Comments and Feedback on

Policy Framework for the Development of District Heating in Ireland

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General Comments

Outline Questions on Research

Q1: What additional research do you think needs to be carried out to support the development of district heating in Ireland?

Given the numerous instruments recognising and calling for action on climate change we consider that it would be appropriate to carry out detailed research into the various options for the maintenance and provision of space heating in terms of their impact on greenhouse gas emissions and their potential to mitigate same.
Consideration needs to be given in terms of the cost of mitigation per unit, research must give estimation of the cost per tonne of CO2, to allow comparison between technologies.

In that regard comparisons of the greenhouse gas emissions in the reference scenario (also called the counterfactual or baseline) and a district heating model should be carried out to include the fuel type and technology proposed for DH. In the case of forest biomass there are well established approaches that include full life cycle analysis that include scenarios such as the specific type of forest biomass, processing emissions and combustion efficiency[1].

Research should also be carried out on participatory models in DH, for example local authority ownership and operation, community and local business involvement and part ownership. This to have greater local community involvement in the provision of sustainable heat and energy.

Q2: How should research (including the upcoming comprehensive assessment) be used to inform/support the development of district heating in Ireland?

Provision of evidence to enable cost efficient and low greenhouse gas emission technologies and supply chains to be identified, taking into account the need for community and local

[1] **Carbon Debt Payback Time for a Biomass Fired CHP Plant—A Case Study from Northern Europe Kristian Madsen † and Niclas Scott Bentsen * March 2018 Energies 11(4):807**

Quantifying the climate effects of bioenergy – Choice of reference system
Kati Koponena,f,□, Sampo Soimakalliob,f, Keith L. Klinec,f,1, Annette Cowied,f, Miguel Brandãoe,f
Renewable and Sustainable Energy Reviews

business buy in over the long term, and contributions to local and rural development through feedstock and or technology provision.

Dissemination and free access to the results of the proposed assessments must be provided to allow authorities and stakeholders to properly assess technologies and on the ground realities (geographical, economic, technical) and to allow fully informed decisions.

Q3: Are there relevant existing research projects into district heating, in the Irish context, which are not referenced in this document?

The Hot Maps project https://www.hotmaps-project.eu/ and HeatNet https://www.nweurope.eu/projects/project-search/heatnet-transition-strategies-for-delivering-low-carbon-district-heat/ should be considered.

In addition to research projects on district heating the proposed policy should also consider related research and data that would impact policy implementation. Specifically we would advise that Cofords detailed annual analysis be utilised as a source identifying the supply of biomass feedstock available from Irish sources over the coming decades.

Q4: Can further research contribute to encouraging areas of compact urban growth to develop district heating projects?

Yes, especially at the planning stage for any new residential or business park development where clustering of housing and premises will lower infrastructure costs associated with DH and have other benefits related to overall energy demand.

Outline Questions on Regulation

Q5: What elements of Article 24 of the recast Renewable Energy Directive should be implemented in the near term (i.e. by the mid-2021 transposition deadline)?

We note that a member state with less than 2% penetration (district heating as a percentage of the heating market entire) may under certain circumstances avoid measures 2-9. While the reasons for same are noted and could be considered appropriate under certain circumstances we would request that a more detailed consultation of same be carried out in due course. Specifically we note and would suggest that requirement 4 be retained.

Q6: What elements of the Article 24 of the recast Renewable Energy Directive should be implemented in the medium term (i.e., by 2025)?

We would consider requirement 4 to be a priority and that all other measures be subject to detailed consultation, and consideration be given towards Irelands progress towards largescale implementation of district heating.
Regardless we would strongly suggest that district heating networks should ultimately be regulated to allow such networks act as true networks, e.g. accepting additional heat suppliers and direct access to consumers through the network.

Q7: Who should have the right to own the district heating networks?

While private ownership for initial periods will encourage development we would consider that such networks be ultimately considered public assets similar to other networks. Consideration could be given for networks to be owned/operated privately for a period of time before ultimately reverting to state ownership.

Q8: Should there be a district heating market regulator?

The CRU would be the natural regulator for district heating.

Q9: Should there be guidelines/Code of Practice around district heating and if so, who should be responsible for their development and implementation?

Guidelines and agreed codes of practice would be vital to ensure the success of both individual projects, and of the general concept of district heating in Ireland. These guidelines should be drawn up by a neutral body – however we would recommend that considerable weight should be given to industry expertise in setting up these guidelines. Early consultation would greatly expedite the task.

Outline Questions on Planning

Q10: What changes, if any, are required to existing planning and building regulations in order to support the development of district heating? In particular what changes might be required in order to promote the type of high density development that is seen as providing the most suitable conditions for development of district heating?

Planning authorities should identify areas of proposed high density development and ensure that provision is made for district heating in these developments. In particular we would suggest that new developments be prevented from locking developments into singular fuels (e.g. gas), and should instead be required to initiate with district heating, thus allowing future proofing of the development, as well as facilitating the use of low GHG heating.

Part L of building regulations needs to be revisited to ensure that building regulations are favourable to district heating from low/zero carbon sources such as waste heat, biomass etc...

A related point in regard to embodied energy in construction and systems that favour highly energy efficient residential and office accommodation is that currently the Building Regulations exclude high rise modern mass timber construction which is proven across North America and in Europe. A joined-up approach would see such buildings being heated as part of a DH scheme (based on whatever cost-effective technology is chosen).

Q11: Is there potential for the revised building Regulations to act as a driver for district heating?

Yes

Q12: Given the importance of the public sector taking a lead role in developing district heating in Ireland, as highlighted in the 2015 Comprehensive Assessment, what, if any, additional powers are required by local authorities in order to ensure they have the necessary vires to develop and operate district heating networks?

Firstly local authorities could be considered as the ultimate custodians of district heating networks for reasons outlined above.
Public sector users of heat are often very important anchor consumers of heat, consideration needs to be given to mandating such organisations to always seek low carbon heat supply. Annual fuel tendering is the normal practice and seriously hinders the move to low carbon heat that requires multi year investment in infrastructure.

Outline Questions on Financing

Q13: What sources of financing are currently available to the Irish district heating market?

Funding is available under the Support Scheme for Renewable Heat (SSRH)

Q14: What are the most appropriate financing mechanisms for developing district heating in Ireland?
Capital support is required to install district heating networks, given the very long timespan that these assets are operational for we would consider that capital supports or zero interest loans for such assets should be considered.

Q15: What are the most appropriate business delivery models for the Irish context?

Due to the hugely varied structure that could emerge due to the potentially varied heat supplies (waste heat, biomass, geothermal etc…) and potential main users it is not possible to consider that one descriptive model would suit all situations. However we would consider that district heating networks should ultimately be considered a public asset/utility, and in some cases as outlined with community involvement, as is the case in Denmark which has a successful and proven system of DH based on community/LA ownership and maintenance .

Q16: In addition to those listed above, what are the other main challenges to raising non exchequer financing for district heating projects in Ireland? What measures should Government consider putting in place in order to mitigate these challenges?

Lack of familiarity with the technology, absence of business models and information on financial flows, lack of exemplar projects at scale – where the state could provide examples - how to scale and expand investment and capture economies of scale through network expansion.

Long-term loans at low or zero interest, possible crediting of greenhouse gas savings or related tax incentives. Establishment of a DH challenge fund by the core banks with possible Ireland Strategic Investment Fund or the European Investment Bank involvement to enable a dedicated source of long-term financing.

Q17: Other than providing direct exchequer funding, what incentives might Government consider implementing in order to drive the development of district heating? For example, should major energy users be allowed to offset their carbon taxes on energy demand by supplying waste heat to local communities?

Carbon tax in itself is designed to push energy users away from high carbon fuels, thus "offsetting" that expenditure. Waste heat is a low carbon source and should benefit in kind. Planning regulations should ensure that where district heating is in place – or planned, that requirements are placed on developers to connect and use district heating for their heat demands.