Energy for generations

Consultation to Inform a Policy Framework for the Development of District Heating in Ireland

28th February 2020

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Contents

1. INTRODUCTION 3
2. RESPONSES TO SELECTED OUTLINE QUESTIONS 3

1. INTRODUCTION

ESB welcomes the opportunity to respond to this important consultation. Climate change is one of the biggest challenges facing humanity and globally there is a critical need to reduce greenhouse gas (GHG) emissions to protect future generations. This is acknowledged in a range of international agreements and national policy documents that set out ambitious targets to restrict global warming and eliminate greenhouse gases.

District Heating (DH) schemes can play an important role in the decarbonisation of our built environment where there is sufficient heat load density and a supporting market design (with an appropriate regulatory framework) to provide investor certainty for the associated investment. They can serve as an effective pathway to decarbonisation since the heat inputs to a network can be centrally replaced with low carbon sources without customer disruption. It is critical however that the heat source technologies deployed are low carbon (e.g. waste heat, heat pumps etc.) and offer long term decarbonisation benefit for Ireland and our citizens.

As per the Climate Action Plan, Ireland will transition to an electricity system with very high levels of variable renewables, mainly wind power. A significant feature of our high RES system will be times where wind generation is significantly in excess of electricity demand and so identifying sustainable energy storage technologies is key to the most cost-effective transition for Ireland. DH can provide a relatively large-scale storage solution where excess wind can be captured and stored as thermal energy and released at other times.

As DH is largely undeveloped in Ireland, it will take time to build customer confidence and trust in the district heating product. However, there is no substantial reason why DH wouldn't feature in our heating mix. Until the DH market builds critical mass, investment in a niche market may seem risky to some. Without the strong support of Building Regulations and coordinated energy planning, the opportunity for schemes to develop, thrive and expand in the future will be limited. We particularly need the development community to embrace DH networks and to see them in the wider context of delivering a sustainable built environment that will limit the negative impacts of the associated energy demands.

2. RESPONSES TO SELECTED OUTLINE QUESTIONS

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?

A lot can be learned from those countries where a DH market has been established from close to a zero base. In particular, how those markets have evolved and what policy/market design/regulatory/pricing interventions have had the biggest impact on stimulating investment in and connection to the networks. In addition, to assess what protections are in place for customers that have had the effect of establishing confidence in the infrastructure and the service provided. We can also learn how to implement 4th Generation district heating networks from the outset.

There is, however, sufficient research and evidence available to enable us to move forward into a phase of infrastructure deployment and demonstration of business models/customer adoption strategies. Research should be focussed on policy/market issues outlined above and the implementation of DH schemes should not be delayed while waiting on new research.

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

Existing desk research, international case studies and learnings from demonstration projects in Ireland should be used to identify the best technologies/business models/regulatory frameworks to be used in DH networks and to quantify the contribution that DH can make to national carbon reduction targets. This carbon reduction contribution from DH should be embedded in national policy. Targets for DH penetration, cost competitiveness and carbon intensity should be set at a national level. These targets should be incorporated into Local Authority City/County development plans to identify areas where DH is to be prioritised, particularly in areas zoned for growth, such as SDZs or SDRAs. National and Local Authority climate action policies/plans need to specifically enable and drive DH deployment, rather than simply encourage it.

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

N/A

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

It is well understood that compact urban areas have higher heat densities and are therefore appropriate for the development of DH networks. Strategic Outcome 1 of the National Planning Framework is “Compact Growth”. Increased density is cited as making DH more feasible and DH is identified as a growth enabler specifically in Dublin, Galway, Cork, Limerick and Waterford.
We believe it is more a case of providing demonstration of successful deployment and ensuring that specific development projects are not considered in isolation but in the wider context of a coordinated and integrated DH development plan.

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)?

Regulations introduced to the DH sector should be appropriate to the Irish market, noting we are unlikely to reach threshold penetration levels in the short to medium term. As recognised in the consultation document, imposing overly complex regulatory requirements may hinder market development at this juncture but important that those schemes that do progress are developed to best practice and in the best interests of the customers being served.

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

This would very much depend on the progress achieved over the next 2-3 years. As the DH market develops over the coming years, it will become apparent which elements of Article 24 should be introduced in the interest of consumer protection.

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

Provided the developer of the DH network is required to comply with codes of practice and best practice guidelines developed by an appropriate standards authority there should be no reason to restrict ownership.

Q8: Should there be a district heating market regulator?

Lessons can be learned from successful examples of regulatory frameworks in jurisdictions with mature DH markets. A roadmap can be developed – appropriate to the Irish context – to deliver the optimum regulatory framework as this market matures. As mentioned in our response to Question 5, it is important not to burden this nascent market with over-regulation, while protecting the public interest. Depending on the elements of Article 24 that are adopted and the ownership structures that emerge, the need for a DH Regulator should be assessed over the coming years.

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

District heating networks are vital pieces of infrastructure delivering essential services to its customers. They are capital-intensive and have lifespans of several decades. Complexity will arise with technological advancements, expansion and interconnection of networks. To ensure coherent development of the market and to ensure interoperability, as well as to protect the network customers, development of Codes of Practice (CoP) and Best Practice Guidelines is essential. Much can be learned from other markets, but guidance must be developed to suit the Irish context.

A “Centre of Excellence” could be established to offer expertise to support DH network development across all local authorities (including the develop planning standards, codes of practice etc.), a role that Codema is currently fulfilling to schemes under development in SDCC & DCC.

It is also important that the development of guidance should be undertaken in conjunction with NSAI so that the emerging documents are embedded in relevant regulations.

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?

The National Planning Framework recognises the benefits of high-density development and compact growth for district heating. There is no issue in terms of ambition to deliver higher density development. What is required however is the translation of this ambition into specific planning direction. As key growth areas are identified within county and city development plans, Local Authorities should perform techno-economic studies to identify specific areas where District Heating is the optimum solution. Local Authorities should provide direction for DH development in these areas rather than permitting single-building decisions, which may be sub-optimal. The Poolbeg West SDZ scheme is potentially a good example to follow, where DH is central to the development of the area.

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

The purpose of Part L of the Building Regulations is to deliver the optimum carbon and energy outcome for any one development, but not necessarily across multiple independent developments. Part L is technology agnostic, but the commercials of compliance do influence technology decisions. Building regulations should attribute appropriate carbon, energy efficiency and renewable energy values to district heating and promote the most sustainable heat sources on these networks.
Planning Authorities and DH Network developers should encourage adoption of DH where feasible and where it represents the lowest carbon outcome. As Part L encourages compliance at the lowest cost, DH connection charges must be cost competitive to encourage growth of the network.

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?

We understand there is a need to amend the planning regulations to afford DH Network developers the powers and responsibilities to deliver infrastructure to facilitate connection to, maintenance of and enhancements to DH Networks. We agree that DH infrastructure should be treated similar to other underground infrastructure.

Outline Questions on Financing

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

At this juncture there is a dependence on exchequer/European support to progress DH schemes being driven by the Local Authorities. It is likely that these supports will need to be available in the medium term if other DH schemes are to be progressed.

Q14: What are the most appropriate financing mechanisms for developing district heating in Ireland?

Development of DH networks is capital-intensive and will require substantial funding. The most suitable funding mechanisms and structures for each scheme will, however, depend on several factors including whether the scheme is privately or publicly developed, the cost-recovery models adopted and how much of the anticipated demand is "*locked-in*". Until such time as the development of DH networks is supported by a policy framework that offers cost recovery certainty, the provision of exchequer/local authority funding will be critical.

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

At this early stage of DH network development, we should not be too prescriptive as regards the business delivery models deployed, although there is evidence internationally that where a development has strong local authority involvement it is more likely to succeed.

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?

N/A

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?

Private property developers will focus on building regulation compliance unless incentivised or mandated to adopt low carbon heating systems solutions that leverage a more sustainable infrastructure. If a development is only considered in isolation it can lead to a sub-optimal energy infrastructure outcome unless an integrated energy planning approach is mandated and whereby connection to an existing (or future) heat network is available at a comparable cost.
As set out earlier, there is no substantial reason why Ireland would not have DH feature in its heating mix. The key obstacle is probably the fact that Ireland has heated its buildings in other ways until now and so there is little really known about

DH. It is therefore likely that the rollout of actual projects will provide evidence to developers about its potential. Therefore, consideration should be given to establishing an explicit target to have a number of DH schemes up and running by 2025-2030 and to develop action plans to deliver these projects. This could help to stimulate the DH industry.