

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

CEWEP Ireland welcomes the opportunity to respond to this consultation.

CEWEP is the umbrella association of the owners / operators of waste-to-energy (WtE) facilities, representing approximately 500 plants across Europe. Our members represent nearly 90% of European WtE capacity.

CEWEP Ireland is the Irish branch of CEWEP Europe and has two members: Indaver, which operates the Meath Waste-to-Energy Facility and is proposing to develop similar facilities in Belfast and Cork; and Covanta, which operates the Dublin Waste-to-Energy Facility.

Over the next few years it is anticipated that members will have a total treatment capacity of over 1,100,000 tonnes per annum residual waste and export more than 90MW electricity and/or heat.

WtE facilities have the potential to provide waste heat as a heat source through district heating (DH) or industrial heat networks. This source of heat is currently not recognised in any Irish energy policy as a viable source of heat, even though it is indigenous, abundantly available and zero carbon. In order to ensure that waste heat contributes towards the renewable heat targets, the relevant articles in the Renewable Energy Directive should be transposed by the mid-2021 transposition deadline.

Our response focuses on the questions that are most relevant to potential producers of heat.

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?

Research on the interaction of ETS/non-ETS sources of heat needs to be examined. For example, what happens if prospective heat network customers fall within the scope of the ETS and are then provided with heat from non-ETS sources.

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

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

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

Given that the National Planning Framework sees a pivotal role for compact development (i.e. urban settlements that could contain many potential development areas suitable and capable of re-use to provide housing, jobs, amenities and services), research on the best methodologies that also incorporates DH into the assessment tools would be useful.¹

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)?

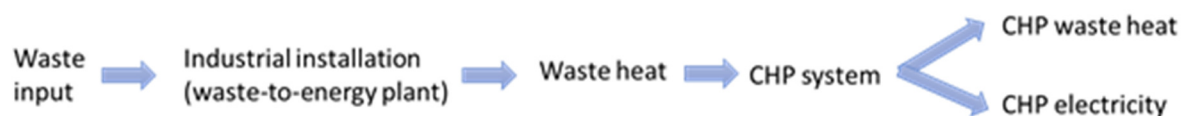
The elements of Article 24 that should be introduced in the short term are;

“1. Member States shall ensure that district heating and cooling suppliers provide information to end-consumers on their energy performance and the share of renewable energy in their systems. Such information shall be in accordance with standards used under Directive 2010/31/EU.”

However, in order to implement aspects of Article 24 in a meaningful way and to assist in the objective of providing information regarding the share of renewable energy in DH systems, aspects of Article 23 (which relate to mainstreaming renewable energy in heating and cooling) must also be transposed in the near term.

“Waste heat or cold” is defined in the directive as “...unavoidable heat or cold which is generated as by-product in industrial or power generation installations, or in tertiary sector, **which would be dissipated unused in air or water without access to a district heating or cooling system, where cogeneration process has been used or will be used or where cogeneration is not feasible;**”. It is logical that recoverable heat use should be a priority.

Article 23(1) seeks to promote the use of renewable energy in the heating and cooling sector, whereby each Member State is to attempt to increase the share of renewable energy supplied for heating and cooling by an indicative 1.3% as a yearly average for the periods 2021-2025 and 2026-2030 (Art 23(1)). Waste heat can count **up to 40% towards** the yearly target of the 1.3% increase of renewable heating.



The waste heat in the diagram above is the by-product of the industrial process (the thermal treatment of the waste) and the part of it which goes to district heating or cooling meets the directive’s definition of “waste heat or cold” and therefore can meet the share of renewable energy in the heating and cooling sector.

¹ Government of Ireland, *National Planning Framework*, <http://npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf>

Article 23(4) provides a range of options for Member States to increase to meet the 1.3% annual increase of renewable heating, including:

*“(a) **physical incorporation of renewable energy or waste heat and cold in the energy and energy fuel supplied for heating and cooling;***

*“(b) **direct mitigation measures such as installation of highly efficient renewable heating and cooling systems in buildings or renewable energy use or the use of waste heat and cold for industrial heating and cooling processes;***

*“(c) **indirect mitigation measures covered by tradable certificates proving compliance with the obligation through support to indirect mitigation measures, carried out by another economic operator such as an independent renewable technology installer or energy service company - ESCO providing renewable installation services;***

*“(d) **other policy measures, with an equivalent effect to reach the yearly increase set out in paragraph 1, including fiscal measures or other financial incentives.”***

Therefore, in order to ensure that waste heat contributes towards the renewable heat targets, (a) and (b) in Article 23(4) should be transposed by the mid-2021 transposition deadline.

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

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

In Member States where there is a tradition of DH, network ownership tends to be in the hands of municipalities/local authorities or State institutions. Across northern, eastern and central Europe, DH supplies up to 50% of the total heat demand. In contrast, Ireland is starting from a starkly lower base as DH currently provides less than 1% of Ireland’s heat demand.

The National Development Plan includes a list of investment actions and outlines the need to support “*new initiatives in district heating (such as the Dublin Docklands’ District Heating Scheme) in cities and large towns, with a leading role for State bodies, for example, Gas Networks Ireland, and Local Authorities.*”² Keeping the low level of DH development to date in mind, a joint ownership model involving a key role for State bodies is preferable.

Q8: Should there be a district heating market regulator?

Some form of regulation is required in order to provide guidance and oversight in the areas of consumer protection, safety and pricing.

Heat networks have features of natural monopolies. Customers may have limited ability to switch to an alternative heating system, be it another heat network or a different source of heat as their property may not have a gas supply, electric heating may be too expensive or there may be

² Government of Ireland, *National Development Plan 2018-2027*, https://www.gov.ie/pdf/?file=https://assets.gov.ie/831/130718120306-5569359-NDP%20strategy%202018-2027_WEB.pdf#page=1

contractual/price barriers. Heat networks also require a relatively large capital expenditure to build the infrastructure.³

Keeping these issues in mind, effective regulation will serve as an important measure to incentivise investment in DH infrastructure development.

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

In line with comments by the Irish District Energy Association (IrDEA), the current knowledge gap in Ireland regarding DH means it is vitally important that guidelines are developed to ensure a minimum standard is reached in regard to projects at all stages of the process including feasibility, design, business models, legal agreements, procurement, construction and installation, commissioning, operation and maintenance. Guidance is also required on relevant regulations.

IrDEA has commenced work on developing appropriate guidelines/Code of Practice specifically for the Irish market. There should be some form of public support to assist the development of these guidelines.

In addition, 24(10) of S.I. No. 426 of 2014 European Union (Energy Efficiency Regulations 2014) states that guiding principles for the preparation of installation level cost-benefit analysis are required for DH network development.⁴ These should be developed and made publicly available.

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?

In line with comments made by IrDEA, planning authorities should apply planning conditions similar to those used in London in areas where heat density is suitable for DH. This includes applying conditions that buildings must be 'DH enabled' in these zones, that they must connect to the DH network if it is a lower carbon solution to an individual solution, and importantly ensuring any new industrial development with a useful waste heat source is future-proofed to connect to a DH network.

With regards to the development of industrial heat networks, changes to the Strategic Infrastructure Act should be considered; specifically the seventh schedule to the Planning and Development (Strategic Infrastructure Act) 2006. It should be amended to make provision for the development of industrial heat networks. As energy infrastructure is already included in the seventh schedule to the Act, the incorporation of heat network energy infrastructure would be a natural next step in facilitating such development in planning terms.

Such infrastructure development projects if considered to be Strategic Infrastructure would then be assessed according to three criteria:

³ Competition and Markets Authority, *Heat networks market study*, 23 July 2018, https://assets.publishing.service.gov.uk/media/5b55965740f0b6338218d6a4/heat_networks_final_report.pdf

⁴ S.I. No. 426 of 2014 European Union (Energy Efficiency Regulations 2014), <http://www.irishstatutebook.ie/eli/2014/si/426/made/en/pdf>

- whether the development is of strategic economic or social importance to the State or the region;
- whether it contributes substantially to fulfilment of National Planning Framework (NPF) objectives or any regional spatial and economic strategy in force; and
- whether it has a significant effect on the area of more than one planning authority.

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

Yes. Recent updates to Part L of the building regulations made significant progress in encouraging developers to use DH instead of other heating/cooling options (where possible).

While progress has been made in this regard, further changes are required in the Dwelling Energy Assessment Procedure (DEAP) which produces the Building Energy Rating (BER). This relates to the requirement for new dwellings to meet renewable energy *and* carbon performance targets which poses difficulty when waste heat when used as a source of heat for DH. In future, assessments should only be based on efficiency and carbon emissions.

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?

As referenced in the response to Q10 above, it is important to incorporate heat network energy infrastructure in the Strategic Infrastructure Act. The fact that heat network infrastructure is not afforded the same rights in the Strategic Infrastructure Act as other utility developers is potentially impeding its development. In the case whereby local authorities are named as the legal heat network utility owner/joint-owner, they should be afforded the same rights as other utilities to lay pipes.

Outline Questions on Financing

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

Two DH networks currently under development secured grant funding through DCCAE's Climate Action Fund.

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

The type of financing will be largely dependent on the type of scheme. However, given the relative immaturity of the DH market in comparison to other forms of heat, government funding will be essential until such time that DH can compete on an equal footing with other forms of heat. Furthermore, the cost of carbon (and a rising carbon tax) will also have an important influence in incentivising consumers to explore low-carbon heating solutions.

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

This will be largely dependent upon the type of network (whether residential or industrial heat consumers), the level and type of State involvement in the scheme etc.

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?

Notwithstanding the predicted competition for non-exchequer sources of funding given the scale of the decarbonisation challenge, there are a number of risks surrounding the development of DH networks with the potential to impact the ability to finance projects. Measures to mitigate these risks include providing certainty around DH utilities statutory powers to open roads, install infrastructure and supply energy in the same way that other utilities do and therefore include easement rights, rights to install pipes etc.

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?

Yes. Allowing large/major energy users to offset carbon taxes would make use of energy that would otherwise be wasted, assist in decarbonising heat and ultimately increase system efficiency.