprise Plans for the Mid West, West and North West all have strategic objectives around developing Green Hydrogen and complementary industries. This means there is already buy-in from local stakeholders to develop this industry and a delivery mechanism for scoping projects across the West of Ireland.

3. **Green Hydrogen can address Grid Issues.** While a pipeline of projects to harness renewable energy resources exists, unfortunately, these projects are hamstrung by a lack of route to market. The Corrib gas pipeline, which is future-proofed to carry a high mix of Green Hydrogen, can be utilised to distribute synthetic fuels across the region. Further development of Green Hydrogen refining, storage and distribution can provide an alternative solution to the underinvestment in the electricity transmission grid west of the Shannon

4. **The necessary Port Infrastructure is already in progress.** The West of Ireland has infrastructure which can be rapidly redeployed to support the industry with appropriate funding. An investment of tens of millions will see returns in the order of billions. The West of Ireland has multiple ports prepared to work together to meet the demands of the new industry. Port of Galway, Rosaveel, Killybegs and Shannon Foynes have ambitious visions to help Ireland meet its climate targets. Furthermore, the existing grid capacity at Moneypoint, creates routes to market for early projects. Not unimportantly, there is broad agreement between the ports to work together. WDC is willing to coordinate this along the Atlantic Economic Corridor as we did with the Connected Hubs project.

5. **The West of Ireland already has the R&D capacity and skills**. The co-location of research and innovation hubs can at least contribute to, if not lead out, the development of novel industries related to the immense renewable energy Atlantic resource. The situation of ports in university towns, e.g. Galway, creates ideal locations for these accelerators. Projects such as the Port of Galway Hydrogen Green Valley, The MSLETB IMTEch project, and the established mechanical engineering and marine specialism embedded in the University of Galway, ATU, UL and research facilities such as the Marine Institute and FMCI ensure the region is already preparing for this opportunity.

The case for the West of Ireland taking a leading role in the development of the industry is strong. However, there has been some inertia, and Ireland is falling behind our neighbours such as Scotland and Denmark. Urgent progress is required if we are to seize this opportunity.

The WDC calls for the following actions to be included in a National Hydrogen Strategy:

- The government must make a policy commitment to treat climate change with the same level of cross-government support used to tackle the Great Financial Crisis, Covid 19 and Brexit.
- Establish a working group to examine how Ireland can capitalise on the Atlantic resource of at least 30GW of floating offshore wind and develop a green hydrogen industry
    - This group must include stakeholders from existing industries such as fisheries and tourism to ensure synergistic development
- Establish a Project Management Office (PMO) to support and accelerate key projects and coordinate different agencies along the west coast.
- Fast track planning for Offshore projects along with financial support for feasibility and environmental impact studies
    - Establish a supporting framework for the grant of planning permission for the construction of onshore substations and cable routes to ensure developers have clarity on the process to successful award.
- Support wind industry ramp-up activities by providing the necessary consenting, cabling, technical and financial support for Floating Offshore Wind developers at SmartBay and AMETS test sites.
- Stakeholder supports should be made available to facilitate dialogue from project initiation through to operation between project developers and relevant stakeholders.
- Undertake a mapping exercise for the ports on the west coast to identify each port's strengths in the context of floating offshore wind and identify what upgrades and investments are needed to capitalise on the Atlantic resource.
- Upgrading of grid capacity on the west coast to enable the generation of 30GW of renewable electricity from the Atlantic
    - The upgrade of the Moneypoint Power station to support the generation of green Hydrogen
    - A connection needs to be made available to offshore projects

- Build on the success of the Galway Hydrogen valley to develop a start-up accelerator for floating offshore wind development, green hydrogen projects, synthetic fuels and other renewable energy-related activities
- Provide additional funding for projects likely to create early demand for green Hydrogen. These include
    - Galway Hydrogen Valley
    - The Atlantic Green Digital Basin
    - The creation of a sustainable aviation ecosystem in Shannon
    - The Future Mobility Campus, Ireland
    - Atlantic Innovation Region Living Lab Projects
        - The inhabited Islands off the West Coast provide a perfect testbed for sustainable energy solutions such as Green Hydrogen
- Provide clear signals on post-2030 capacity, with grid upgrades along the Atlantic region and national strategies for alternative fuels, port development and supply chain.
- Enable new industry by identifying Hydrogen value chain opportunities for new industrial development in the Atlantic Region.
    - Identify early supply chain opportunities, including digital, clear signalling of 'Route to Market' and supports through industry cluster development (s).
- Develop new courses and centres targeted at the wind energy sector, emphasising FOW and Green Hydrogen skills and expertise not currently offered by Irish educational bodies.
- Raise awareness of offshore wind and Green Hydrogen industry in the Atlantic Region as a business and career opportunity to ensure a pipeline of students, apprentices and transferees from related industries to support the sector as it develops.

Key Sources

1. Creating an Atlantic Innovation Ecosystem available: https://westerndevelopment.ie/wp-content/uploads/2021/12/21.09.20-Atlantic-Innovation-Ecosystem.pdf
2. Renewable Energy: An Opportunity for a Just Transition to Net Zero on the Atlantic Coast available: https://westerndevelopment.ie/wp-content/uploads/2021/12/WDC-Renewable-Energy-An-Opportunity-for-a-Just-Transition-to-Net-Zero-on-the-Atlantic-Coast.pdf
3. Growth of Onshore to Offshore Wind – Atlantic Region Wind Energy & Supply-Chain Feasibility Study funded by Enterprise Ireland available *under review*