



UNITED KINGDOM – national policy framework

Current state of District Heating in the UK

17% by 2050: the government target for heating share to be met through heat networks * 25% of UK heat Networks are located in London * 8% of UK households use electric heating

“The district heating market in the United Kingdom is currently underdeveloped, but this could change in the forthcoming years. The government has identified that the economic potential of district heating could provide up to 17% of heat demand by 2030, compared to 2% at present, and the BEIS (Business, Energy & Industrial Strategy) (formerly Department of Energy and Climate Change) stated in a new infrastructure investment report that heat networks are now recognised by government as the UK’s third major energy network. The UK recognises that district heating is a key component of the technology mix needed to achieve the UK climate and energy objectives. The 2013 Heat Strategy sets out a vision of up to 50% of buildings connecting to heat networks by 2050. As of 2013, there were 2,000 district heating schemes in the UK and, as displayed on the graph, they occupy a market share of 2%. This is in contrast to natural gas, which represents the scale of individual boiler heating. Combined heat and power (CHP) acts as an important contributor to heat networks, supplying 80% of district heating and fuelled mainly through natural gas. This is followed by energy from waste, oil and biomass. The majority of schemes are fuelled by one primary heat source, backed up with gas boilers. In addition, CHP contributed 5.8% of total national electricity production and the small-scale CHP market has experienced significant growth, driven by favourable economic conditions.” (Source: Euroheat & Power)

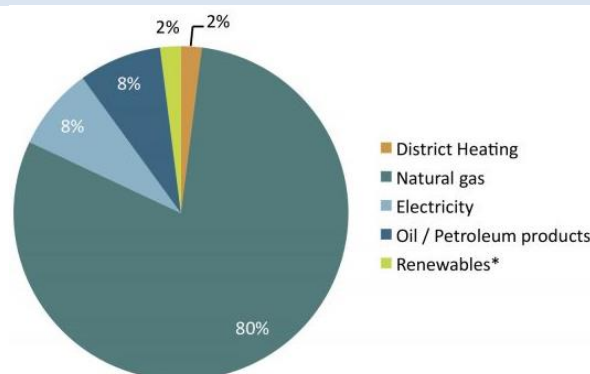


Figure 1: Share of energy sources used to satisfy heat demand in the residential sector in 2013. Source: Euroheat & Power, Country profiles, 2019

National policies affecting 4DHC development

The UK Government has set a target for 17% of UK heating needs to be met through heat networks by 2050. Over the past 5 years, interest in the UK heat networks market from domestic and foreign developers and investors has increased. Nevertheless, investment in the UK heat network market remains relatively low, with high internal rates of return needed and a perceived high level of risk.

- [The Future of Heating \(2012\)](#): A strategic framework for low carbon heat in the UK. The Strategy describes what the Government thought needed to be done to decarbonise heat to contribute to meet carbon budgets and the 2050 target (80% reduction based on 1990 levels)
- [The Heat Network \(Metering and Billing\) Regulations 2014](#) implement the requirements in the Energy Efficiency Directive with respect to the supply of distributed heat, cooling and hot water. This affects any owners of District Heating and communal heating systems, and covers requirements for notification, metering and billing.
- [Heat networks: Code of Practice for the UK](#). The code seeks to provide clear and measurable outputs which will ensure heat networks operate effectively and meet client and customer expectations. Setting minimum standards is a key step to provide greater confidence for specifiers and clients.

Other national regulations influencing energy efficiency and renewable energy investments, funding programs

- [Building regulation in England setting standards for the energy performance of new and existing buildings Part L 2013](#) - includes requirements for carbon reduction and connection to a district network can provide credits. Regulation 25A.

Regional or local policies influencing 4DHC development

Scotland:

- [The Heat Policy Statement](#): Towards Decarbonising Heat: Maximising the Opportunities for Scotland. The Heat Policy Statement sets out the Scottish Government's future policy direction for addressing the three key aspects of the Heat system: how we use it (heat demand and its reduction); how we distribute and store it (heat networks and heat storage); where our heat comes from (heat generation). It retains the level of ambition to achieve 1.5TWh of Scotland's heat demand to be delivered by district or communal heating and to have 40,000 homes connected by 2020.
- [Scotland's Heat Map](#): requirement for all local authorities in Scotland to produce and maintain information for their local authority area within a National Heat Map for Scotland. Over time the Heat Map will become a guidance tool about future planning of heat networks.
- The [Scotland Building Act 2003](#) (Charging Orders) Regulations 2014 is the legislation that underpins the building regulations in Scotland, giving Scottish Ministers the power to amend UK regulations in certain matters including furthering the conservation of fuel and power and furthering the achievement of sustainable development

- [Planning Guidance, Section 6 Energy](#) - includes guidance on heating. Guidance for Domestic and Non-Domestic are separate.
- **The Sullivan Report: 'A Low Carbon Building Standards Strategy for Scotland'** sets out recommendations to drive forward standards and innovation.
- **Scotland's Energy Efficiency Programme:** the Scottish Government has designated energy efficiency as a National Infrastructure Priority, the cornerstone of which will be Scotland's Energy Efficiency Programme (SEEP) – a 15 to 20 year programme. SEEP will help local authorities to pilot new and innovative approaches to energy efficiency. Within the SEEP local authorities will be required to develop Local Heat & Energy Efficiency Strategy (LHEES) documents which will identify areas or district heating zones which can be consented for development. District Heating regulation and Licensing would also be included.

Northern Ireland:

- [Building Regulations of Northern Ireland - F1 Guidance:](#) Conservation of fuel and power in dwellings.
- [Building Regulations of Northern Ireland - F2 Guidance:](#) Conservation of fuel and power in non-domestic dwellings

Wales:

- [Building Regulations of Wales:](#) Part L of the Building Regulations (Conservation of fuel and power)

Local and regional good practices

- UK Government Heat Networks Delivery Unit (in BEIS) support local authorities in England with funding and advice for feasibility work to develop practical schemes to the point where the return on investment is clear. £320M investment to help implement schemes, through the Heat Network Investment Project and local authorities are being asked to put forward business cases.
- [Plymouth City Council, City Centre AAP CC05](#) policy: Under Policy CC05, adopted by Plymouth City Council the municipality is able to require that schemes connect or are future-proofed and contribute towards the network development. Draft Plymouth and SW Devon Joint Local Plan Policies DEV 34 and DEV35, which require connection or co-location.
- Draft Plymouth & SW Devon Joint Local Plan DEV34. 6 states 'Developments will be required to connect to existing district energy networks in the locality or to be designed to be capable of connection to a future planned network. Where appropriate, proportionate contributions will be sought to enable a network to be established or completed'. DEV35. 8 states 'For renewable or low carbon energy generating proposals (including energy from waste), where appropriate, the development should provide for the efficient distribution of heat off site, for the co-location of energy producers with users, and for the maximisation of energy recovery or efficiency of generation'. <https://plymswdevonplan.co.uk/policy>
- Plymouth City-Wide District Energy Strategy- Evidence base to support Joint Local Plan. Identifies DH Opportunity areas and generic characteristics where DH should be promoted: <https://www.plymouth.gov.uk/sites/default/files/PlymouthCityWideEnergyStrategy.pdf>
- [Aberdeen City Heat Network](#). As part of Aberdeen City Council commitment to providing Affordable Warmth to all householders, in 2002 the city embarked on a long-term programme

to connect all 59 of their off-gas multi-storeys (over 8 Storeys high) to CHP District Heating or communal heating systems (where CHP was not viable). To help deliver this programme of works and develop and manage the delivery of the CHP Network and supply of heat, the council established an Arm's Length External Organisation (ALEO) [Aberdeen Heat and Power](#), an ESCO, operating as a social enterprise, but is an independent company limited by guarantee.

BARRIERS to development of 4GDHC

Financial and market barriers

- **High capital costs and rates of interest** associated with commercial finance.
- **High electricity costs** can be an issue for heat pumps
- **Low gas prices** currently can reduce appetite to connect
- **Extent of Gas Network** (highly populated areas have access to gas network)
- **Developers can be very resistant** and cite reasons of viability, consumer attitude and choice to avoid delivery of solutions. Some examples of poor practice can also lead to **perception issues**.
- The big **national energy supply companies** generally only focussed on gas and electricity supply.
- Regulation of heat networks currently has **little control over pricing mechanisms**

Legal and policy barriers

- **Planning policies can require connection but does not always guarantee** this happens.
- **Heat Meter legislation** can also require heat meters where this is not necessary (e.g. as at Heerlen)
- **Limited choice for heat network developers and consumers** with regard the Heat Supply Market, in comparison to, for example gas & electric networks which have the ability to use existing connections to provide energy. Private wire can have legal issues to overcome in some cases. There is no mechanism for operators to do this with district heat at present, and this would be extremely difficult to manage and regulate, one reason being that there is a regulatory body that grants licences for gas and Electricity supply in the UK (OFGEM). Supply of private wire electricity, therefore would need to meet all necessary legal requirements of the regulatory body in order to be a legal supply entity.
- **Legislation of district heat networks at present is extremely limited**, if present at all (although undergoing a review process within Scotland).

Recommendations for policy makers – Solutions proposed

Financial and economic suggestions

- **Public sector financed schemes** can access lower cost finance.
- Increase the **tax incentives** for DH schemes
- Consider introduction of **greater incentives for connection** (or future-proofing) in Building regulations
- **Long term low cost loans** and **grant support** to help support development of Networks

Legislative and other recommendations

- **Clear national legislative policies** need to be in place that protect all parties for developed and developing heat networks, in order that there are protections in place for all stakeholders, including ensuring fair price for heat & standing charges , opting out of a network , and an independent mechanism to investigate poor practices
- Continue work on **technical standards for DH, including secondary and tertiary distribution, commissioning**. An example CIBSE and the ADE have started a project to update [CP1 - Heat Networks Code of Practice](#). The work is being funded by BEIS and aims to be as inclusive as possible throughout the heat network sector.
- Do not implement assumption changes proposed for SAP on network distribution losses, which would penalise district schemes
- Continue work on **understanding consumer behaviour, consumer protection and best practice** and support better engagement with consumers. (The BEIS commissioned a [Heat Networks consumer survey](#) in December 2017.)
- **Create opportunities for establishment of local heat or energy supply company**; movement away from national energy supply to local energy supply
- **Improve certainty through requirements for connection or future-proofing** where conditions appropriate through planning policies. Ensure planning guidance provides clear standards for design, and future-proofing
- Secure S106 (planning developer contributions) towards delivery of scheme.
- The Competition Markets Authority (CMA) has launched a study into the domestic heat network market that could potentially lead to a full market investigation if customer detriment is found. This could have downstream effects on the DH industry in respect of consumer protection, standards, and competition.