

Partial Business and Regulatory Impact Assessment (BRIA)

**2035 target for the amount of thermal
energy to be supplied by heat networks**

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1. Title of Proposal

2035 Target for the Amount of Thermal Energy to be Supplied by Heat Networks

2. Purpose and Intended Effect

Background

This partial Business and Regulatory Impact Assessment (BRIA) follows on from the Scottish Government's public consultation on the proposal to specify an additional target relating to the output from the combined supply of thermal energy by heat networks in Scotland to be reached by 2035.

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 output from the combined supply of thermal energy by heat networks in Scotland.

Consulting on the 2035 target was one of the actions set out in the Heat Networks Delivery Plan (HNDP),¹ which sits in the context of wider heat decarbonisation policy, in particular, the Heat in Buildings Strategy.² This Strategy highlighted that over the coming years the Scottish Government proposes a focus on so-called no- and low-regrets strategic technologies. These are the technological solutions where cost uncertainty is low and we already understand the costs of installation and running costs for consumers. Heat networks are one such technology outlined in the Strategy. Detail on the other technologies and the approach to those can be found in the Strategy. This document provides an indicative assessment of the impact of the Strategy on various parties and sectors within the Scottish economy.

It should be noted that this is deemed a partial BRIA as BRIA's have been carried out for the Heat in Buildings Strategy, and the Heat Networks (Scotland) Bill, which cover the impacts of the expansion of heat networks throughout Scotland. The proposed 2035 target supports further growth of energy efficient district heating in Scotland, and reference to these BRIA's have been made where appropriate.

¹ [Heat networks delivery plan - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/heat-networks-delivery-plan/pages/1-introduction.aspx)

² [Heat in Buildings Strategy - achieving net zero emissions in Scotland's buildings - gov.scot \(www.gov.scot\)](https://www.gov.scot/publications/heat-in-buildings-strategy/pages/1-introduction.aspx)

Additional information has been provided within this BRIA where more up to date statistics have been published.

Regulation of consumer protection is reserved to the UK Government. Since the Bill for the Heat Networks (Scotland) Act received Royal Assent in March 2021, UK Government has also introduced the Energy Bill³, which is currently progressing through Parliament. Parts of this Bill introduce protections for consumers of heat (from heat networks), as initially set out in the UK government Heat networks: building a market framework consultation⁴. This will change the wider regulatory regime for heat networks out with the policy being assessed in this Partial BRIA and the Heat Networks (Scotland) Act. Details of the impact of these UK government measures can be found in Impact Assessment for the Heat Networks Market Framework⁵. UK Government is currently consulting in more detail on consumer protection requirements of the market framework and has set out associated impacts⁶.

Objective

As set out in the Heat Networks Delivery Plan, our ambition is for 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; and
- contributes to the development, and operation, of an integrated and resilient energy system.

In setting a 2035 target we wish this to be ambitious whilst supporting the overall ambition. We propose to set the following target, where the combined supply of thermal energy supplied by heat networks in Scotland **reaches at least 7 TWh per annum by 2035.**

³ [Energy Bill \[HL\] - Parliamentary Bills - UK Parliament](#)

⁴ [Heat networks: building a market framework - GOV.UK \(www.gov.uk\)](#)

⁵ [Heat networks market framework: impact assessment \(publishing.service.gov.uk\)](#)

⁶ [Heat networks regulation: consumer protection - GOV.UK \(www.gov.uk\)](#)

We will review the 2035 and, if appropriate, other heat network targets once more evidence is available, such as Local Heat and Energy Efficiency Strategies (LHEES) and heat network zones designated by local authorities.

Rationale for Government Intervention

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 output from the combined supply of thermal energy by heat networks in Scotland

The 2021 Act sets targets for the amount of thermal energy to be supplied by heat networks, requiring this to reach **2.6 Terawatt hours (TWh) by 2027, and 6 TWh by 2030**. These figures equate to approximately 3% and 8% of current non-electrical heat consumption in 2019, respectively.⁷

Beyond this, Scottish Ministers must – by 1 October 2023 – lay a draft of the Scottish statutory instrument containing regulations specifying a 2035 target. In order to meet this timetable, a public consultation was carried out in late 2022.

3. Consultation

Within Government

The Energy and Climate Change Directorate (DECC), located in Director General (DG) Net Zero, had direct contact and discussion with the following directorates during the development phase:

- Directorate for Chief Economist (OCEA), located in DG Economy;
- Scottish Government Legal Directorate (SGLD), located in DG Corporate.

⁷ [Scottish Energy Statistics Hub](#) > Energy Efficiency > Demand Reduction > Heat Consumption > Sector. Non-electrical heat consumption value in 2019 of 78.726 TWh.

Public Consultation

In the consultation for the Draft Heat Networks Delivery Plan (HNDP), we asked for views on what should be considered in setting the future heat network supply targets. Respondents indicated that meeting the existing targets should be the focus of our work, while others believed that more time should be taken to decide a sensible 2035 target.⁸

Delaying the setting of a target would not meet the legal requirement of Scottish Ministers under the 2021 Act.

As part of the consultation for the 2035 Heat Network Target, 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.

There was general support for an “at least 7 TWh” national target for Scotland. (This 7 TWh figure is equivalent to 9% of current non-electrical heat consumption.)

Arguments supporting 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. Some suggested the target should be based on a percentage of heat consumption metric rather than a TWh metric.

4. Options

Potential targets have been developed principally using data produced as part of the First National Assessment (FNA) of Potential Heat Network Zones, published in March 2022.⁹

⁸ [Draft HNDP Public Consultation Analysis](#)

⁹ [Potential heat network zones: first national assessment - gov.scot \(www.gov.scot\)](#)

The FNA utilises the heat demands and outputs from the Scotland Heat Map,¹⁰ Home Analytics,¹¹ and Non-Domestic Analytics.¹² The approach and outputs align with the first steps of the current methodology¹³ for the identification of potential zones for heat networks that forms part of the LHEES Methodology. The report includes two main scenarios:

1. A higher estimate of potential (Higher Potential – referred to in the FNA as Baseline Criteria); and
2. A lower estimate of potential (Medium Potential – referred to in the FNA as Stringent Criteria).

The first of these sets a lower threshold in terms of heat demand, density, and distance, whilst the second sets a higher threshold, resulting in fewer potential areas being identified.

Table 1 below sets out a summary of three evidence-based options for a potential 2035 target. The FNA scenario datasets that have been used are shown next to each option. The table provides an indication of how these compare to non-electrical heat consumption.¹⁴

¹⁰ [Scotland Heat Map: information - gov.scot \(www.gov.scot\)](https://www.gov.scot)

¹¹ [Home Analytics housing stock data - Energy Saving Trust](#)

¹² Unpublished dataset developed by Energy Saving Trust on behalf of Scottish Government to provide more detailed address-level information about the non-domestic building stock in Scotland. Similar to Home Analytics.

¹³ LHEES Guidance available at: [Local heat and energy efficiency strategies and delivery plans: guidance - gov.scot \(www.gov.scot\)](https://www.gov.scot). LHEES methodology is available on request by contacting LHEES@gov.scot

¹⁴ [Scottish Energy Statistics Hub](#) > Energy Efficiency > Demand Reduction > Heat Consumption > Sector. Non-electrical heat consumption value in 2019 of 78.726 TWh.

Table 1: Summary of Options 1-3 for target(s)

Option for potential 2035 target (FNA Dataset)	Heat supplied (TWh/annum)	Comparator: current non-electrical heat consumption ^A
Option 1 (FNA Medium Potential)	6	8%
Option 2 (FNA Medium Potential)	7	9%
Option 3 (FNA Higher Potential)	12.5	16 %

Table notes:
^A [Scottish Energy Statistics Hub](#) > Energy Efficiency > Demand Reduction > Heat Consumption > Sector

5. Sectors and Groups Affected

Using statistics from the latest Business Register and Employment Survey (BRES),¹⁵ employment¹⁶ in the economic sector most closely associated with heat networks¹⁷ totalled 75 workers in 2021, down from a peak of 150 in 2020 and up from a low of 15 in 2015 (the earliest year for which we have data). This sector captures the “*production, collection and distribution of steam and hot water for heating, power and other purposes*”.¹⁸ At the level of local authorities, employment is highest in the Shetland Islands at 40 workers, followed by Highland and Aberdeenshire with 10 workers each. Due to Office for National Statistics (ONS) rounding convention, the sum of workers across local authorities does not equal the number of workers across Scotland as a whole.

¹⁵ ONS (2021). *UK Business Counts - enterprises by industry and employment size band*. Retrieved via NOMIS, 11/05/2023. API: IDBRENT

¹⁶ Employment includes employees plus the number of working owners. BRES therefore includes self-employed workers as long as they are registered for Value Added Tax (VAT) or Pay-As-You-Earn (PAYE) schemes. Self-employed people not registered for these, along with HM Forces and Government Supported trainees, are excluded. Working owners are typically sole traders, sole proprietors or partners who receive drawings or a share of the profits.

¹⁷ This sector is given by Standard Industrial Classification (SIC 2007) code 35.30, representing steam and air conditioning supply. Further information on SIC 2007 is available here: [UK SIC 2007 - Office for National Statistics \(ons.gov.uk\)](#)

¹⁸ Ibid.

Further employment information on the above economic sector across time, as well as ancillary sectors associated with heating, is presented below in Table 2. At a broad level, sector 25.21 covers the manufacturing of central heating radiators and boilers, and 28.14 and 28.21 cover manufacturing of ancillary heating components. As explained above, 35.30 is the economic sector most closely aligned with heat networks. Finally, sectors 43.22 and 43.29 cover construction activities, namely plumbing, heat, and air-conditioning installation, as well as other construction installation activities, respectively.

Table 2: Employment in likely-affected economic sectors, by SIC 2007 (Scotland)¹⁹

Sector (SIC)	Year						
	2015	2016	2017	2018	2019	2020	2021
25.21	150	150	150	150	150	200	200
28.14	600	500	600	500	500	500	350
28.21	75	45	75	50	75	200	200
35.30	15	25	20	125	75	150	75
43.22	16,000	17,000	18,000	17,000	19,000	15,000	24,000
43.29	3,000	2,500	3,000	3,000	3,000	2,500	4,500
Total	19,840	20,220	21,845	20,825	22,800	18,550	29,325

For further discussion of groups affected, please consult Section 0.

6. Costs and Benefits

More widely, UK research published in 2015 estimated capital costs ranging between £0.3 billion per TWh and £1.1 billion per TWh²⁰. The costs in the report are based on 2013/14 prices.

¹⁹ ONS (2021). *UK Business Counts - enterprises by industry and employment size band*. Retrieved via NOMIS, 11/05/2023. API: IDBRENT

²⁰ [Assessment of the Costs, Performance, and Characteristics of UK Heat Networks](#)

Based on this cost estimate, and noting that it is estimated that 1.4 TWh of heat was supplied by heat networks in 2021, to achieve at least 7 TWh will require investment of between £1.7 billion and £6.2 billion based on the current heat network output. This figure excludes any adaptations that may be required within existing buildings.

Based on the BRIAs carried out for the Heat in Buildings Strategy²¹, and the Heat Networks (Scotland) Bill²², the key sectors and groups impacted are as follows. It should be noted that the majority of the impacts below relate to establishing a regulatory regime under the Heat Networks (Scotland) Act, and the Scottish Government has set out that it will introduce a functioning regulatory regime in work packages completing this in 2025, (so this is expected to occur irrespective of the 2035 target). Additionally, as set out above, the UK Government is introducing legislation to protect heat consumers. The Scottish Government continues to liaise with UK Government and Ofgem regarding this legislation in order to ensure interoperability between the two regimes aiming to reduce the overall burden on business and the administrative cost of the UK and Scottish regimes.

- Consumers:
 - **Consumer pricing and bills** - the potential for changes in the levels of consumer bills.
 - **Consumer disruption from installation** - the potential for increased one-off disruption for consumers stemming from an increase in the number of heat network developments.
 - **Consumer service offering** - the potential for changes in the services offered to consumers. For example, changes in the availability of tariff types, services, and technologies.
 - **Consumer health and wellbeing** – the potential for increases in health and wellbeing from policy targeted at reducing fuel poverty.

²¹ [Heat in Buildings Strategy BRIA](#)

²² [Heat Networks \(Scotland\) Bill BRIA](#)

- Local Authority and Government:
 - **Development costs of a heat networks regulator** - the set-up and administrative costs that would be required in order to develop any new heat networks regulator to deliver the new regulatory regime. Including:
 - Development and delivery of any licencing regime
 - Delivery of facilitator role
 - **Development costs of a heat network consenting process** – the set-up and administrative costs that would be required in order to resource any team that would be issuing heat network consents.

- Business:
 - **Development and operating costs** – the potential for increase in development and operational costs for business stemming from specific technical requirements within the licence.
 - **Socio-economic assessments** - costs of developing and submitting project specific socio-economic assessments alongside the application for consent of any new heat network developments.
 - **Licensing process** - costs of application fees for a licence within the new heat network licensing scheme, as well as preparation and submission time.
 - **Unintended licence consequences** - potential consequences stemming from the inclusion of a single licence regime covering the design through to operation for multi-site operators. With individual licences delivered at organisation-level, there could be the potential for single problem-specific sites to risk licence revocation.
 - **Market dynamics** - the potential for changes in the number and concentration / market power of participants within the market due to higher barriers to entry.
 - **Deployment** - changes in the deployment and number of heat networks installed and operated, due to the overarching support provided to heat networks from the wider regulatory package.

- **Essential services companies** - potential impacts on other essential services companies such as retail energy suppliers, including decreases in provision of energy and subsequent revenues for energy suppliers from an increased deployment of households switching to heat networks.
- Wider Society:
 - **Carbon savings** - reductions in carbon emissions from the incremental increase in deployment of heat networks.
 - **Wider economic and job impacts** - wider economic impacts from policy stemming from increases in deployment of heat networks and potential impacts on the number of jobs.

7. Regulatory and EU Alignment Impacts

Article 25 of the 2023 recast of the Energy Efficiency Directive²³, which is due to come into force when it is published in the Official Journal in September 2023, sets out that Member States shall take adequate measures for efficient district heating and cooling infrastructure to be developed as identified in the National Comprehensive Assessment (NCA).

The proposed 2035 target supports further growth of energy efficient district heating in Scotland, and we will review, if appropriate, other heat network targets once more evidence is available, such as Local Heat and Energy Efficiency Strategies (LHEES) and heat network zones designated by local authorities.

8. Scottish Firms Impact Test (SFIT)

Most of the heat networks operating in Scotland can be classified as small to medium size enterprises. Typically, the networks would outsource many of their activities to contractors or arms-length organisations.

²³ [Energy efficiency and amending Regulation \(EU\) 2023/955 \(recast\)](#)

As part of the Heat Networks Scotland BRIA, research was carried out to determine the impact on Scottish firms. The main element of the proposals that was identified to impact existing organisations in the sector was the introduction of Heat Networks Licensing. Since most of the organisations consulted as part of the Scottish Firms Impact Test were small or medium size they highlighted the challenges around the capacity to handle any regulatory burden. However, all of the stakeholders were able to also identify a range of benefits resulting from Heat Networks (Scotland) Bill proposals. Reference should be made to the Heat Network Scotland BRIA for details on the benefits and challenges identified.

Feedback provided by stakeholders was taken into consideration when developing proposals for the Heat Networks (Scotland) Bill. In particular, the provisions regarding licensing have been developed to allow for flexibility in developing the preferred licensing process.

The stakeholders did not provide any monetary estimates in relation to the impacts the regulations may have on their businesses.

9. Competition Assessment

The target will apply to heat networks in Scotland and will, in conjunction with the Heat Networks (Scotland) Act 2021 and the Heat Networks Delivery Plan, support their roll out and contribute to delivery of fuel poverty and net zero targets.

10. Consumer Assessment

The target will support the roll out of heat networks, which in the right setting will help address fuel poverty. It will support roll out of zero direct emissions heating. It does not require the storage of consumer data. Consumer protection is reserved to the UK Government, but the Scottish Government is working with them and stakeholders to deliver effective protection. The Heat Networks (Scotland) Act also introduced a consenting and licensing regime that will support the consumers interest

11. Test Run of Business Forms

The proposals are not likely to bring in any new forms for business.

12. Digital Impact Assessment

No impact identified. The setting of the target should not be impacted by either the availability or lack of a digital / online context.

13. Legal Aid Impact Test

No impact identified. The introduction of the 2035 target is part of the 2021 Act already in place, therefore, the target itself will not create a new procedure or right of appeal to a court or tribunal, any change in such a procedure or right of appeal, or any change of policy or practice which may lead people to consult a solicitor.

14. Enforcement, Sanctions, and Monitoring

As set out above, the 2021 Act sets targets for the amount of thermal energy to be supplied by heat networks by 2027 and 2030. Chapter 7 of the Heat Networks Delivery Plan notes that:

- the Scottish Ministers will review the Heat Networks Delivery Plan and report every 2 years on the heat output of heat networks and emissions savings.
- Data reporting requirements will be developed as part of work to develop the regulatory system and will be subject to consultation in due course. We will work with the sector to ensure these requirements are proportionate and do not put an undue burden on heat network operators.

The proposed 2035 target follows the targets set for 2027 and 2030 and so is expected to use the same monitoring procedures as the 2027 and 2030 targets.

In other words, the monitoring of the 2035 target would be expected to be the same irrespective of which of the potential targets set out in the consultation document the statutory 2035 target might be based on.

15. Implementation and Delivery Plan

The 2035 target will be set by Scottish statutory instrument. Scottish Ministers must in terms of Section 92 of the 2021 Act, by 1 October 2023, lay a draft of a Scottish statutory instrument containing regulations specifying a 2035 target relating to the output from the combined supply of thermal energy by heat networks in Scotland.

The Heat Networks (Scotland) Bill BRIA sets out details regarding implementation of the other provisions of the Act and post implementation review of the Act.

As set out above, Scottish Ministers are responsible for reporting on heat network outputs.

16. Post-Implementation Review

Refer to Section 14. Within the 2021 Act, the Scottish Ministers must prepare a heat networks delivery plan, setting out how the provisions of this Act, and any other supporting policies, will contribute to increasing the use of heat networks in Scotland.

The reporting periods are every 2 years, and the reports must consider the following:

- how this Act and associated policies have contributed to an increase in the use of heat networks in Scotland in the reporting period,
- what progress has been made in the aggregate heat output of all heat networks in Scotland in the reporting period and, in particular, in meeting the targets specified in section 92(1),
- how the deployment of heat networks in Scotland has contributed to meeting emissions reduction targets set in the Climate Change (Scotland) Act 2009 during the reporting period.

Therefore, the impact of heat networks in Scotland will be reviewed and reported on every 2 years in line with the 2021 Act.

17. Summary and Recommendation

This BRIA lays out the rationale behind the introduction of the 2035 Heat Networks Target.

We recommend that the appropriateness of the heat network targets should be reviewed once heat network zones have been designated and heat network data is improved, and if appropriate, Ministers may modify these targets.

18. Declaration and Publication

I have read the Business and Regulatory Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits, and impact of the policy, and (b) that the benefits justify the costs. I am satisfied that business impact has been assessed with the support of businesses in Scotland.



Signed:

Date: 25 September 2023

Minister's Name: Patrick Harvie MSP

Minister's Title: Minister for Zero Carbon Buildings, Active Travel and Tenants' Rights

Scottish Government Contact Point: Suzanne le Miere



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