Rialtas na hÉireann
Government of Ireland

District Heating Steering Group

Report

2023

Prepared by the Department of
Environment, Climate and Communications
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Minister's Foreword

The establishment of the District Heating Steering Group is a critical step on our journey towards developing district heating in Ireland. The National Heat Study produced by the Sustainable Energy Authority of Ireland demonstrates the potential for up to 54% of heat in buildings to be supplied by district heating, which is a proven technology that can decarbonise the built environment, diversify fuel sources for heat, and improve quality of life.

I am grateful to the members of the Steering Group for their efforts to set out an achievable pathway for expansion of district heating, building on the examples provided by the Tallaght District Heating Scheme and the Dublin District Heating Scheme. Their expertise will continue to be of immense value to Government and to the Department as we work to implement their strategic recommendations. Going forward, the Steering Group will report on its work to the Heat Task Force, a development which will ensure that heat policies are streamlined as we ramp up efforts to achieve our 2030 targets for the heat sector.

It is with pleasure that I welcome this Report to Government. I am committed to engaging with Cabinet colleagues in order to implement the recommendations of this Report and to ensure that appropriate resources are committed in order to overcome the challenges facing this nascent sector in Ireland.

Eamon Ryan TD
Minister for the Environment, Climate and Communication

1 Background

Decarbonising our existing stock of residential and commercial buildings - primarily those constructed before 2006, so that they require less energy, and draw on fossil fuels to the lowest extent possible - remains one of the biggest challenges facing Ireland in a renewable energy context. Ireland has fallen short on delivering on its national target of 12% renewable heat and, in 2021, the built environment accounted for 12.3% of Ireland's greenhouse gas emissions in 2021, down from 13.6% 2020.[1]

Ireland has the lowest share of renewable heating and cooling in Europe. At 5-6% Ireland is very significantly behind the EU average and is a long way off the best performers across the EU (Figure 1).

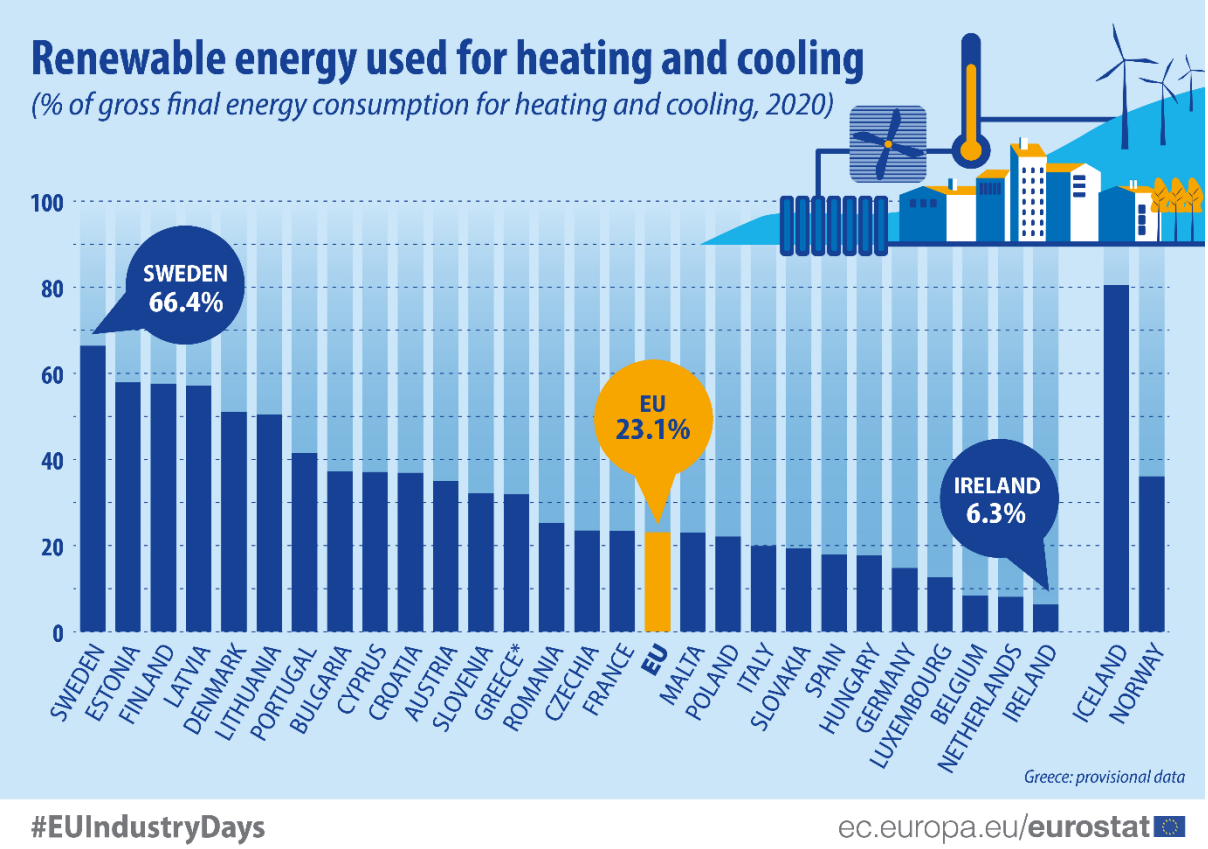

Figure 1

In terms of district heating, Ireland is very far behind other EU countries: district heating makes up less than 1% of Ireland's heat market. A single relatively large-scale district heating scheme has been developed in Ireland, led by South Dublin County Council, working with large public sector bodies, Amazon Web Services, and international experts to deliver

[1] Climate Action Plan 2023, Page 161

the first phase of an excellent project in Tallaght. There is a nationally strategic project being undertaken by Dublin City Council using the waste heat from the incinerator to heat public sector, commercial and residential buildings in the city area and work to design and construct other networks throughout the country is underway by other local authorities.

For Ireland to increase its share of renewable heat, to increase security of supply from indigenous renewable heat sources and to improve price certainty and affordability to consumers, the delivery of district heating at scale, together with the accelerated roll out of heat pumps, is vital. Ireland currently relies on imported gas and oil to heat and cool 90% of its buildings. However, through new building regulations, 90% of new build homes are now using renewable heat and weaning existing buildings off fossil fuels is the next major challenge. While the national retrofit programme, which supports heat pump technology, is building serious momentum, district heating requires major impetus.

District heating can play a key role in improving energy efficiency and reducing emissions in Ireland - it is a tried and tested technology that uses a network of highly insulated pipes to deliver heat from a central energy source to provide space heating and hot water to the buildings connected to the network. It can offer flexibility in fuel choice and is therefore highly suited to wide scale, rapid decarbonisation of heating systems. District heating also allows for alternate combinations of energy resources to be used at different times over the lifetime of a district heating network.

National policy in Ireland has recognised the contribution that district heating can make to Ireland's energy and climate goals and is underpinned by the findings of the Sustainable Energy Authority of Ireland's National Heat Study 2022, which found that up to 54% of heat demand in Ireland could be provided by district heating from renewable heat.[2]

The Climate Action Plan 2023 commits to implementing the recommendations of this Report and to reach a delivery target of up to 2.7TWh by 2030, with up to 0.8TWh by 2025.

The District Heating Steering Group was established further to Action 187 in the Climate Action Plan 2021 to coordinate the development of district heating policy and to report to Government. The Steering Group brought together subject matter experts in renewable heating/energy; land use planning; energy regulation; local government; and finance. Detailed information on the membership and structure of the Steering Group is contained in appendix 1.

[2] National Heat Study, district heating and Cooling: Spatial Analysis of Infrastructure Costs and Potential in Ireland, Page 7

This Report contains recommendations to Government for its consideration, and outlines actions necessary to develop this sector in Ireland under the following four key pillars: Finance, Regulation, Planning and Research.

Key Recommendations

1. Legislative underpinning

The absence of developed policy, legislative and regulatory frameworks was identified as a key barrier to the mobilisation of private and public sector investment in district heating. Legislation is required as a priority to support the development and expansion of district heating networks and to attract investment. Primary legislation will be required to ensure that developers of district heating projects have the necessary legal powers (vires) to operate in the sector, and to facilitate regulatory provisions to enable customer protections, as well as putting in place licensing and consenting provisions for district heating operators. Legislation should also mandate that public sector buildings connect to available district heating networks (where technically and economically feasible), and that industrial facilities supply waste heat to district heating where total rated energy input is at least 1MW. Additionally, legislation should provide for a single technical standard that facilitates the growth and strategic interconnectivity of district heating systems and provisions for State ownership of district heating infrastructure in the longer term.

2. Single Entity/Utility

The Steering Group considers that, in the long-term, district heating should develop nationally as a sector under central direction, with a single State entity or a utility overseeing the development and expansion of networks[3]. A regulatory model should also be developed to include provisions for State ownership of district heating infrastructure in the longer term[3].

Until the appointment of a central body overseeing the sector, district heating should continue to be delivered through the accelerated delivery of existing and planned projects. Advice and support should be provided centrally, to ensure standardisation and acceleration of projects, through a new National District Heating Centre of Excellence under the remit of the Sustainable Energy Authority of Ireland in partnership with relevant expert organisations (as expanded upon at 3. below), and with corporate governance oversight provided by the

[3] The 2015 Energy White Paper – Ireland's Transition to a Low Carbo Energy Future refers to the State retaining ownership of energy infrastructure.

Department of Environment, Climate and Communications (DECC). Private sector involvement in the industry should be encouraged and facilitated as much as possible from the outset, with the District Heating Centre of Excellence ensuring a coherent and standardised approach to the roll out. This will also support a future move to a single State entity or a utility.

3. National District Heating Centre of Excellence

Until such time as decisions are taken in relation to establishing a single entity to oversee the sector, a National District Heating Centre of Excellence could, on a centralised basis, provide the skillsets, expertise and knowledge required by project sponsors in the short term. The District Heating Centre of Excellence would ensure the following:

- support for project sponsors to accelerate delivery of existing and planned district heating projects.
- support for DECC in the development of the longer-term strategy for the expansion of the sector including the process for establishing an entity to oversee the sector in the long-term.

Total capital costs to deliver 2.7 TWh of district heat are expected to be in the region of €2.7 - €4 bn and, similar to electricity and gas networks, some of these costs would be financed over the long term and repaid as part of the heat price. It is, however, likely that, while the industry is nascent, State support will be required. Part of the mandate of the District Heating Centre of Excellence will, therefore, be to explore avenues to leverage existing State funding and support the development of supplementary investment streams.

4. Financial supports

The Steering Group considers that the financing of district heating systems should be predominantly market based, with the provision of supports (such as domestic connections to a network) consistent with other decarbonised heat sources. Further exploration of the contractual and financial arrangements available to support district heating in Ireland (e.g., examination of the use of concession contracts or Public Private Partnership models) is required and should be undertaken by the Centre of Excellence and DECC. The provision of supports should be underpinned by the data obtained through economic analysis undertaken by the District Heating Centre of Excellence, to include the following elements:

- Existing funds, such as the Climate Action Fund, to continue to be utilised in the short to medium term, to support both development of projects and capital costs.

- Existing grants for decarbonised heating e.g., residential retrofit grants and business support grants to be adapted to include district heating connection costs/heat exchangers.
- Consideration of a distinct district heating fund to be established to pool and provide Capex supports for technical and financial expertise, to project sponsors seeking to install district heating schemes.
- The inclusion of district heating connections on Warmer Homes Scheme free upgrades.
- The inclusion of all district heating equipment on the Accelerated Capital Allowance scheme (and any other commercial sector incentives).
- How to appropriately ensure that those for whom connection to district heating is a feasible option, do not install an individual heat pump.
- The potential for private sector development and investment in district heating.
- How to support or deliver heating and cooling plans for relevant local authority areas, as required under the Energy Efficiency Directive recast of 2023.

A national level assessment of the most suitable candidate areas for district heating in Ireland should also be conducted by the District Heating Centre of Excellence that will, inter alia, support policy and regulations, provide standardised data to local authorities, and facilitate stakeholder engagement.

DECC and the District Heating Centre of Excellence should engage with InvestEU Advisory Hub to explore a scope of work to assist with the establishment of a viable district heating roll out in Ireland.

2 Key Principles

The Steering Group and its Working Groups focused on four key areas necessary for the expansion of district heating in Ireland:

- Research and Policy Insights,
- Economic and Consumer Protection Regulation,
- Planning (land use), and
- Finance.

While discussing best practice, sharing of expertise, site visits and engagement with operators of existing/developed schemes, the Steering Group identified key principles that it considers should frame the rollout of district heating:

- Ensure that customers are charged a competitive price.
- Ensure a safe and reliable heat supply to all customers, in line with just transition principles.
- Prioritise decarbonisation of heating by promoting renewable heat and waste sources for district heating, in line with the definition of efficient district heating set out in the Energy Efficiency Directive 2012/27/EU as 'a system using at least 50% renewable energy, 50% waste heat, 75% cogenerated heat or 50% of a combination of such energy and heat'.
- Measure the feasibility of district heating networks against low carbon technologies such as individual heat pumps (air source or ground source), Combined Heat and Power or biomass.
- Maximise the contribution of district heating energy hubs to ensure diversity of fuel sources.
- Regulate for consumer protection and customer service standards.
- Support social and economic growth in the context of transition towards a zero-carbon society.
- Maximise development of local opportunities for renewable and waste heat supply.

Building on the work that has been undertaken by local authorities, most notably by South Dublin County Council with support from Codema, the Steering Group has developed a

series of recommendations to facilitate the rapid deployment of district heating in Ireland to meet climate goals, and to contribute to security of energy supply and energy price stability.

3 Economic and Consumer Protection Regulation Working Group

The Economic & Consumer Protection Regulation Working Group was chaired by the Commission for Regulation of Utilities (CRU) and undertook a broad exploration of initial economic regulation and consumer protection considerations by discussing a number of key questions. Recommendations were made across three main areas:

- structure of the district heating sector;
- economic and consumer protection regulation; and
- areas requiring additional policy considerations or decision making.

The Group determined that regulatory consideration should be given to all consumers of heating or cooling from district energy systems, while policy measures should favour schemes that meet the definition of efficient district heating. Additionally, regulatory requirements should extend to multi-apartment and multi-purpose buildings with a central heating or cooling source, and smaller schemes should be encompassed by the regulatory framework.

The Group noted that:

- The design and role for economic regulation and consumer protection in each of the three constituent parts of a district heating system (i.e., supply, delivery, and end users) needs to be carefully considered.
- Clarity is required around the ownership and operating models of the three main parts of a district heating system:
    - there are a multitude of network infrastructure ownership and operating models across Europe, ranging from fully public to fully privatised models, with a range of public-private partnerships in between.
    - the development of district heating network infrastructure requires large upfront long-term investments, and a fully privatised model would be difficult to implement in the absence of significant policy incentives.
    - ownership of existing network utilities in Ireland (e.g., electricity, gas, water etc.) are under State or semi-State ownership.
- It is possible that a public sector model or public/private hybrid model of ownership and operation of network infrastructure may be a feasible option. Decisions in this

regard will need to be taken following examination of the wide range of potential ownership and operation models that are in place across Europe, to determine the most appropriate model for Ireland.

- There are opportunities for district heating operators to invest in the development of heat supply/generation or to adapt existing heat sources to capture waste heat or improve heat recovery and overall energy efficiency.
- There is potential for public or part-public development and ownership of heat generation capacity, although appropriate safeguards will be required to ensure continuity of service in the event that a private entity ceases to operate.
- Careful planning of network infrastructure will be critical to enabling private sector investment in heat supply/generation.
- Policy and regulatory frameworks for the sector will be a key enabler to investment.

4 Finance Working Group

The Finance Working Group formed the view that public investment will be required to develop district heating as, to date in Ireland, there has been an insufficient policy and regulation for district heating to provide reassurance to private investors in relation to security of investment.

The Working Group concluded that district heating projects will require funding across their entire project lifecycle. In particular, technical, and financial expertise should be provided for project development, and it will be necessary to account for financing to maintain the asset.

During its considerations, the Group noted that:

- The development of a viable business model is required for the district heating sector to expand in terms of delivery and financial supports, and it will be necessary to identify third party funding options.
- The 2015 Energy White Paper refers to the State retaining ownership of the State's energy infrastructure and the business models developed should take account of the need to ensure State ownership of the networks in the longer term.
- A centralised approach to project support and development should establish "best practice" and help to adopt a standardised approach to the technical and commercial development of projects.
- Where heat demand density is insufficient to be economically viable, further scrutiny will be necessary to justify such connections/project development. To allow district heating to emerge as a heating solution for buildings off the national gas grid, an economic viability assessment should be conducted.
- Given the large upfront cost and the expected low rates of return for district heating (based on international experience), State support is likely to be required to facilitate the delivery of early projects due to the high capital outlay and uncertain nature of the customer connections. At the outset, the financial feasibility gap could be bridged through grant funding in the short-term, with further options to be explored and identified in the medium to long-term.
- Beyond the establishment and expansion phases, it will be important that the district heating sector can operate efficiently and economically in the medium term when compared to alternative options. As Ireland progresses towards 2050, it will be

essential that contracting structures evolve in an appropriate manner and that district heating develops as a self-sustaining decarbonising technology in Ireland.

The Group also noted the following investment considerations:

- Private companies need certainty in relation to how the processes of bringing a district heating scheme through development to delivery will work. Clear timelines and procedures will be critical to ensuring the commitment of private investors.
- Additionally, customer uptake must be guaranteed to a reasonable extent – the exploration of appropriate supports for households to connect to district heating networks will be important in this regard.
- Areas of concentrated heat demand must be assessed for the availability of waste heat and renewable heat. For networks to be assessed as viable, network developers must develop detailed business cases to demonstrate compliance with national strategic objective, value for money for the State and/or repayment capacity for a third-party funder.
- Third party funders (private funders, EIB, sovereign wealth funds, etc.) will need policy and regulation to give confidence to invest in the sector.
- The role of semi-state utilities in the development of district heating nationwide needs further consideration - semi-state utilities have extensive experience in delivering national strategic infrastructure and the potential role for Irish commercial semi-state utilities should be further explored in relation to the delivery of district heating in Ireland. If district heating in Ireland were to be delivered through an existing regulated utility, there is the potential that its assets could be incorporated into their existing Regulated Asset Base ("RAB"), giving potential access to wider sources of private funding for the delivery of district heating in Ireland.
- The European Commission has set up a centralised advisory hub which can act as a central contact point for grant assistance from EIB, the European PPP Expertise Centre ("EPEC") and the project directorate (technical & economic expertise), can access specialised commercial and financial advice from established advisory frameworks and its remit also extends to policy review.
- Long term public investment and support structures need to be put in place rather than once off grant calls. Depending on the scheme, investment can be required over

an extended period, i.e., greater than 15 years[4]. Therefore, potential sources of support for district heating networks should be long term and reliable.

There was consensus that public funding will be required from within existing support mechanisms to drive the expansion of district heating to 2027, public funding for district heating could come from within the existing National Development Plan, existing schemes such as the Support Scheme for Renewable Heat and Public Sector Pathfinder schemes, carbon taxes, and the Climate Action Fund. Any further future supports would be subject to normal budgetary procedures.

An appropriate ownership model for district heating must also be identified - a new national utility could be developed from the District Heating Centre of Excellence, or through transfer of those resources to an existing semi-state. In the medium to long-term, district heating development should be overseen on a national basis.

[4] Subject to ongoing Value for Money analysis and resubmission requirements

5 Planning Working Group

Ireland's planning system plays an important role in enabling the development of district heating through the existing planning policy and legislative framework and, to date, there are examples of the system delivering district or group heating schemes in a number of urban locations across the country, which have been the subject of a planning consent process.

To determine the scale of tailored policy and operational district heating systems in Ireland, the Department of Housing, Heritage, and Local Government surveyed all thirty-one local authorities in September 2022 in relation to district heating and a summary of the twenty-seven responses received is set out below:

- Twenty-two local authorities have a Development Plan policy which specifically lists or includes district heating.
- Six local authorities had a planning application to decision stage/Part 8[5].
- Seven local authorities have a current district heating scheme under construction or operational.
- Two local authorities have a district heating scheme at pre-planning or at planning stages (including Part 8 developments).

The Group noted that:

- Policy support for district heating at a national level already exists, specifically in the National Planning Framework (NPF), which sits at the top of a hierarchy of statutory spatial development plans. While promoting appropriate efficiency of land use, the NPF also supports energy and environmental efficiency and references district heating networks.
- The NPF is implemented at the regional level through statutory Regional Spatial and Economic Strategies (RSES) for each of the three Regional Assembly areas, all of which are supportive of district heating.
- Section 28 Guidelines, Development Plan Guidelines for Planning Authorities, issued in July 2022 and many of the Development Plans that have completed their plan review have integrated policies which specifically make reference to enabling and/or supporting the development of district heating.

[5] Part 8 refers to Local Authority development.

- Local Climate Action Plans are required to specify the mitigation measures and the adaptation measures to be adopted by the local authority as well as being consistent with the most recent approved Climate Action Plan.

The Working Group identified a number of factors, which underpin the viability of district heating networks to include:

- Appropriate urban locations with potential for compact urban growth and which could facilitate brownfield regeneration opportunities.
- The number and scale of customers and intensity of heat demand.
- The scale of available heat sources (waste/recyclable heat, location/capacity of grid at location).
- The density and spatial implications of network design and location (length of pipes, extent of network required).
- The diversity of building scale and use-type to ensure sufficient baseloads and demand.

The factors outlined above reflect the street-based, medium-high density, diverse urban neighbourhood approach which is central to the compact growth agenda set out in the NPF, implemented through the integrated plan-making hierarchy.

Having identified opportunity locations, the delivery of networks can be included as objectives in development plans and Local Area Plans. Many plans have already taken the initiative and have done so, including objectives for developments to be "district heating-ready" e.g. where it can be indicated to the level of requiring pipework to be laid (as in North Docks SDZ Dublin) or where there is potential for the creation of district heating utility - corridors to facilitate connective networks.

The future development of district heating must be supported by a plan-led approach and supported by a robust evidence base and appropriately tailored policies. Consequently, the development/finalisation of a national policy on heat is critical to informing planning policy as it applies at a national, regional, and local level.

6 Research and Policy Insights Working Group

The SEAI chaired the Research and Policy Working Group, considered the detailed research undertaken in the National Heat Study and examined additional research requirements.

The Working Group noted the requirement to develop a Long-Term Strategy to set out the guiding principles relating to the deployment of district heating and our 2050 target, and these should be consistent with EU legislation. Development of a strategy will be key to ensuring market confidence and investment for future district heating schemes.

The Working Group also noted that a technology roadmap to 2030 should also be completed, to identify barriers to the sector and to develop long-term implementation actions. While similar work for district heating has been undertaken on a European scale, there is a need for a similar Roadmap for Ireland.

As part of the National Heat Study, a spatially disaggregated heat demand map for Ireland was developed based on linear heat density per local electoral area. Further analysis is recommended to provide a national level assessment of the most suitable Candidate Areas for district heating in Ireland, based on a more refined, phased 'clustering' approach of:

1. Heat demand density;
2. Proximity to renewable and waste heat sources; and
3. potential social and environmental benefits.

Phase 1 of this work is being undertaken by SEAI, using the National Heat Study data, and an initial, modelled analysis to identify the towns and cities with the highest potential for developing Ireland's first district heating networks can be accessed online[6].

The development of a communication strategy for district heating, led by the District Heating Centre of Excellence, was also considered necessary as the district heating industry would benefit from having a social licence to operate. A communication strategy would comprise engagement activity to develop a common understanding, address misconceptions and develop trust. Communication goals will be identified to create a sense of consistency, predictability, certainty, and trust in the delivery of district heating in Ireland.

It is also considered essential that further research be supported on an ongoing basis to ensure the needs of the sector are understood and that the knowledge base remains relevant and keeps pace with technological developments, as well as the increasing need to

[6] District Heating Map | SEAI GIS Maps | SEAI

plan for district heating – for example, heating and cooling plans are now to be prepared for relevant local authority areas, as required under the Energy Efficiency Directive recast of 2023.

7 District heating and Group Heating Schemes

Heating and cooling systems can be categorised as communal systems, localised systems, or large-scale district heating systems.

Communal and localised systems are generally defined as group heating schemes, rather than district heating. The distinction between group heating schemes and district heating schemes is primarily one of scale - district heating schemes are of a large scale, supplying heat to groups of buildings, while group heating schemes are more localised systems, involving apartment blocks or residential housing estates. There are very few group heating schemes in Ireland: 11,000 households are estimated to receive heat from such schemes.

While the issue of group heating schemes was considered by the Steering Group, particularly the need to regulate existing schemes in the context of high wholesale gas prices seen last winter (these prices had previously been very competitive), the Steering Group's main strategic focus has been the expansion of district heating at scale. Without a centralised delivery model, it is likely that schemes would develop under different business delivery models, with communal heating schemes likely to be property developer led while district heating networks will be developed by public, private or utility entities. However, the Steering Group considers it appropriate that group heating schemes also be included in the context of development of a regulatory framework.

In line with the requirements of European Directives[7], the Commission for the Regulation of Utilities (CRU) has been appointed as Regulator of district heating networks and is currently working on the implementation of these provisions, along with the development of a broader economic and consumer protection regulatory framework for end users of district heating, including these on communal/group heating schemes.

The possibility of utilising renewable energy instead of natural gas was considered by the Steering Group, and the Sustainable Energy Authority of Ireland (SEAI) is currently overseeing a techno-economic study of the feasibility of moving gas fuelled group heating schemes to renewable energy sources.

[7] The Renewable Energy and the Energy Efficiency Directives in particular

8 Building Regulations Group

The matter of appropriate primary energy factors for district heating for use in Building Energy Rating and Part L calculations was the subject of an additional Building Regulations Group, which worked to develop default factors for use by the Dublin District Heating Scheme (when operational) and the Tallaght District Heating Scheme.

This Group, which was established to consider this specific matter, reached agreement on interim default factors to be used by the two district heating schemes. To avail of these interim factors for district heating, scheme operators collect monthly metering data on energy, fuel and heat that enters and exits the system, and make those data available to SEAI for review, to monitor the performance of the schemes with respect to the temporary factors.

9 Full suite of Recommendations

Recommendation 1: A National District Heating Centre of Excellence should be established, within SEAI in partnership with relevant organisations and under the remit of the Department of the Environment, Climate and Communications, to:

- Co-ordinate, support, and drive delivery of existing and planned district heating projects by public, private and utility developers in as timely a manner as possible.
- Provide technical support and staff upskilling to local authorities in developing existing and planned schemes, in order to develop a wider skillset in the sector, to reduce the burden on the local authority sector to increase its resourcing needs and to ensure consistency is brought to the development of district heating.
- Support raising public awareness at a national level.
- Support DECC in the preparation of legislation, economic analysis and development and implementation of a Long-Term Strategy for district heating in Ireland.
- Support project sponsors in identifying and sourcing EU funding, and,
- Develop a technology roadmap to 2030 to identify barriers to the sector and facilitate development of the long-term implementation strategy.

Recommendation 2: Local authorities should, with the provision of a centralised support office in the District Heating Centre of Excellence, continue to develop existing projects in order to progress towards the 2025 district heating targets set out in CAP 23. In order to maximise development opportunities in the sector, policies and supports must also facilitate private and utility developers in delivering district heating schemes.

Recommendation 3: The District Heating Centre of Excellence should undertake detailed economic analysis of the feasibility of the following:

- Centralised models of network development, ownership, and operation, with consideration to be given to the involvement of utilities in the sector.
- A distinct and tailored district heating fund to be established to provide CapEx, supports for project development in the form of technical and financial expertise, to project sponsors seeking to install district heating schemes.

- Existing funds, such as the Climate Action Fund, to continue to be utilised in the short to medium term, to support both development of projects and capital costs.
- Existing grants for decarbonised heating (e.g., residential retrofit grants and business support grants) to be adapted to include district heating connection costs / heat exchangers.
- The inclusion of district heating connection on Warmer Homes Scheme free upgrades and the inclusion of all district heating equipment on the Accelerated Capital Allowance scheme (and any other commercial sector incentives).
- How to appropriately ensure that those for whom connection to district heating is a feasible option do not install an individual heat pump.
- How to support or deliver heating and cooling plans for relevant local authority areas, as required under the Energy Efficiency Directive recast of 2023.

Recommendation 4: DECC to bring forward proposals for legislation to provide for issues such as:

- A suitable regulatory and legal environment for the sector, including the facilitation of appropriate customer protection mechanisms.
- licensing and consenting provisions for all stages of district heating scheme development, as appropriate.
- powers to acquire district heating pipe networks, where required, in line with provisions facilitating other infrastructure networks.
- ensuring that the industry follows a single technical standard that facilitates the growth and strategic interconnectivity of district heating system.
- a mandate for public sector buildings to connect to available district heating networks where technically and economically feasible.
- mandating the supply of waste heat to district heating companies by industrial facilities whose total rated energy input is at least 1MW where technically and economically feasible.
- amendments to Section 32 of the Multi-Unit Development Act, 2011, to enable energy management contracts of longer duration where significant capital investment has been made.

Recommendation 5: DECC and SEAI to review supports for renewable heat production, such as the Support Scheme for Renewable Heat, and redesign, where appropriate, to facilitate suppliers connecting to a district heating scheme.

Recommendation 6: DECC and the District Heating Centre of Excellence should engage with InvestEU Advisory Hub to explore financing options for the establishment of a viable district heating roll out in Ireland, including supports available from the European Investment Bank.

Recommendation 7: That DHLGH, as part of the upcoming review of the National Planning Framework, strengthens the reference to district heating to reflect its role in meeting climate targets.

Additionally, the Department of Housing, Local Government and Heritage should undertake a review of relevant legislation to examine and address barriers therein, including addressing the legal matters of vires.

Recommendation 8: The District Heating Centre of Excellence, with DECC, to develop a Long-Term Strategy for district heating, to provide the guiding principles for the development of district heating in Ireland. The Long-Term Strategy should include approaches to increasing national support (technical/financial etc) expertise, utilisation of renewable and waste heat technologies, sectoral integration, and capacity building. The Long-Term Strategy will also address any further policy measures required.

Recommendation 9: That a national level assessment of the most suitable Candidate Areas for district heating in Ireland be completed by SEAI that will, inter alia, support policy and regulations, provide standardised data for developers, and facilitate stakeholder engagement.

Recommendation 10: Establish a funded grant programme for Feasibility Studies Development to allow further investigation into potential district heating schemes identified as part of the ongoing Candidate Areas Identification work.

Recommendation 11: SEAI should undertake research in relation to awareness, current views, experience of current users, preferences and levels of uptake expected based on:

a) district heating characteristics including heat source type,

b) population characteristics,
c) location/ dwelling characteristics and
d) interventions that could boost uptake.

Appendix 1: Structure of the District Heating Steering Group and Working Groups

District Heating Steering Group

The Steering Group was chaired by Assistant Secretary Barry Quinlan, DECC, with secretariat support also provided by the Department. In addition to DECC, the district heating Steering Group also includes representation from:

- Department of Housing, Local Government and Heritage
- Sustainable Energy Authority of Ireland
- Commission for Regulation of Utilities
- National Treasury Management Agency
- The City of Dublin Energy Management Agency
- Dublin City Council
- South Dublin County Council
- Limerick County Council

The Steering Group called upon additional expertise, as and when required, and established four formal working groups.

Economic and Consumer Protection Regulation and Standards Working Group

The Working Group is chaired by the Commission for Regulation of Utilities.
Membership also included:

- Department of the Environment, Climate and Communications
- Department of Housing, Local Government and Heritage
- Sustainable Energy Authority of Ireland
- National Treasury Management Agency
- The City of Dublin Energy Management Agency

Finance Working Group

The Working Group was chaired by the Department of the Environment, Climate and Communications.

Membership also included:

- Sustainable Energy Authority of Ireland
- National Treasury Management Agency
- Dublin City Council
- The City of Dublin Energy Management Agency

Planning Working Group

The Working Group was chaired by the Department of Housing, Local Government and Heritage.

Membership also included:

- Department of the Environment, Climate and Communications
- Sustainable Energy Authority of Ireland
- Dublin City Council
- South Dublin County Council
- Limerick City & County Council
- The City of Dublin Energy Management Agency

Research and Policy Insights Working Group

The Working Group was chaired by the Sustainable Energy Authority of Ireland.

Membership also included:

- Department of the Environment, Climate and Communications
- Department of Housing, Local Government and Heritage
- The City of Dublin Energy Management Agency