Cork Chamber
Advancing business together

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Wholesale Electricity and Gas Policy Division
Department of the Environment, Climate and Communications
29-31 Adelaide Road
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RE: Consultation on Developing a Hydrogen Strategy for Ireland

To whom it may concern,

Cork Chamber represents 1,200 members together employing 100,000 people throughout the city, metropolitan area and county. Our vision is to be a world-leading Chamber of Commerce, delivering on a progressive economic, social and sustainability agenda at the heart of a vibrant business community.

As such, we are determined to ensure that our over 200-year-old Chamber continues to create a positive legacy. Our direction is guided by our formal pledge to uphold the United Nations Sustainable Development Goals, five of which have been identified by the Chambers Ireland network.

The climate crisis and impacts on energy prices from the war in Ukraine have both highlighted and heightened the vulnerability of our energy systems. These impacts are already being felt in our business community and SMEs are particularly at risk as energy prices continue to rise. Our members are clear that government will need to support our business community as they face this deepening and significant challenge.

A holistic view of our energy systems to tackle the energy crisis is essential through harnessing our natural resources and reducing our dependence on imported fossil fuels. The production, transportation, storage, and end-use of green hydrogen are critical elements of providing a stable baseload of energy. We are firm in the belief that Cork is ideally placed to be designated as a hydrogen valley, boosting investor confidence and attracting foreign direct investment (FDI). Ensuring this happens requires clear timelines, targets and financial supports.

Cork Chamber welcome this opportunity to contribute to Ireland's National Hydrogen Strategy and we wish to offer a series of comments and advice in the context of the Cork business community.

Research & Development

Research topics & priorities

Cork's research institutes can play a key role in driving forward a cross-sectoral hydrogen research agenda. Ireland's National Hydrogen Strategy should promote research across a range of disciplines to ensure a holistic view covering the entire hydrogen value chain and its impacts on Irish communities.

While of number of areas require further research, Cork Chamber is particularly concerned with the role of green hydrogen in energy security, impacts on business, industry and food production, reducing costs throughout the supply chain, and the role and potential of designating Cork as a Hydrogen Valley.

Driving Innovation

Cork is home to internationally recognised research centres and third level institutes which are already involved in hydrogen research and can contribute further including the SFI Research Centre for Energy, Climate and Marine research (MaREI), Tyndall National Institute, University College Cork and Munster Technological University (MTU).

To drive forward innovation, this strategy should seek to leverage existing research networks to access funding on both National and European levels. The development of a Hydrogen Research and Innovation Network for Ireland would increase collaboration, avoid duplication of research and leverage the expertise already available.

Opportunities exist for Ireland to engage with European funding and support mechanisms already in place to further advance hydrogen research. The Clean Hydrogen Partnership for Europe is a prime European network which should be utilised to drive funding for innovation[1].

Hydrogen Demand End-uses for hydrogen in Ireland

Hydrogen can be used where electrification is not possible, to provide back-up for intermittent sources including wind and solar, and to store energy, thus improving Ireland and the EU's energy security. Green hydrogen can be used to decarbonise Irish industries that rely on fossil fuels and have significant energy demands, including transport, industrial heat, and electricity.

Transport

Heavy goods vehicles account for 15% of transport energy demand in Ireland today, but this is projected to rise to 30% by 2050[2]. Fuel cell electric vehicles (FCEV's) are the preferred low carbon solution, followed by hydrogen combustion, for decarbonising HGV's[3]. Dublin Bus and Translink have undertaken hydrogen fuel cell bus trials, and there is similar demand in Cork for public transport decarbonisation under Bus Connects Cork.

The Aviation industry presents further opportunities, representing 22% of Ireland's transport energy demand. Blends of up to 50% are allowed for certain renewable fuels, such as hydrogen-based fischer-tropsch fuel (FT) and hydrotreated vegetable oil (HVO)[4].

Industrial Heat

The generation of high-temperature heat for industrial-use represents 25% of Ireland's industrial energy demand[5]. Hydrogen is well suited for generating high temperatures and thus decarbonising these hard-to-abate sectors including, the cement industry, aluminium and distilleries.

The pharmaceutical sector is of particular importance to Cork as the region has become an international hub for pharmaceutical progress, accounting for 10% of overall large energy user demand or 3 TWh/annum[6]. The industry is dedicated to decarbonising processes and hydrogen offers an opportunity to transition away from fossil fuels.

Electricity

Hydrogen can be used to both replace natural gas in power generation and for onsite generation for data centres. Data centres require large amounts of energy. In the current energy crisis, they have been in the spotlight driving a need to adopt clean on-site flexible generation. This sector is beginning to examine on-site green hydrogen power generation as a solution to fulfil their energy needs.

Fertiliser feedstock

Hydrogen presents opportunities to increase food security and the sustainability of our food systems in Ireland by deploying it as a feedstock in fertiliser production. Today, Ireland is the 13th largest

[1] https://www.clean-hydrogen.europa.eu/index_en
[2] https://www.skillnetireland.ie/publication/the-role-of-green-hydrogen-in-irelands-energy-transition/
[3] https://www.sciencedirect.com/science/article/pii/S0360319922026404
[4] https://www.arc-iwe.com/sustainable-aviation-fuels/
[5] https://www.fch.europa.eu/sites/default/files/file_attach/Brochure%20FCH%20Ireland%20%28ID%209473093%29.pdf
[6] https://www.seai.ie/business-and-public-sector/large-business/lien/results/index.xml

importer of fertiliser in the world[7], importing 1.5 million tonnes annually[8]. Through the IDA and the use of our cooperative model, the production of green hydrogen can bring fertiliser production to Ireland, reducing our dependence on imports of nitrogen-based fertiliser and creating a stable demand for local use. Its deployment would also contribute to the decarbonisation of Irish agriculture.

Natural Gas Grid

Currently, there is neither demand nor a supply of green hydrogen in Ireland. It is essential that demand first be created to signal intent to the market by blending hydrogen with natural gas and injecting it into the gas network. A Gas Networks Ireland project, due to be published in Q4 2022, has demonstrated the feasibility of reusing and repurposing our existing gas network in its current state[9].

Sector Synergies

The establishment of a hydrogen valley in Cork can create synergies between industry clusters, agriculture and our ports to fully support hydrogen use. Costs can be reduced, and large demand centres created by sharing infrastructure, kickstarting economies of scale. These hydrogen valleys will stimulate economic growth, create employment and revenue in rural communities and act as a vehicle to attract FDI[10].

Hydrogen Supply

Cork and Ireland have huge renewable energy resources and can act as a de facto floating offshore wind and hydrogen hub for the Irish and Celtic Sea with over 75GW offshore wind potential. Current projects underway will generate 28GW electricity from that potential. Solar and onshore wind are also significant to our renewable energy potential. However, Ireland's constrained electricity grid was only able to accommodate 4.2GW of onshore wind in 2020. Increasing grid capacity is essential to ensuring we can accommodate the renewable energy needed to decarbonise.

The development of green hydrogen production facilities can create a route to market from our wind resources, allowing the country to capitalise on its economic potential while addressing climate and energy security concerns. Further, for solar and onshore wind farms without grid connection, the electricity generated could be converted to hydrogen and supply a hydrogen valley. Hydrogen production should work in parallel with electricity production.

Hydrogen Transportation and Storage

Hydrogen can be transported in a number of ways. Reducing the distance between the producer and end-user should remain a high priority when considering transport methods. The development of hydrogen valleys offers a unique opportunity to facilitate industry demands along with the production, storage, transportation and end-use of green hydrogen all within a particular region. Gas Networks Ireland is overseeing the repurposing of and development of new infrastructure for the transportation of hydrogen. Once hydrogen valleys are established throughout the country, they should be linked to ensure sufficient supply and demand for hydrogen. The ultimate goal is to connect Ireland with the EU and transport hydrogen via the Hydrogen Backbone. It is vital that this goal is prioritised to capture Ireland's full offshore wind recourses[11].

[7] https://www.mdpi.com/2071-1050/12/24/10560
[8] https://www.researchgate.net/publication/343693497_Development_of_Industry_Linking_Cluster_in_Vietna
[9] https://www.gasnetworks.ie/corporate/news/active-news-articles/irelands-decarbonisation/
[10] https://www.mdpi.com/2071-1050/12/24/10560
[11] https://ehb.eu/page/european-hydrogen-backbone-maps

Export Opportunity

With vast offshore wind resources, Ireland has great hydrogen export opportunities mainly via the EU Hydrogen Backbone (EHB). Under REPowerEU, the EHB initiative[12] seeks to accelerate the adoption of hydrogen for both energy security and renewable energy purposes, with the aim of supplying 10Mt of domestically produced hydrogen and 10Mt of hydrogen imports from outside the EU by 2030[13]. To facilitate our export potential, we advise that all recommendations outlined under REPowerEU and the Hydrogen Backbone be implemented.

Safety and Regulation

The Commission for Regulation of Utilities (CRU) would be the most appropriate organisation to oversee the safety and regulation of hydrogen in Ireland. It is essential that the CRU work with other organisations to ensure they are fully resourced and capable. GNI should be made responsible for the blending of hydrogen into our gas network.

Further, guarantee of origin certificates (GoO) will be required when injecting into the gas network. A single authority should be designated with the responsibility for monitoring and distributing GoO Certifications for hydrogen, such as the CRU or GNI.

Supports and targets

Any energy policy must provide clearly set out short, medium and long-term targets, timelines and financial support measures. Hydrogen development in Ireland requires a distinct set of financial support measures and clear targets.

Funding

To fund the deployment of hydrogen in Ireland, European funding mechanisms should be utilised. A number of EU funds are available including the EU Innovation fund, Clean Hydrogen Partnership and Horizon EU. Public financial institutions can also provide support critical to mitigating risks for first-time investors. The European Investment Bank (EIB) has provided significant investments for hydrogen projects with Frank Hydrogène (2020) and the Portuguese government (2021)[14] and is now focused on providing financial and technical support for large-scale projects[15].

National funding supports should be developed by IDA Ireland and Enterprise Ireland. For example, the IDA can attract FDI into the renewable energy sector along with hydrogen users such as fertiliser producers, while also supporting Irish-based multinationals in their efforts to decarbonise. Funding supports should be dedicated for early hydrogen production projects in Ireland. We recommend a one-stop-shop for finance be created to help reduce the bureaucratic burden of completing multiple grant requests.

Subsidy Schemes & Incentives

To further mobilise our hydrogen resources, hydrogen production must be adequately incentivised through the dedication of a portion of RESS or ORESS funding to hydrogen production offering long-term contracts in the form of a premium on top of the market price.

Market pull is important and hydrogen developers and end-users should be rewarded to further encourage up-take.

[12] https://ehb.eu/
[13] https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131
[14] https://www.eib.org/en/projects/sectors/energy/index.htm
[15] https://www.eib.org/en/press/news/eib-looking-to-invest-in-hydrogen-projects

Planning System

REPowerEU further calls for the establishment of "go to zones" to improve the planning system for renewable energy. It is essential that these recommendations are implemented to accelerate the growth of the market and incentivise industries to locate near hydrogen production facilities, thus reducing transportation emissions and the cost for end-use consumers[16].

A Holistic View of our Energy Systems & Pathways

To enable the full deployment of green hydrogen in Ireland, Government must first ensure a holistic view of our energy system is taken with the importance of hydrogen recognised to drive energy system integration. Government should view Ireland's hydrogen production potential as a pathway not only to meet domestic demand, but also to create economic return by exporting to the EU.

While it is positive that the Government of Ireland announced the ambition for the country to be Net Zero by 2050, a clear roadmap for this is required in parallel with this hydrogen strategy. This is critical to understanding the role of hydrogen and other decarbonising technologies in meeting this goal. Additionally, to ensure a full understanding of the role of ports in developing offshore wind and hydrogen, we recommend the development of a Ports and Infrastructure Strategy.

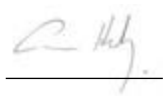
Energy Security

Hydrogen can offer Ireland a medium to long-term solution to energy security. Not only will it facilitate our transition away from fossil fuels, but it can also provide a stable baseload of energy which can be stored when the share of renewable energy on the grid exceeds demand and used as a back-up for intermittent sources such as wind and solar. Hydrogen can be stored and transported over long distances when liquified or converted to green ammonia. Hydrogen can then be stored in large reserves, securing Ireland's energy supply.

Conclusion

Hydrogen will have a significant role to play in Ireland's energy systems, energy security and decarbonisation pathways. With vast wind potential and industry clusters, Cork should be designated as a Hydrogen Valley and renewable energy hub to receive targeted investment, incentives, and tax breaks to build out supporting infrastructure and boost investor confidence. It is essential though that a holistic view of our energy systems be taken and the importance of hydrogen and gas in our future security is not overlooked. Cork Chamber thanks you for the opportunity to feed into this important strategy and asks that our comments and recommendations are fully considered.

Yours Sincerely,



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[16] https://www.sciencedirect.com/science/article/pii/S0360319921032444?casa_token=uccFiAA0Yk8AAAAA:irac