



Consultation on the Introduction of a Renewable Heat Obligation

Irish District Energy Association
October 2023

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Public Consultation Submission, Irish District Energy Association, October 2023

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Introduction

As set out in our submission to the original consultation on the Renewable Heat Obligation (RHO) in October 2021, IrDEA and its members fully support the introduction of the RHO and we welcome the opportunity to engage in this follow-up consultation.

Supporting investment and development in renewable heat is a policy imperative for the national transition to a low-carbon, climate resilient, circular economy. With a renewable heat share of just 5.2%, Ireland is currently ranked last among our European counterparts (Eurostat, 2023b). This must change for Ireland to meet its 2030 and 2050 decarbonisation obligations.

We view the RHO as a much-needed policy lever to incentivise change within an overly fossil-dependent heat sector. However, IrDEA is concerned that district energy has not been named as an eligible source of RHO credits. Such an oversight is a wasted opportunity to see that the RHO aligns with the Climate Action Plan 2023 goal to redirect the heat sector to a combination of district energy and heat pumps by 2050. Every conceivable opportunity must be taken to promote the establishment and growth of district energy systems across the country. One way to do that is to allow district energy networks to sell RHO credits as an income source that could then be invested in the further growth of networks.

IrDEA is hopeful that this submission will help to convince those determining the final make-up of the RHO to reconsider including district energy in the RHO credit system and, in so doing, help to incentivise the heat sector to shift towards its incorporation into their plans for future evolution.

About IrDEA

Founded in 2017 to promote the development of low-carbon district energy in Ireland, IrDEA currently represents over 30 member organisations boasting a range of specialisms across the value chain of the district heating and cooling sector both in Ireland and abroad.

We are the only association in Ireland dedicated to supporting and representing the interests of the district energy sector. It is our role to identify and propose solutions to the barriers faced by the sector in meeting the Climate Action Plan 2023 target of supplying enough heat and hot water to serve the needs of up approx. 200,000 homes and 2500 public/commercial buildings by 2030 (i.e., 2.7 TWh of district energy).

Acting on behalf of our members, we support and promote the growth of the district energy sector in Ireland to aid the creation of a new heat market that offers greater opportunities to use indigenous low-carbon and renewable sources of heat.

Our activities include,

- Developing and promoting policy on district heating & cooling.
- Supporting the growth of the sector in Ireland.
- Building and sharing knowledge on district energy in Ireland.
- Stakeholder engagement.

- Commissioning and supporting research on district energy.
- Collaborating with organisations with similar missions to our own in Ireland and abroad, this includes Renewable Energy Ireland and Euroheat & Power.

About District Energy

As of mid-2023, there were just over 17,000 district heating networks across Europe supplying heat to 70 million people (Piel et al., 2023). It is no coincidence that some of the countries with the highest shares of renewable heat across Europe are also heavy users of district energy – they include Sweden, which boasts a renewable heat share of 68.6%, Estonia (61.3%), Latvia (57.4%), Finland (52.6%), and Denmark (51%). By contrast, Ireland has the lowest renewable heat share in Europe at 5.2% (Eurostat, 2023a), with less than 1% of heat demand being met by district energy (SEAI, 2022a).

SEAI's National Heat Study (SEAI, 2022a) provides a comprehensive assessment of the options available to decarbonise Ireland's energy used for heating and cooling homes, businesses, and industry. Published in February 2022, the study indicates that up to 54% of Irish buildings could be suitable for connection to district heating networks.

The total investment required to achieve this is estimated at between €2.7 and 4 billion for the deployment of the heat networks and associated heat production plants (approx. 40% public piping, 20% homes & buildings, and 40% new low-carbon production plants) (Government of Ireland, 2023). With over 30 million homes currently connected to district energy across Europe, we estimate that for Ireland to achieve its 2030 district energy targets, less than 1% of what the industry has already delivered in Europe (Piel et al., 2023).

Beyond the decarbonised heat benefit promised by the sector, the rollout of district energy networks will likely lead to the creation of over 2,000 full-time jobs over the next decade. The skills and training for which already exist at the interface between energy, engineering, and construction. Significant cross-over is likely between the district energy sector and these three broad areas of skills and training, which presents a key avenue for workers seeking to transition from fossil intensive industries to renewables (Vogeley et al., 2020).

Benefits.



Figure 1. Benefits of District Energy (HeatNet NWE, 2021)

District heating has many economic, environmental, and social benefits, such as carbon reduction, reduced maintenance costs, increased comfort, and reduced fuel poverty. Local authorities, building developers, building managers and customers can all benefit from the development of a district heating network in their area, this includes:

1. Easier integration of renewable and low-carbon heat sources without disruption to customers/homeowners as access to each individual dwelling is not required.
2. Lower local air pollution as buildings fossil fuel boilers would no longer be required.

3. Facilitates utilisation of indigenous low-carbon resources which would not make sense at a smaller (individual building) scale such as deep geothermal and industrial waste heat resources – leading to more efficient operation of both industrial plants and heat production and supporting a more circular economy.
4. Provides storage and demand side response for the electricity grid at a fraction of the cost of battery storage when supplied by large-scale heat pumps, electric boilers etc. This also facilitates greater production of renewable electricity (e.g., curtailment of wind turbines can be reduced) due to the flexibility provided by this thermal storage capacity.
5. Increased customer safety as there is no risk of gas leaks or carbon monoxide due to on-site combustion of fuels.
6. Benefits local economy by providing low-cost heating to customers (reduced overheads) and residents (reduced fuel poverty), potential revenue from waste heat for local industries and providing new local employment in the construction, operation, and maintenance of the network.
7. Efficient operation of heat production plants is ensured by constant monitoring, operation and maintenance being carried out by trained professionals – this is not possible with solutions located in individual homes where equipment is often not maintained to regularly achieve high operating efficiencies.

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1. Context

The district energy sector is set to deliver on its Climate Action Plan 2023 targets of,

- 2025 – 0.8 TWh (heat demand equivalent of approx. 80,000 homes) (2022, p. 161).
- 2030 – 2.7 TWh (heat demand equivalent of approx. 200,000 homes) (2022, p. 161).
- 2050 – All buildings to either be connected to heat pumps or district energy networks (2022, p. 163).

The sector has been energised by the policy signals that have emerged over the past two years to encourage the establishment and growth of district energy in Ireland. This includes the District Heating Steering Group Report (2023) and Climate Action Plan 2023, and the active commitment to produce a Heat Act. For us, three specific areas of policy will be the key to opening the market and kick-starting the delivery of projects on the ground. They are,

1. A robust and transparent regulatory framework to help de-risk projects and safeguard consumers.
2. An efficient and effective consenting regime to facilitate the rollout of district energy networks under public roads. This is vital to facilitate the connection of individual buildings, campuses, and communal heating schemes to a wider district energy network that can create economies of scale.
3. A funding regime for CAPEX and OPEX to underwrite affordability for consumers choosing heat networks and support the establishment and growth of heat networks across Ireland.

This consultation response ties into the third of those policy areas, i.e., the need for funding sources to underwrite affordability for consumers choosing heat networks and support the establishment and growth of heat networks across Ireland.

2. Consultation Question Responses

No response to questions 1 through 11.

Duration post 2030

12. Do you think the proposed end date of 2040 provides a sufficient payback period to cover the investment in indigenous renewable energy installations?

No. It is highly likely that renewable heating projects will be capital intensive and have long payback periods of 10-15 years, so 2045 would be more appropriate if the objective is to stimulate support for these capital-intensive projects.

Supplier Thresholds

13. Do you agree with the proposed Obligation threshold of 1000Gwh?

No. The threshold for RHO obligated parties is too small. If the threshold is 1000 GWh, then a supplier would need to be supplying the fuel equivalent of ~100,000 homes before they would meet the threshold for the obligation. This would likely mean that large numbers of particularly oil/kerosene suppliers would be excluded, yet these are the fuel types responsible for most carbon emissions in the heating sector.

14. Do you feel there could be any risk of market distortion with the proposed Obligation threshold of 1000Gwh?

The risk is that it will enable a large portion of the heat market to avoid being obligated by the RHO. It would be prudent to assess what share of the heat market will be covered if this threshold is applied to ensure that it will be sufficient to deliver an overall 10% renewable heat share by 2030.

Eligible Fuels & Certification

15. Please select all of the proposed renewable fuels you feel are appropriately listed as eligible for certification:

No response.

16. Are there any fuels not listed that you feel should be eligible for certification under the Obligation?

Yes. District heating and waste heat should be included within the context of the scheme.

Rationale

District heating is the best established and most well-proven technology for delivering large-scale volumes of renewable heat to buildings, particularly in urban areas. With the SEAI's National Heat Study (SEAI, 2022b) indicating that up to 54% of existing buildings are suitable for district energy, the volume of renewable heat that district energy could bring into the Irish heat sector is substantial.

The RHO presents a key opportunity for a market-based funding stream for district heating networks that could be used to maximise affordability and support the establishment and growth of networks. This would provide support for the achievement of government's 2025, 2030, and 2050 district energy targets as it would simultaneously bolster the investment case for district energy developers while eroding the competitive advantage of market-dominant fossil-based heat providers.

Consistency across policy mechanisms

This is the epitome of how a renewable energy promotion policy lever should work, as it funnels profitability away from polluter-based business models and towards those intended to deliver sustainable heat sources into the future. It is important that the RHO is designed in this way to ensure it is equipped to promote market-based behaviour that will move us closer to government's stated objective of moving all buildings to either heat pumps or district energy by 2050. This form of consistency in policy planning is crucial to ensuring that all policy mechanisms enacted with respect to decarbonised heat complement one another to strengthen and clarify the signal given to consumers, industry, and the public sector.

Failing to include district energy in the RHO credit system is therefore an error that must be corrected for the RHO to be as effective as we all want it to be in promoting a move to renewable and sustainable heat in Ireland.

Existing funding provision for district energy

While there is much to be hopeful for in terms of government policy that promotes a move to district energy, the bulk of the market signals that are currently being sent are solely at the strategic level. That commitment must be seen at the delivery level if we are to see policy become reality.

The RHO is a mechanism that shows on the ground-level, tangible support for renewable heat delivery. To date, district energy has not been included in policies of this type and that poses a significant barrier to the rollout of this technology at the scale needed.

The consultation documentation sets out that other energy sources are provided for through existing or future policy in the non-domestic sector. We would argue that this is not true of district energy as there is no clear mechanism that can be accessed to support largescale district energy projects in the way suggested. Nevertheless, we do query why this would be relevant even were district energy supported through a funding mechanism intended to promote and support the establishment and growth of heat networks.

To achieve decarbonisation in the heat sector, it is critical that every tool in our arsenal is used to bring about changes in investor and consumer behaviour. It would, therefore, surely make sense to provide a range of complementary support mechanisms that consistently promote the decarbonised energy sources that have been identified as the future backbone of the heat sector. Segmenting different mechanisms for different energy sources sends a muddled policy signal, which will likely result in consumer and investor behaviour that is fragmented, lacking in clear direction, and ultimately fails to achieve the clear goals that have been set for 2050.

Including district energy in the RHO is vital to signalling that government is willing to underpin its high-level district energy with a detailed and tangible policy capable of plotting a course towards their achievement.

Waste Heat

IrDEA is also concerned that the RHO largely overlooks waste heat as a source of sustainable energy that should be promoted in the Irish context. Waste heat from electricity generation, data centres, cold storages, wastewater treatment plants, waste incineration, and many more sources is plentiful and widely available for use in satisfying Ireland's heat demand. Indeed, there is so much waste heat in Ireland that we have more than is needed to heat our entire buildings stock (Europa-Universitat Flensburg, 2019; Irish District Energy Association, 2020) – this is also true of Europe (Danfoss, 2023).

It is a significant oversight of the RHO that this abundant, low-carbon, and low-cost solution to renewable heating has been excluded from the RHO. However, as district energy networks are the only mechanism for integrating waste heat into the heat sector, including them in the RHO would solve this problem.

17. Do you think that non-domestic biomass & biogas should be excluded as an eligible fuel for certification under the Obligation?

No response.

18. Do you think the portion of fuel attributable to heat in a Combined Heat and Power (CHP) plant should be considered as part of the Obligation?

Yes, but should also ensure that district heating is included or otherwise the deployment of CHP will be limited to relatively small projects.

19. Do you think renewable waste, as defined by the revised Renewable Energy Directive, should be included as an eligible fuel for certification?

Yes. Waste Heat.

Although this question is likely intended to relate to the bioenergy fraction of waste and how it is defined, it raises another fuel source which has a similar name but is currently overlooked by the RHO – renewable waste heat.

More heat is wasted in Ireland at present than is needed to heat all buildings, its omission from the RHO is therefore a significant oversight given that it is an abundant, low-carbon and low-cost solution to renewable heating.

Waste heat from electricity generation, data centres, cold storages, wastewater treatment plants, waste incineration, and many more sources is plentiful in Ireland and so should be included as part of the RHO. Delivering this waste heat to buildings will require district heating networks, so by extension, district heating should also be included in the RHO.

No response to questions 20 through 23.

Obligation Review

24. Do you agree with the review point proposed in year 3?

No. The review point should be earlier considering Ireland has the worst renewable heat share in Europe, so if the RHO is not delivering quickly, then it needs to be changed urgently.

On a final note. We consider the end point of 2040 to be too short for the RHO. If a project receives RHO support in 2029, this timeframe will allow only 10 to 11 years for a payback, this is insufficient if the aim is to stimulate capital intensive and ultimately very high-risk projects to be delivered. Since these projects are likely to be in the 'first mover' phase, this would seem too short a lead in and the end date should be pushed out to at least 2045.

3. Conclusion

To ensure consistency and clarity across the full spectrum of policy strategies and interventions, government must prioritise the goal of pivoting the heat sector to an efficient mix of heat pumps and district energy. Every policy lever must be used to promote that goal and it is, therefore, vital that district energy be incorporated into the RHO credit system.

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