1. Introduction

EI-H2 welcomes the opportunity to respond to the Department of the Environment, Climate and Communications Renewable Heat Obligation Scheme (RHOS) consultation.

EI-H2 is Ireland's first green hydrogen company and wants to support Ireland achieve it ambitious climate action targets. EI-H2 are developing a 50MW Green Hydrogen Production Plant in Aghada, County Cork, which once operational will remove 63,000 tonnes of carbon emissions from industry and power generation, per annum. EI-H2, in partnership with Zenith Energy, have announced a joint venture to develop a 3.2GW Green Hydrogen and Ammonia Production Plant on Whiddy Island, County Cork.

Further information can be found at: https://ei-h2.ie/

2. Consultation Questions

1. Do you think that a Renewable Heat Obligation is an appropriate measure to introduce?

Yes, EI-H2 thinks that a Renewable Heat Obligation (RHO) is an appropriate measure to introduce. We believe it could de-risk investment in and improve financial viability of renewable heat projects, by creating a reliable level of demand.

An RHO could support this by reducing emissions from heating. It should be considered in parallel with other actions to fully decarbonise heating in Ireland, such as insulation, electrifying heat where possible and using renewable gases such as green hydrogen where appropriate.

2. If not, what alternative measures would you consider appropriate to increase the use of renewable energy in the heat sector?

In the 2021 Climate Action Plan, Ireland has stated the ambition of Net Zero 2050. We believe the RHO should both address emissions from heat and enable Ireland to achieve Net Zero 2050, green hydrogen will play a key role in this energy transition. This could be support by including green hydrogen targets in the RHO.

3. Do you agree that the obligation should apply to all non-renewable fossil fuels used for heating as set out above?

Yes. Furthermore, it is important to recognise certain forms of heat require energy sources other than electricity. To this end, including green hydrogen targets will help Ireland diversify from fossil fuels. Green hydrogen provides Ireland with an indigenous source of energy ensuring security of supply.

4. It is intended that electricity used for heating purposes and renewable/waste district heating systems would be exempt from this obligation, do you agree with this approach?

Yes, significant progress has been made in renewable energy powered electricity. If included there could an unintended consequence of electricity producers trading with those not meeting their RHO targets.

5. Do you agree that the portion of fossil fuel input used in CHP plants to generate heat would be considered to be part of the obligation?

The obligation should not be technology specific. A consumer with a natural gas demand could meet their obligation using green hydrogen.

6. Are energy suppliers the most appropriate bodies to become the obligated parties in the heat sector?

Yes, suppliers are best placed to manage this, due to their position in the market and because it is the practice used for the Energy Efficiency Obligation Scheme.

7. Is the 400 GWh of energy supplied an appropriate level for a supplier to become obligated?

A 400 GWh threshold would exclude some heating fuel suppliers. Once the scheme is established consideration should be given to lowering this threshold.

8. Do you agree with the 2023 start date for the obligation?

Demand for renewable heating fuels needs to be created to stimulate the market. By starting the obligation promptly, it would create a dependable demand that would give investors' confidence in projects and hence enabling them to proceed.

For example, EI-H2 will have a 50MW hydrogen production facility coming online in 2024, which will be Ireland's first commercial scale green hydrogen facility. By introducing the renewable heat obligation promptly, it would give investor confidence and hence help in achieving the proposed completion date.

9. In terms of the obligation rate, do you agree with the proposed initial level of obligation of 0.5%?

If a higher obligation rate was introduced, it would increase demand for renewable energy to meet this obligation. In addition, this would send positive market signals to energy sector and reduce emissions. By stimulating demand for green hydrogen through a higher level of obligation it would increase Irelands energy security.

10. In terms of ambition for a 2030 target, what level of ambition do you think is appropriate?

    3% minimum
    5% medium ambition
    10% higher ambition

    Other?

To stimulate market demand and achieve current and future climate ambitions we believe the higher ambition of 10% is appropriate.

11. Do you agree with the first obligation period being multiple years 2023-2025 to give the industry time to develop supply lines?

Yes.

12. Once the first period 2023-2025 expires, do you agree with the obligation then becoming an annual obligation?

Yes.

13. Do you agree with suppliers being able to trade credits in order to meet their obligation?

Yes.

14. Do you agree with allowing 10% carry over of renewable credits to be used in the following year's obligation?

The carry over limit should be reviewed once the scheme is implemented.

15. What are the sustainable energy sources likely to meet the Renewable Heat Obligation at an obligation rate of (i) 3%, (ii) 5%, (iii) 10% by 2030?

A UCD report on the need for a hydrogen strategy in Ireland[1] outlined the potential for green hydrogen. Ireland has one of the best wind resources in the EU, with currently deployed onshore wind and planned offshore wind. Currently a proportion of the onshore wind is wasted, due to grid constraints and curtailment, in 2019 this amounted to 7.7% of available wind. As the penetration of renewable electricity increases, so too will the amount of constraint and curtailed wind energy, this could be converted to green hydrogen through electrolysis. Furthermore, Ireland has the potential to deploy 10GW of offshore wind off the East coast and 75GW of offshore wind off the South and West coast, which is more than our electricity demand. This could be converted to green hydrogen and used to meet our own needs as well as our export potential.

Vision 2050 by Gas Networks Ireland outlines that biomethane alone will not decarbonise the gas network, showing the need for green hydrogen to achieve a net zero gas network (heating system)

Hydrogen Europe[2] evaluated the cost of producing green hydrogen in 2019, Figure 1 shows that Ireland can produced some of the cheapest hydrogen in the EU from onshore and offshore wind.

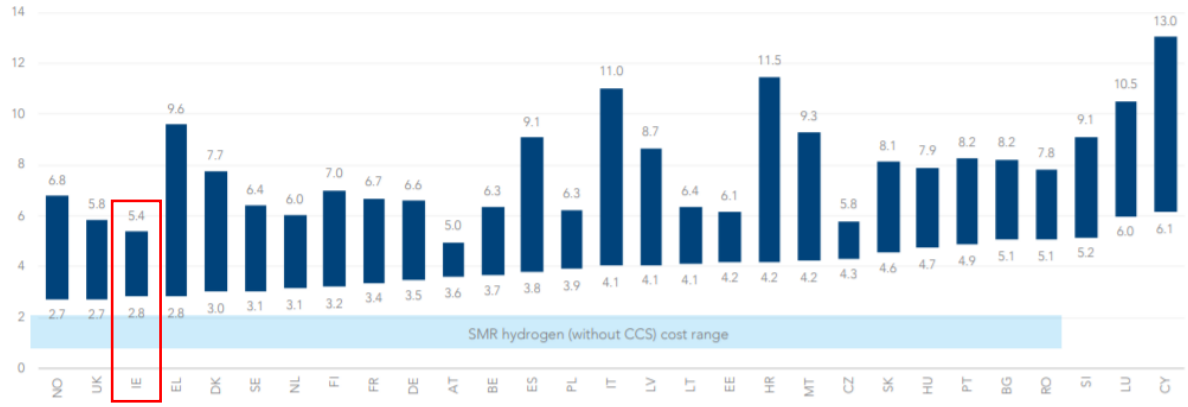

Figure 1 Levelised cost of hydrogen (€/kgH2) from onshore and offshore wind, with Ireland outlined in red[2]

16. Will there be enough sustainable indigenous supply to meet this demand?

Irelands has the potential to deploy 10GW of offshore wind off the East coast and 75GW of offshore wind off the South and West coast, this can be used to supply renewable energy for electricity and green hydrogen. Provided appropriate supports and policy are implemented, a collaborative approach

[1] https://energyinstitute.ucd.ie/wp-content/uploads/2020/06/UCD-Energy-Institute-The-need-for-a-Hydrogen-Strategy-for-Ireland.pdf (Accessed: 26th October 2021)
[2] https://www.hydrogeneurope.eu/wp-content/uploads/2021/04/Clean-Hydrogen-Monitor-2020.pdf (Accessed: 26th October 2021)

between industry and government could enable this. The scheme should favor indigenous renewable energy to establish supply chains in Ireland.

17. Do you agree that for renewable fuel delivered directly to a consumer that this will be the point of supply?

Yes.

18. Which option to you think should be applied for renewable energy that is indirectly supplied (e.g. via the natural gas grid)?

We strongly recommend that renewable energy is traced to the end consumer (Option A). It will support the development of Irelands green hydrogen economy by enabling sup

19. Do you think the costs set out above are reflective of likely costs?

We think further consideration should be given to how this would apply to green hydrogen.

20. Are these costs reasonable to impose on consumers?

Yes.

21. Do you agree with the intended position in relation to penalties for non-compliance?

Yes.

22. Do you think the proposed obligation poses a significant risk to increased energy poverty?

This obligation is necessary to establish the renewable heat industry and to meet Ireland emissions reduction targets in line with the Paris Agreement. All policy measures should consider the impacts on energy poverty in parallel with sustainability.

23. How best could the impacts on energy poverty be minimised?

Irelands energy transition should consider energy trilemma of affordability, sustainability, and security of supply. Green hydrogen has been identified at European level as playing a key role in an integrated energy system. As such supporting green hydrogen will minimise energy poverty in Ireland.

24. Do you agree with the outlined approach for additional support for green hydrogen?

Additional support for green hydrogen is welcomed and will be necessary to establish the hydrogen supply chain. This will assist in decarbonizing the Irish heat, transport, and power generation industry. The hydrogen industry will stimulate high value infrastructure investment outside of major cities and towns, creating significant construction and engineering jobs.

However, it is felt that a green hydrogen target would better support the industry. This is line with the EU Green Deal[3] which states that sub-targets are needed to boost the deployment of and investment in renewable hydrogen.

[3] https://ec.europa.eu/commission/presscorner/detail/en/fs_21_3672 (Accessed: 26th October 2021)

25. Do you think that offering multiple credits for green hydrogen in the heat sector might have unintended consequences for supply in other sectors such as transport?

This could be avoided by introducing green hydrogen targets across every sector (heat, transport & power).

26. Additional input

To enable green hydrogen to play a key role in decarbonising heat we believe the below measures are needed:

- In the next Climate Action Plan, there should be a clear focus on the role that green hydrogen can play in heat, transport and power.
- A National Hydrogen Strategy should be released by mid 2020. This strategy should:
    - Have a bias for action and include measures to incentivise both the production of and demand for green hydrogen, similar to the EU Hydrogen Strategy and other national hydrogen strategies. Such measure could include those identified in other countries such as:
        - Mandating a percentage of offshore wind to be converted to electricity for hydrogen production.
        - Creation of demand by giving a route to market for hydrogen through blending in the gas network.
    - Call for a timeline for the CRU to establish the regulatory framework for the production, storage and transport of hydrogen.
    - Call for a timeline for Gas Networks Ireland to identify and undertake the steps necessary to facilitate transportation of hydrogen on a blended and pure basis.