Mercury Renewables' Response to the DECC Consultation on Developing a Hydrogen Strategy for Ireland

2nd September 2022

Executive Summary

Mercury Renewables Ltd ("Mercury") welcomes the opportunity to contribute to the Department of Environment, Climate and Communications ("DECC") Public Consultation on the publication of a Hydrogen Strategy for Ireland (the "Consultation"). Mercury Renewables has been developing a 78MW hydrogen electrolyser project in the West of Ireland for nearly two years and expect to be submitting a planning application to An Bord Pleanála towards the end of 2022.

Our development activities have highlighted first-hand the challenges and opportunities ahead for Ireland in establishing an indigenous green hydrogen economy and a longer-term export market.

During the first half of 2021, we concluded a one-year long feasibility study in partnership with MaREI and Dublin City University. The findings of which concluded the production of green hydrogen in the West of Ireland, powered by heavily constrained and congested onshore wind, had the potential to replace diesel used by heavy duty vehicles ("HDVs") or heavy goods vehicles ("HGVs") in the logistics industry.

Nearly 65,000 tonnes of carbon emissions can be avoided annually by using the green hydrogen produced by our proposed Firlough Wind Farm and Green Hydrogen Project, in place of existing diesel HGVs.

Mercury is in a unique position to be able to act on our strong held belief that green hydrogen is the green energy molecule that will help achieve Ireland's ambitious emissions reduction and net-zero targets. Larger institutional developers of renewable energy projects are often unable to act as we have, due to a lack of policy underpinning a transition to a green hydrogen economy.

We have taken a bold step in moving forward with the development of what we hope will be one of Ireland's first large-scale Green Hydrogen projects, powered by a utility-scale onshore wind farm.

Over the past two years, we have been meeting with potential partners across the green hydrogen supply chain with a specific focus on the transportation sector. During these meetings we have established a consortium that covers the production

of green hydrogen (Mercury Renewables), transportation (Reynolds Logistics), refuelling (NanoSun) and offtake of green hydrogen as a fuel for powering HDVs and HGVs (Ballina Transport, Lundy Transport and others).

A consistent message that is communicated across the transport sector and other parts of the economy, is the need for Government support in the form of i) clear guidelines, targets and objectives for the use of Green Hydrogen in specific sectors of the economy; and ii) funding via grants, subsidies, tax incentives, etc to promote and facilitate first movers in the Green Hydrogen economy.

We believe Ireland's Green Hydrogen Strategy should:

1. Focus on specific sectors of the economy that are hard-to-abate and high polluting, in particular Transportation.
2. Establish meaningful targets, objectives and milestones to encourage production of green hydrogen for use in those sectors.
3. Commit funding and financial support in the form of grants, subsidies and tax incentives for early movers.
4. Focus initially on onshore wind and solar as a way of accelerating an indigenous green hydrogen economy, with a second phase post 2030, scaling Ireland's green hydrogen economy and delivering Ireland's offshore wind potential, combined with green hydrogen production for potential export.
5. Enact clear regulation and planning guidance to streamline the development of green hydrogen production and ancillary infrastructure

Given the advanced stage of our development and the work we have already completed around community engagement, as well as the establishment of a green hydrogen eco-system, we would be delighted to share our knowledge and lessons learned with the DECC and their advisors as the findings of this Consultation are collated and a Green Hydrogen Strategy is developed.

Background

We are all too aware of Ireland's legally binding net-zero targets, as set out under the *Climate Action and Low Carbon Development (Amendments) Act 2021*. This landmark legislation provides for the annual publication of a national Climate Action Plan, setting out a clear framework and roadmap of the necessary actions required to achieve these climate targets.

The most recent (2021) Plan acknowledges that green hydrogen can play an effective role in decarbonising a number of sectors across Ireland. As we move towards net zero and hydrogen demand increases, producing zero carbon hydrogen will be critical.

In order for Ireland to play a leading role in the new hydrogen economy that the rest of the world is moving towards at pace, a dedicated and meaningful Green Hydrogen Strategy with focused, firm commitments is essential. Ireland has the benefit of being able to take learnings from other countries that have established hydrogen strategies and use the best parts of those strategies in forming its own. In particular, transition hydrogen production should be avoided such as blue or turquoise hydrogen and a definitive commitment made to renewable energy powered hydrogen production.

If implemented correctly, this Green Hydrogen Strategy has the potential to set Ireland on a path towards creating a sustainable and indigenous hydrogen economy as well as establishing an energy export market, the likes of which the country has never seen before. Green hydrogen production and its rollout across various sectors of the economy is relatively nascent internationally; capital costs remain high – however, this was the case with renewable electricity production in recent decades, there is no doubt that these costs will fall upon achievement of scale. Therefore, Mercury believes that Ireland needs to act quickly and decisively to support green hydrogen production to secure this once in a generation economic opportunity.

In addition to the opportunity a green hydrogen economy presents, current events in Europe underpin the importance of speeding up the transition to alternative and sustainable energy sources such as green hydrogen that are produced within Ireland. With this in mind, it is crucial that Ireland develops a robust Green Hydrogen Strategy as early as is conceivably possible.

Overall Priorities for Mercury Renewables:

1. Funding schemes for development and production of green hydrogen;
2. Promotion of onshore wind energy developments as facilitators of a green hydrogen economy, reducing reliance on imported energy and ensuring Ireland's energy security;
3. Development of regional hydrogen hubs & hydrogen economies; and
4. Planning reform.

1. Establishment of Government Funding Schemes for the Development and Supply of Hydrogen

Mercury welcomes the fact that DECC has examined international hydrogen strategies in great detail – in particular those of Portugal, Germany and the United Kingdom. Mercury has also studied these examples as well as that of the Netherlands – and believes that these can all provide a clear direction throughout the drafting process of a Green Hydrogen Strategy for Ireland.

As is to be expected, each Strategy poses different goals in terms of prioritising upstreaming and down-streaming of hydrogen, depending on the capacity and ambition of each country – however, Mercury believes that Ireland should adopt a priority of green hydrogen upstreaming in the initial phase of its Strategy, given that many EU countries are at more advanced stages in terms of hydrogen production and distribution.

In order for this priority to be realised, Mercury believes that Ireland needs to put in place a number of well-resourced committed funding streams that will facilitate and prioritise the delivery of hydrogen-producing infrastructure. This is where we believe Ireland can look to international best practices to ensure that we do not self-hamper our own ambitions.

Each of these international strategies have one major link in common; the national government has ringfenced and allocated massive sums of funding towards the development and production of green hydrogen. There can be no doubt that Ireland will need to follow suit and take this into account during Budget negotiations each year.

Portugal: Under the Portuguese Strategy, the national Government has committed €7b in investment in hydrogen production projects by 2030. Given that the environmental budget currently stands at €3.5b–3.7b per annum, this suggests that the Portuguese government have committed roughly 19–21% of their environmental and climate action budget to the production of hydrogen.

As part of this funding, Portugal has committed to cover the difference in cost between the production of green hydrogen and the price of natural gas within the national market between 2020 and 2030. This ensures that there is no translation in tariffs which are paid by consumers.

In addition to this, Portugal continues to invest in and support projects which produce and distribute energy from renewable sources that involve a hydrogen component. As part of the Strategy, Portugal launched a €40m fund to support these much-needed projects – something which Ireland can certainly emulate.

Netherlands: From 2021, a budget of €35M a year has been made available for the scaling-up of production capacity for green hydrogen, until 2030, across the Netherlands. Various ambitious green hydrogen projects, including large electrolysers, have also been announced in the Netherlands in recent years, but all are still waiting for a final investment decision separate to this fund.

In addition to this funding, the Dutch Government allocate an enormous amount of funding to renewable energy projects through their Renewable Energy Support Scheme (SDE+). In 2022, the Scheme was extended to include large scale green hydrogen projects with a total budget of €13b.

United Kingdom: The UK recently launched a call for applicants to apply to a Net-Zero Hydrogen Fund, with up to £240m in funding available from 2022–2025 to support the upfront costs of developing and building low carbon hydrogen production projects.

The Fund can be accessed through four strands – including (i) front-end engineering design studies; (ii) smaller electrolytic projects that do not require revenue support; (iii) electrolytic projects that require revenue support; and (iv) usage/storage-enabled products.

The UK has also committed to provide funding of up to £60 million under their Low Carbon Hydrogen Supply 2 competition, which will develop novel hydrogen supply solutions for a growing hydrogen economy. A further £68 million will also be made available under the Longer Duration Energy Storage Demonstration competition, with storing hydrogen produced from excess electricity in scope (subject to eligibility criteria).

Mercury Renewables Priorities: Funding Schemes

1. Create a Green Hydrogen Development Fund to assist in the development of green hydrogen production infrastructure.
2. Provide additional support to hard-to-abate and heavy emitting sectors such as transportation
3. Ensure that a minimum of 15% of the Government's environmental/climate action annual budget, between 2023 and 2030 is dedicated to hydrogen production.

2. Promotion and Facilitation of Onshore Wind Energy as First Mover in the Production of Green Hydrogen

Due to the established nature of the onshore wind industry in Ireland it can play a pivotal role in the early phases of green hydrogen development and the corresponding development of a green hydrogen economy. Lead times to deliver an onshore wind farm are considerably shorter than offshore wind and in parts of the country, the performance of onshore wind is equivalent to that of an offshore wind project. This combined with the lower operating costs means the onshore wind enjoys a lower levelized cost of electricity than offshore wind. Electricity is a critical component in the production of green hydrogen via electrolysis. In order to ensure the efficient use of Government funding as part of a Green Hydrogen Strategy, projects with a low levelized cost of electricity should be prioritized in terms of financial and regulatory support.

However, this does not come without its challenges. Another concern which Mercury wishes to highlight is the current prevention of renewable energy developments and private generators from directly supplying energy to customers – rather than through the national power grid. At present, private wires may only be established where the distribution system operator refuses a request for a connection to the grid network – and where the energy regulator has provided consent. Mercury is not aware of practices in Ireland where this has occurred to date.

Furthermore, the Electricity Directive (2009/72/EC) provides an opportunity for a private wire system to be fully utilised across EU Member States – however, to date, the Irish Government have not fully transposed this particular provision within national legislation. Mercury notes that the European Commission has referred Ireland to the European Court of Justice in this regard.

A public consultation in relation to the usage of private wires was expected in the first half of 2022, however we understand that this has regrettably been delayed. There is no doubt that the facilitation of private wires will greatly reduce the restrictions many onshore wind and solar developers currently face, when considering co-location with hydrogen electrolyser production facilities.

Mercury Renewables Priorities: Promotion of Onshore Wind Energy

1. Ensure that the Green Hydrogen Strategy places a strong emphasis on the promotion of onshore wind as a key facilitator of the first phase of green hydrogen production in Ireland.
2. Follow through on Government commitment to hold a public consultation into the usage of private wires.
3. Execute the full transposition of the Electricity Directive.

3. The Development of Regional Hubs and Local Hydrogen Economies

Mercury believes that it is essential that Ireland takes a regional approach to designing Ireland's Green Hydrogen Strategy accounting for the contextual differences between urban and rural Ireland and in particular, existence of critical infrastructure such as wind farms and by extension, capacity to produce green hydrogen.

Taking a regional approach to a green hydrogen strategy may also serve as a means to stem the tide of outward migration from rural areas, by providing an economic boost to rural Ireland, attracting industry and jobs to rural Ireland, all while providing a means to shift away from carbon intensive practices in favour of using green hydrogen and renewable energies. Mercury believes that the development of rural hydrogen hubs and associated hydrogen economies will also attract and promote the return of workers who had previously migrated to urban areas.

As such, Mercury recommends following the example set out by the UK in its identification of "whole value chain" strategic hubs. A commitment to developing regional hubs for the production and use of green hydrogen would allow generators and users to benefit from lower storage and transport costs, economies of scale, and knowledge sharing. Importantly, lower costs would allow for greater community funding and investment into production and innovation, while likely resulting in lower prices for end-consumers. Meanwhile, since green hydrogen is currently quite difficult and costly to store and transport, having regional hubs would ensure that Ireland maximises the benefits of increased hydrogen production while the Government commits investment to the development of storage and transport innovation and capacity, which will unlock a broader national hydrogen economy and potential for exporting Ireland's excess green hydrogen.

As such, green hydrogen targets set by the Government in its forthcoming Green Hydrogen Strategy should account for the fact that rural and urban areas pose vastly different contexts and potential for supporting green hydrogen development and use, with rural areas particularly positive locations for the development of local and regional hydrogen hubs. Hence, targets should be set individually according to region to maximise their impact, in addition to overarching national targets.

It is important to note, that alongside commitments to develop regional hubs for green hydrogen, the Government will need to ramp up its efforts to address requirements for the deployment of hydrogen storage which in and of itself could lead to a future stream of consistent revenue, as well as ensuring that at times of low wind and solar output, we have green energy stored for use, without the need to turn back to dirty

fossil fuels such as coal or politically unstable Russian gas. With regards to the development of regional hubs, Mercury believes that DECC should liaise closely with colleagues in the Department of Rural and Community Development (DRCR) to ensure synergies between DECC's efforts to develop rural hydrogen hubs and DRCD's development of rural development plans.

Mercury Renewables Priorities: Development of Regional Hubs & Hydrogen Economies.

1. Take a regional approach to setting hydrogen production and consumption targets that accounts for the contextual differences between rural and urban areas, as well as their corresponding readiness for green hydrogen production.
2. Commit to the development of regional hydrogen hubs that would allow rural area generators and users to benefit from lower storage and transport costs, economies of scale, and knowledge sharing.
3. Commit significant investment in the further development and innovation of storage and transport methods and capacity for green hydrogen.
4. Create synergies between targets to create regional hydrogen hubs and the Department of Rural and Community Development's regional development plans.

4. Planning Reform

Mercury Renewables has been developing an onshore wind farm in Carrowleagh, Co. Mayo for over a decade. In December 2021, we launched our intention to produce green hydrogen on-site to advance the local economy and further contribute to Ireland's net-zero carbon emission targets.

Mercury is gravely concerned that our capacity to reach these urgent targets is severely hampered by the length of time of Ireland's planning process – particularly when renewable energy developments are currently in the public interest. Over time, planning legislation has become overly complicated and difficult to navigate, contributing to significant delays. Mercury welcomes the European Commission's recommendation, within its RePowerEU Plan that EU Member States should implement *specific* permitting recommendations to ensure appropriate resourcing at all stages of the planning and permitting system. Mercury welcomes the Government's ongoing reform of Ireland's planning legislation, which is due to be

published at the end of 2022 – however, it remains unclear as to whether the scope of this review will extend beyond housing.

Mercury notes the recent passage of the Planning and Development (No.2)(Amendment) Act 2022 and the Minister for Housing, Heritage and Local Government's comments about the need to reform the process around judicial reviews, which have the potential to delay developments for months, if not years. Large backlogs within the Irish Courts also contribute to this delay. Mercury welcomes the announcement that a new dedicated planning and environmental court will be established in 2023 – and asks that the rules around individuals initiating lengthy judicial reviews against developments which are in the public interest be further examined.

The Maritime Area Planning Act 2021 was a milestone piece of legislation aimed at streamlining the maritime planning regime and thus enabling the swift deployment of offshore wind energy developments. In advance of submitting a development application to An Bord Plenála, a developer must acquire a Marine Area Consent, which must be adjudicated within 90 days. An Bord Plenála must then adjudicate on the developer's subsequent planning application within 18 weeks of receipt, subject to specific provisions under the Planning and Development Act 2000 (as amended). Certain applications may also be prioritised under Ministerial Order. These timelines are notably shorter than current waiting times in practice – and therefore, there could be scope to develop a similar process for both onshore wind projects and renewable energy/green hydrogen potential.

Irrespective of what mechanisms are put in place for green hydrogen projects, clear guidance documents must be produced for the benefit of developers and planning applicants. These do not currently exist and would demonstrate a clear commitment to supporting renewable energy and green hydrogen developments – subject to meeting all necessary assessments.

Mercury Renewables Priorities: Planning Reform

1. Inclusion of renewable energy projects in the ongoing Government review of Ireland's planning legislation.
2. Creation of a mechanism similar to Maritime Area Consent, complete with guidance materials, for green hydrogen renewable projects and onshore energy developments.
3. Review of judicial review process in relation to renewable energy developments which could be in the public interest.

Mercury Renewables' Commitments to Community

As part of our ongoing development and community engagement activities we have made the following commitments. We encourage the DECC to consider establishing community support guidelines for green hydrogen development to ensure local and rural communities are brought along during this transition.

We already intend to play our part in unlocking the huge potential for the West of Ireland – and have no doubt that many other like-minded developers of green hydrogen will pursue this same intention throughout our small island. In particular, Mercury will provide discounted green hydrogen at fixed prices to local communities within Counties Mayo and Sligo. This will remove unexpected price rises and ensure a secure supply of energy from a local source. We have no doubt that this will go a long way to ensuring that the local community's carbon footprint is substantially reduced. As an aside, the home improvement grant, under the Sustainable Energy Authority of Ireland (SEAI), does not currently provide cover for hydrogen boilers of any kind. It will be vitally important for this to change in order to ensure that there are accessible grant/funding supports to help households in Ireland to make the transition to hydrogen boilers and cooking systems as soon as green hydrogen is readily available.

Mercury is committed to helping develop technical knowledge and skillsets throughout the West of Ireland so that it can realise the full potential of this exciting new green economy. As part of this plan, we will establish local apprenticeship programmes for electricians, logistic managers, health and safety officers, and other technical specialities. We believe that exposure to this skillset is absolutely vital as part of our transition to green hydrogen and further believe that training programmes of this kind can be expanded within the national context, starting within our third-level institutions. The Government should provide a clear commitment to funding further and higher education, training and skills courses around green hydrogen to ensure the necessary skills are present for a functioning and effective green hydrogen economy.

Although the Firlough Wind Farm may not participate in the RESS auction process as the energy will be used in producing green hydrogen, we have made a commitment to establish a community fund that matches the €2 / MWh obligation placed on successful RESS bidders. We strongly believe it is important that our project contributes directly to the local economy.

Conclusion

Once again, Mercury Renewables wishes to thank DECC for the opportunity to contribute to this timely public consultation. We look forward to the publication of Ireland's National Hydrogen Strategy, which we understand will be published as part of the Climate Action Plan 2022 in Q4 of this year.

This strategy must be more than a token gesture. It must be meaningful, and it must set clear targets and goals that will work in favour of developing a viable and successful green hydrogen economy that boosts employment and the attractiveness of rural locations to industry.

At Mercury Renewables, we have valuable first-hand knowledge obtained through our lived experience developing a green hydrogen project in Ireland that we would be happy to provide to the DECC as the Green Hydrogen Strategy is developed.