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Date 2nd September 2022

Wholesale Electricity and Gas Policy Division
Department of the Environment, Climate and Communications
29-31 Adelaide Road
Dublin D02 X285

Sent by email to: hydrogenconsultation@decc.gov.ie

RE: **Hydrogen Strategy**

Dear DECC

The EAI welcomes the opportunity to respond to the consultation on Ireland's Hydrogen Strategy.

Building Blocks of a Hydrogen Strategy

Ireland's decarbonisation pathway will see electrification as its backbone supported by high levels of wind and solar generation. EAI has studied this high renewable system and published its Our Zero Emission Future report with MaREI in 2020.

Our flagship report finds.

- that the electrification of new loads in heat and transport plays an important role in wider system decarbonisation.
- there must be continued investment in flexibility and grid infrastructure.
- that while wind energy will be the main driver of decarbonisation, the reliable delivery of electricity requires dispatchable generation to play a necessary role providing energy, system services and flexibility.

- that there is a need to promote decarbonisation across the full system including supply, grid, and demand side measures.

Taking all of the above together, EAI believes that the hydrogen economy in Ireland will be built around the following.

- Decarbonisation of the power sector – renewables like wind and solar, supported by low carbon system services can see the power system decarbonise by more than 80% but there is a need for another technology to move to a zero-carbon power system. Hydrogen can play a key role here and generation equipment manufacturers are already assessing their capabilities to ensure they can accommodate hydrogen. The power sector could be the primary user of hydrogen in Ireland in a net zero energy system.

- Security of supply – events of late have shown us that security of supply is more fragile than we previously thought with reliance on fossil fuel infrastructure further and further away from the island. Green hydrogen produced from indigenous renewables offers an opportunity of energy independence where we store hydrogen to support and back up the energy system.

- Hard to abate sectors - there are sectors of energy use where electrification or other renewable technologies may not yet be feasible or will not be able to serve. Hydrogen should play a key role here especially when considered in conjunction with economy of scale efficiencies from the secure hydrogen supply which will be developed for the power sector. These hard to abate sectors include heavy long-distance transport and higher temperature heat, both of which are economy critical sectors where action is needed now.

In addition to the above, it is possible that hydrogen demand will develop in other sectors. In particular, there has been growing interest in producing hydrogen in Ireland and exporting it either as hydrogen or in a further refined format. The development of a hydrogen export economy is to be welcomed and could significantly reduce the costs for Ireland of securing its own hydrogen requirements. EAI is therefore supportive of international cooperation in hydrogen supply and the role Ireland's Government can play in facilitating export opportunities.

The consultation paper discusses the potential for blending hydrogen in the natural gas networks and seeks views on the merits of this. There are mixed views on this point across industry.

- some believe that blending can serve a useful purpose in getting the hydrogen supply business off the ground with a ready-made demand while helping reduce the carbon intensity of end uses such as heating etc.

- others are of the view that green hydrogen is a scarce and valuable resource and should be diverted directly, and in pure form, to hard to abate areas in the first instance as opposed to an indiscriminate usage.

EAI is of the view that blending of hydrogen in the gas network is a technical question in the first instance. It is not yet demonstrated that hydrogen can be safely injected into the gas network but Gas Networks Ireland (GNI) are considering this point in detail at present within Action 169 of the Climate Action Plan. Until GNI has completed its work regarding blending, with the results widely shared and debated, deciding whether or not to blend in the gas network is premature. This work should be finalised without delay and ideally in early 2023. A robust analysis of the economics and climate benefits compared to the alternatives can proceed after the technical discussion have concluded.

Establishing a Hydrogen Economy

Hydrogen usage in Ireland is minimal today and so the developing of a hydrogen economy will largely be from scratch, albeit we will have access to a significant knowledge base from earlier adopters. Development of a hydrogen industry in Ireland will require supply and demand to be developed in tandem. Therefore, it is important that the hydrogen strategy is clear on where its usage will be prioritised with the market, regulatory and incentive framework built around this. With this in mind, EAI recommends the following.

Targets – Government should set targets for specific outcomes related to hydrogen. For example, a target level of electrolysis, of hydrogen powered generators, of hydrogen storage and of heavy-duty hydrogen vehicles should be arrived at within a clear timeframe. Targets should be broken down to within this decade, the first half of the next decade, second half of the 2030's etc. This granularity of targets is essential to encourage investors to bring forward projects in a timely fashion.

Market and Regulatory Framework – incorporating hydrogen into Ireland's energy system will require amendments to some parts of the market and creation of new rules in others. For example,

- the electricity market design will need to evolve at an early date to a market suitable for net zero. The incorporation of zero carbon generation fueled by hydrogen should be part of this.

- hydrogen storage will need an entirely new regulatory framework which will need to take emerging EU legislation on hydrogen into account. This will need to include safety regulation and market issues such as the regulatory model (e.g., Regulated Asset Base, Cap and Floor)

- hydrogen certification will be important to provide confident to purchasers of its origin and so a certification scheme, either nationally or internationally will be needed.

- EU framework - The European Commission's draft delegated regulation for Renewable Fuels of Non-Biological Origin (RFNBOs) proposes criteria for green hydrogen categorisation. While this relates to hydrogen use in transport, it is expected to inform the ruleset for green hydrogen categorisation in general. The draft delegated acts propose strict rules for additionality and allow for certain derogations until 2027. EAI believes the following points are important regarding the additionality framework.

    - The 2027 derogation in Article 7 is useful and important. However, in an Irish context, with no hydrogen strategy yet in place, it would be more appropriate that the derogation be allowed until 2030. This would merely offer projects here the same easements that will be available in other more advanced hydrogen markets before 2027 given that we are less advanced with a hydrogen framework.

    - Additional flexibility should also be considered regarding temporal matching as part of the transitional arrangements in Article 7 of the delegated acts. There is an ability for monthly matching included but the criteria for using this clause are very limiting. Further flexibility before 2030 should be possible without any resultant increase in electricity system emissions.

    - Article 4 (4) of the draft delegated act allows electricity that otherwise would have been redispatched, to count as renewable in hydrogen production. It is important that TSO processes are in place to facilitate the verification of this avoided redispatch – project developers should not be disadvantaged by the lack of a verification process.

All of these should be key actions in Ireland's hydrogen strategy.

Supply Side Measures – the production of hydrogen will need to be underpinned by supports or at least de-risked in its infancy. A model to support production should form an action from the strategy with an appropriate body tasked with designing a route to production mechanism.

Demand Side Measures – While demand and supply for hydrogen should be developed in tandem, specific mechanisms to bring forward the two will need to be separate. For example, a high temperature industrial customer seeking hydrogen should not be required to financially underpin the development of hydrogen production facilities. Therefore, demand side supports

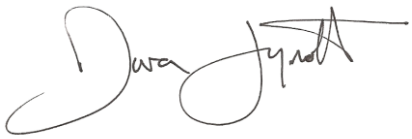
tied to the identified appropriate use cases should be considered as part of the strategy. The strategy should include an action on the appropriate body to develop a demand side support and incentive framework.

Funding – in addition to large scale support schemes there should be funding allocated to early-stage projects to get them off the ground. This could be required in the short term where there isn't sufficient certainty to design a large-scale support scheme. Early-stage development of hydrogen projects are unlikely to conform to a particular format and so an agile approach to supporting important projects is important.

In summary, EAI welcomes the development of a hydrogen strategy linked firmly to Ireland's decarbonisation strategy objectives with a series of clear actions identified to support the development of hydrogen in Ireland.

Please do not hesitate to contact me if you have any questions or require any clarifications regarding this submission.

Yours Sincerely



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Dara Lynott
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Electricity Association of Ireland