

2035 Heat Networks Target: Government Response

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Contents

Executive Summary and Context	1
Overview of Responses and Key Themes	2
Response to Issues Raised.....	4
Next Steps.....	7

Executive Summary and Context

Scottish Ministers must in terms of Section 92 of the Heat Networks (Scotland) Act, 2021 (“the 2021 Act”), by 1 October 2023, lay a draft of a Scottish Statutory Instrument containing regulations specifying a 2035 target relating to the combined supply of thermal energy by heat networks in Scotland.

The 2021 Act sets targets for the combined supply of thermal energy by heat networks, requiring this to reach 2.6 Terawatt hours (TWh) of output by 2027, and 6 TWh of output by 2030. These figures equate to approximately 3% and 8% of current non-electrical heat consumption respectively.

Consulting on a 2035 target was one of the actions set out in the Heat Networks Delivery Plan¹, which sits in the context of wider heat decarbonisation policy, in particular, the Heat in Buildings Strategy².

This document presents the key themes³ to emerge from the Scottish Government’s consultation⁴ for the proposed target relating to the combined supply of thermal energy through heat networks in Scotland in 2035. It also provides our response to the issues raised.

Our next steps, having taken account of the responses, and given the general support for the proposed target, are to set the target so that the combined supply of thermal energy by heat networks in Scotland reaches at least 7 TWh by 2035. This will be carried out by laying a Scottish Statutory Instrument in Parliament by the 1 October 2023, in line with the 2021 Act.

As there isn’t full agreement from stakeholders on the level of target, and given the limited data currently available to us, the onward intention is to review the heat network target once better information is available, such as heat network zoning.

It should also be noted that the target is a national target and national targets don’t necessarily translate directly to a percentage target for each local authority. Some local authorities may find that the opportunity for heat and/or cooling delivered by heat networks is well above the percentage equivalence for each of the national heat network targets.

¹ [Heat networks delivery plan - gov.scot \(www.gov.scot\)](https://www.gov.scot)

² [Heat in Buildings Strategy - achieving net zero emissions in Scotland's buildings - gov.scot \(www.gov.scot\)](https://www.gov.scot)

³ A full analysis of consultation responses has also been published and can be found on citizen space: [2035 target for the amount of heat to be supplied by heat networks - Scottish Government - Citizen Space \(consult.gov.scot\)](https://consult.gov.scot)

⁴ [Heat networks - thermal energy target 2035: consultation - gov.scot \(www.gov.scot\)](https://www.gov.scot)

Overview of Responses and Key Themes

A total of 28 responses were received. Of these, 23 were from groups or organisations and 5 were from individuals.

Overall, most respondents indicated that they supported the Scottish Government setting a 2035 target for the combined supply of thermal energy supplied from heat networks. Those that did not, felt it was too early to set a meaningful target at this stage.

Level of Ambition

There was general support for an overall “at least 7 TWh” national target for Scotland (7 TWh is equivalent to 9 percent of current non-electrical heat consumption). Arguments in agreement with the level of the proposed target included it being a good balance between providing the ambition to be a strong facilitator whilst remaining attainable or credible. However, several respondents also felt the target was not ambitious enough and others felt the target was too ambitious.

Relative Target

Multiple Local Authorities and a Professional/Representative Body suggested that it is more appropriate to set the target as a percentage of heat demand (9%), rather than as an absolute figure for heat supplied (7 TWh). The primary reason given by respondents for this view was a concern that there may be a greater reduction in heat demand than predicted as a result of energy efficiency regulations and improvements. Respondents set out that the consequence of this would be that 7 TWh would represent more than 9% of total demand and, therefore, would be a less feasible target to achieve.

Regional Targets

There was a lot of discussion around how the target translates to local authority targets. A number of local authorities noted that 7 TWh, or 9% equates to a high target within their area if equally applied to each local authority, and it should be clear that the national target doesn't translate to 9% for each local authority. In particular, many respondents expressed the view that the opportunities for cost-effective heat networks are considerably greater in large urban areas with dense populations and industry to provide multiple potential anchor loads, than in rural areas with dispersed populations and little or no access to appropriate anchor loads.

It was, therefore, suggested that the expected contribution of each area to the national target should reflect the local context and the region's ability to support viable heat networks.

Local Heat and Energy Efficiency Strategies and Building Assessment Reports

Respondents noted the importance of ensuring that the target is reviewed once Local Heat and Energy Efficiency Strategies (LHEES) are completed and Building Assessment Reports (BARs) data and formal designation of heat network zones has

been completed in line with the 2021 Act and associated regulations⁵. There was the suggestion that given this work is ongoing, it is too early to set the 2035 target.

Infrastructure and Funding Challenges

A number of Local Authorities and Professional/Representative Bodies highlighted that the delivery of the target requires considerable scaling-up of heat network activity, which has significant resourcing and skills implications, particularly for local authorities.

Related to this point, many such organisations called for more resources to be made available to support the delivery of the target, identifying the availability of flexible government funding and investment as critical to achieving the target.

Whilst noting this need for more resourcing for heat networks, many respondents stressed that this must not be at the expense of funding for other heat and energy improvements and technologies, particularly the fabric first approach. It was generally argued that a fabric first approach should be taken regardless of whether heat network capacity increased.

A range of organisations also flagged the importance of maintaining the quality of heat networks as the roll-out is scaled up, and the need for a robust regulatory system ensuring safety and fairness for customers.

Climate change and fuel poverty

Several respondents flagged the importance of aligning heat network targets with the 2045 Net Zero target, and that addressing climate change should be the primary focus of the roll-out of heat networks.

Linked to this, respondents identified that the heat network target should explicitly reference a requirement for new heat networks to be powered using renewables or other low or zero emissions sources of heat, to ensure that future projects do not contribute to greenhouse gas emissions.

A key consideration in setting policy targets for heat networks is ensuring that doing so does not cause fuel poverty, or exacerbate existing fuel poverty for new heat network customers. To this end, this consultation asked respondents to reflect on whether there are any specific fuel poverty considerations that need to be addressed as new legislation is implemented.

A range of responses were received. Most respondents noted that fuel poverty is a multi-faceted challenge and, therefore, requires multiple solutions. In terms of fuel poverty, a focus on heat networks is not seen as important as ensuring a 'fabric first' approach is taken to building retrofit and build. Yet, while heat networks were not necessarily seen either as a solution to, or a cause of, fuel poverty, they were argued to be capable of both exacerbating and alleviating the problem.

⁵ BAR and heat network zoning templates and guidance can be accessed from [Heat networks - Renewable and low carbon energy - gov.scot \(www.gov.scot\)](https://www.gov.scot/topics/energy/heat-networks)

Response to Issues Raised

Level of Ambition

We have taken account of the responses, and given the general support for the proposed target, we intend to set the target so that the combined supply of thermal energy by heat networks in Scotland reaches at least 7 TWh by 2035. This will be taken forward by laying a Scottish Statutory Instrument in Parliament by 1 October 2023, in line with the requirement on Scottish Ministers to do so within the 2021 Act.

However, as there isn't full agreement from stakeholders on the level of target, and given the limited data still currently available to us, we will review the 2035 heat network target and, if appropriate, other heat network targets once more evidence is available, such as LHEES and heat network zones designated by local authorities.

Relative Target

Currently, non-electrical heat consumption is a relatively good indicator of overall heat demand. However, as decarbonisation progresses and more heating systems move to electrical systems such as heat pumps, non-electrical heat consumption will increasingly be a poor measure of overall heat consumption. As such we do not think it is advisable to set a target relative to non-electrical heat consumption. Given the way electrical usage is metered, measuring all heat consumption including electrical heat consumption would require many assumptions making it at best an experimental data figure.

As such we continue to consider an absolute target a better option for 2035.

Regional Targets

The target is a national target and national targets don't necessarily translate directly to a percentage target for each local authority. Some local authorities may find that the opportunity for heat delivered by heat networks is well above the percentage equivalence of the national heat network targets.

LHEES and BARs

We agree that BARs, LHEES and heat network zoning will likely provide important considerations in target setting. This is one of the reasons we have prioritised the introduction of the duty on Scottish public authorities to produce BAR(s) and on local authorities to review heat network zones, providing templates and associated guidance on 30 May 2023⁶.

Infrastructure and Funding Challenges

In response to the issues raised regarding the funding and support for the delivery of the target, the two main schemes to assist the development of heat networks are the Heat Network Support Unit (HNSU) and Scotland's Heat Network Fund (SHNF). Our

⁶ BAR and heat network zoning templates and guidance can be accessed from [Heat networks - Renewable and low carbon energy - gov.scot \(www.gov.scot\)](https://www.gov.scot/topics/energy/heat-networks)

current focus is to encourage the use of HNSU and SHNF to support the achievement of our targets and our overall ambition for heat networks⁷.

The HNSU supports the growth of heat networks by addressing key challenges in the pre-capital stages of heat network development and building capacity across the public sector to deliver successful projects. Working primarily with the public sector, the HNSU identifies and supports prospective heat network projects. It offers advice and guidance to projects, as well as grant funding for pre-capital stages of works, for example developing feasibility studies and outline business cases. The HNSU is a partnership between Scottish Government, Zero Waste Scotland and Scottish Futures Trust. More information is available on the official website⁸.

The SHNF is a £300 million capital grant scheme available to applicants from the public and private sector for projects at capital readiness that can clearly demonstrate a funding gap.

This fund will stimulate investment and grow the low carbon heat sector, whilst reducing greenhouse gas emissions.

Commercialisation support is available for up to 10% of the total capital cost to a maximum of £1 million, subject to budget availability. Enabling support (for work such as project management and consultancy) is available for up to 10% of the total capital cost up to a maximum of £100,000. Projects requiring additional commercialisation and enabling support will be required to submit a request providing detailed information on why additional funding is required. More information is available on the Scottish Government website⁹.

Acknowledging the need to ensure funding for heat networks is not to the detriment to other funding sources for home energy improvements in order to reduce energy demand, the following Scottish Government funded support is available via Home Energy Scotland¹⁰:

- Home Energy Scotland Grant and Loan;
 - Grant funding for energy efficiency improvements up to 75% of the combined cost of the improvements, up to the maximum grant amount of £7,500, or £9,000 for households which qualify for the rural uplift.
 - Grant funding for heat pumps is up to £7,500, or £9,000 for households which qualify for the rural uplift. The remainder of funding requested can be taken up as an optional interest-free loan.
- Warmer Homes Scotland;
 - The Scottish Government's Warmer Homes Scotland programme offers funding and support to households struggling to stay warm and

⁷ The Heat Networks Delivery Plan sets out our ambition: a heat networks sector that:

- delivers affordable clean heat supporting delivery of emission reduction and fuel poverty targets
- develops local supply chains and attracts new public and private investment
- contributes to the development, and operation, of an integrated and resilient energy system.

⁸ [HNSU Website](#)

⁹ [Scotland's Heat Network Fund](#)

¹⁰ [Funding, Grants and Loans: Home Energy Scotland](#)

keep on top of energy bills. In most cases all costs will be met by the Scottish Government.

- Private Rented Sector Landlord Loan;
 - Funding to help registered private landlords to improve the energy efficiency of their properties.

The regulation of consumer protection is reserved to UK Government, and we have encouraged them to develop regulations in this area. The Energy Bill¹¹, once passed by UK Parliament, will provide the regulatory framework for consumer protection and is expected to be followed by secondary legislation providing additional detail. More details on the UK Government's proposals are set out in the Heat networks: building a market framework: Government Response¹². We will continue to engage with the UK Government on their proposals and work to develop a regulatory regime under the Heat Networks (Scotland) Act, 2021 with the aim that the UK and Scottish regulatory systems are as seamless as possible for both heat network operators and customers in Scotland.

Climate change and fuel poverty

Our ambition for the heat networks sector includes, as set out in the Heat Networks Delivery Plan, that the sector delivers affordable clean heat, supporting delivery of emission reduction and fuel poverty targets.

Our Fuel Poverty Strategy¹³ was published in December 2021 and sets out actions to tackle each of the four drivers of fuel poverty: poor energy efficiency of the home; high energy costs; low household income; and how energy is used in the home.

We recognise that the fabric first approach is vital in reducing energy demand. We have committed to regulating to ensure that all buildings across all tenures achieve a good level of energy efficiency by 2035, as set out in Chapter 8 of the Heat in Buildings Strategy. Our modelling for the 2035 target has thus assumed that energy efficiency improvements made in properties will reduce the energy demand of those networks.

With regards to the technologies used within heat networks and ensuring that they are low and zero emissions, as set out in the Heat Networks Delivery Plan (HNDP) from the point that the regulatory regime is in place, new heat networks, and additional plants for extensions, will need to be powered using low and zero emissions heat sources. Existing heat networks (and any new heat networks allowed on a case by case basis to use a small percentage of fossil fuels for back up and peaking heat¹⁴) will need to develop and implement a heat networks decarbonisation plan.

¹¹ [Energy Bill \[HL\] - Parliamentary Bills - UK Parliament](#)

¹² [Heat networks: building a market framework - GOV.UK \(www.gov.uk\)](#)

¹³ [Tackling fuel poverty in Scotland: A strategic approach](#)

¹⁴ In order to ensure that networks can remain resilient and affordable, we will require that, from the point that the regulatory system is in place in 2024, the vast majority of heat for new networks is to be provided from low and zero emission sources. However, in the near term, a small percentage of annual heat provided through some networks may need to be sourced from natural gas for the purposes of peaking and backup. The exact percentage will be determined on a case by case basis and the need will have to be evidenced, while showing other options have been explored.

Next Steps

We have taken account of the responses, and given the general support for the proposed target, we intend to set the target so that the combined supply of thermal energy by heat networks in Scotland reaches at least 7 TWh by 2035. This will be carried out by laying a Scottish Statutory Instrument in Parliament by the 1 October 2023, in line with the 2021 Act.

The following should also be noted:

1. There isn't full agreement from stakeholders on the level of target, and given the limited data currently available to us, the onward intention is to review the heat network target once better information is available, such as heat network zoning.
2. The target is a national target and national targets don't necessarily translate directly to a percentage target for each local authority. Some local authorities may find that the opportunity for heat delivered by heat networks is well above the percentage equivalence of the national heat network targets, while others may find the opposite. This will largely be dictated by local circumstances and there will be no consequence for those local authorities where heat networks are not deployed at scale. It will be important for local authorities to supplement national data with local knowledge and information to identify potential opportunities for heat networks. Further information has been provided through the LHEES methodology provided to all local authorities.



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